

CONTROLLERS – PLCS

MILLENNIUM 3 + PROGRAMMABLE LOGIC CONTROLLERS



CB12



CB20



CD20



XD10



XR10



XN03

- Expandable up to 50 I/O
- 10 bit analog inputs on DC powered models
- Large back-lit display - 4 lines by 18 characters
- Ethernet communication - modbus TCP/IP expansion module
- RS485 modbus communication expansion module
- Fully user programmable display and buttons
- Program via function block or ladder logic

- Analog output expansion available
- Single point modbus communication via programming port
- Real time clock/calendar standard on all controllers
- Available unit voltages; 12VDC, 24VDC, 24VAC, 100-240VAC

**CB series** economy 12 I/O and 20 I/O controllers. Program up to 250 block relay, transistor or PWM outputs. Relay outputs: 8A @ 250VAC. **CD series** standard 12 I/O and 20 I/O controllers display and buttons. Program up to 250 blocks relay, transistor or PWM outputs. Relay outputs: 8A @ 250VAC. Transistor outputs: 650mA @ 28.8VDC. Single point modbus communication. **XD series** expandable 10 I/O and 26 I/O controllers expand up to 50 I/O display and buttons. Program up to 500 blocks relay, transistor or PWM outputs. Communications expansion modules. Analog output expansion modules.

CB SERIES ECONOMY CONTROLLERS

Mfg. Part No.	Inputs/Outputs	Available Analog	Controller Type	Supply Voltage	Stock No.	Price Each 1-5
● 88970021	8/4Relay	4	CB12	24VDC	86K0451	161.08
● 88970023	8/4Relay	...	CB12	100-240VAC	86K0452	164.32
● 88970024	8/4Relay	...	CB12	24VAC	86K0453	169.54
● 88970031	12/8Relay	6	CB20	24VDC	86K0454	253.75
● 88970033	12/8Relay	...	CB20	100-240VAC	86K0455	263.99
● 88970034	12/8Relay	...	CB20	24VAC	86K0456	253.75

CD SERIES STANDARD CONTROLLERS

● 88970041	8/4Relay	4	CD12	24VDC	86K0457	190.03
● 88970043	8/4Relay	...	CD12	100-240VAC	86K0459	182.64
● 88970044	8/4Relay	...	CD12	24VAC	86K0460	190.03
● 88970045	8/4Relay	4	CD12	12VDC	86K0461	180.54
● 88970051	12/8Relay	6	CD20	24VDC	86K0462	273.09
● 88970053	12/8Relay	...	CD20	100-240VAC	86K0464	255.67
● 88970055	12/8Relay	6	CD20	12VDC	86K0466	282.59

XD SERIES EXPANDABLE CONTROLLERS

● 88970141	6/4Relay	6	XD10	24VDC	86K0481	201.07
● 88970142	6/4Solid State Relay	...	XD10	24VDC	86K0482	219.63
● 88970143	6/4Relay	...	XD10	100-240VAC	86K0483	207.10
● 88970144	6/4Relay	...	XD10	24VAC	86K0484	217.35
● 88970161	16/10Relay	6	XD26	24VDC	86K0485	297.90
● 88970162	16/10Solid State Relay	...	XD26	24VDC	86K0486	287.35
● 88970163	16/10Relay	...	XD26	100-240VAC	86K0487	296.14
● 88970164	16/10Relay	...	XD26	24VAC	86K0488	291.31
● 88970165	16/10Relay	6	XD26	12VDC	86K0489	277.83

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MILLENNIUM 3 + PROGRAMMABLE LOGIC CONTROLLERS (CONT.)

EXPANSION MODULES FOR XD10 AND XD26 SERIES EXPANDABLE CONTROLLERS

XR06 SERIES

Mfg. Part No.	Inputs/Outputs	Supply Voltage	Stock No.	Price Each 1-5
● 88970215	4/2Relay	12VDC	86K0493	105.83
● 88970211	4/2Relay	24VDC	86K0490	103.55
● 88970214	4/2Relay	24VAC	86K0492	106.96
● 88970213	4/2Relay	100-240VAC	86K0491	105.83

XR10 SERIES

● 88970225	6/4Relay	12VDC	86K0497	120.62
● 88970221	6/4Relay	24VDC	86K0494	111.36
● 88970224	6/4Relay	24VAC	86K0496	122.90
● 88970223	6/4Relay	100-240VAC	86K0495	121.75

XR14 SERIES

● 88970235	8/6Relay	12VDC	86K0501	132.00
● 88970231	8/6Relay	24VDC	86K0498	132.00
● 88970234	8/6Relay	24VAC	86K0500	135.42
● 88970233	8/6Relay	100-240VAC	86K0499	134.27

XE10 SERIES

● 88970321	6/4Relay	24VDC	86K0505	120.62
● 88970323	6/4Relay	100-240VAC	86K0506	121.75

XA04 SERIES

Mfg. Part No.	Description	Stock No.	Price Each 1-5
● 88970241	ANALOG EXP MODULE	86K0502	204.32

XN03 SERIES

● 88970250	MODBUS EXP MODULE	86K0503	164.99
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XN05 SERIES

● 88970270	ETHERNET EXP MODULE	86K0504	298.13
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ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Each 1-5
● 88970100	Programming Software on CD-ROM	86K0474	20.48
● 88970108	EEPROM Memory Module	86K0476	34.71
● 88970102	DB-9 RS232 Programming Cable	86K0475	80.79
● 88970109	USB Programming Cable	86K0477	85.34
● 88950108	0-20 mA to 0-10 V Input Module, 4 Inputs, 4 Outputs	19M8542	31.17
● 88950112	PWM to 0-10 V Output Module, 1 input, 1 Output	17M8580	51.33
● 88950300	12 VDC, 22 Watt, DIN-Rail Mount, Modular Power Supply	17M8586	99.46
● 89750160	Waterproof Front Panel Adaptor for EC12-SA12	17M8594	44.84
● 89750161	Waterproof Front Panel Adaptor for EC20-SA20-XT20-EX20	89H9830	51.33
● 89750153	Remote/Submersible Probe Type, -10°C to +40°C, IP65	17M8593	144.52
88950100	Programming Software	81C3574	11.68

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LIQUID LEVEL CONTROLS



HNM



MNS



HNE

For use to control liquid level or detect leaks. Models available for use with conductive probes, 0.25k to 1M, float switch, PNP NPN inputs, or to monitor min and max levels. All models are multi-voltage at 50-60 Hz or DC. 5A outputs.

HNM - CONDUCTIVE LEVEL PROBES. PUMP UP/DOWN

Mfg. Part No.	Supply Voltage	Output	Stock No.	Price Each
● 84870700	24 - 240VAC/DC	DPDT	86K0425	435.72

MNS - FLOAT SWITCH INPUT. PUMP UP

● 84870720	24 - 240VAC/DC	SPDT	86K0427	336.13
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HNE - CONTACT, PNP, NPN INPUT. PUMP UP/DOWN

● 84870710	24 - 240VAC/DC	SPDT	86K0426	413.96
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**ELCs, (EATON LOGIC CONTROLLERS), SOFTWARE AND ACCESSORIES**



**SMART RELAYS**



**Just Added**



**ELCs**

- Directly mounts on DIN rail
- Scalable I/O - from 10 to 256 I/O
- 240 instruction sets



**Graphic Display Panel**

- Modbus RTU and ASCII standard, Profibus and Devicenet modules available
- Removable terminal strips

At 1" wide, the ELC is one of the smallest PLC's available on the market today. Ideal for smaller applications of 40 I/O or less, but can be expanded up to 256 I/O. Expansion modules snap easily together, allowing for expansion without the use of rack. PC and PA controllers include a built-in numeric display for user-assigned process monitoring, error codes, display counts and more. PC controller includes two potentiometers. Analog and AC/DC digital I/O modules available. Capable of 1, 4, 8, 16 and 32 bit instructions, block compare, block move communications, interrupts, retentive memory, up to 512 counters and timers, PID and floating point. The programming software is available as an evaluation copy as a free download on the website. A 1 hour training guide is also available as a free download on the website.

**ELC CONTROLLERS**

Mfg. Part No.	Inputs	Outputs	Stock No.	Price Each	
				1-4	1-2
ELC-PB14NNDT-1	8 DC	6 Transistor	27K6014	213.31	
ELC-PC12NNAR-1*	8 AC Voltage	4 Relay	27K6015	270.55	
ELC-PC12NNDR-1*	8 DC	4 Relay	27K6016	270.55	
ELC-PC12NNDT-1*	8 DC	4 Transistor	27K6017	270.55	
ELC-PA10AADR-1*	4 DC, 2 Analog	2 Relay, 2 Analog	27K6010	466.93	
ELC-PA10AADT-4*	4 DC, 2 Analog	2 Transistor, 2 Analog	58M0201	486.24	

\* Include built-in clock/calendar

**DIGITAL I/O EXPANSION MODULES**

Mfg. Part No.	Inputs	Outputs	Stock No.	Price Each	
				1-4	1-2
ELC-EX08NNAN-1	8 AC Voltage	...	27K5998	97.60	
ELC-EX08NNDN-1	8 DC	...	27K5999	82.59	
ELC-EX08NNNR-1	...	8 Relay	27K6002	127.63	
ELC-EX08NNNT-1	...	8 Transistor	27K6003	127.63	
ELC-EX08NNDR-1	4 DC	4 Relay	27K6000	133.97	
ELC-EX08NNDT-1	4 DC	4 Transistor	27K6001	126.81	
ELC-EX16NNDR-1	8 DC	8 Relay	27K6004	150.88	
ELC-EX16NNDT-1	8 DC	8 Transistor	27K6005	150.88	
ELC-EX06NNNI-2	...	6 High-Current Relay	61M2000	143.33	

**ANALOG I/O MODULES**

Mfg. Part No.	Inputs	Outputs	Stock No.	Price Each	
				1-4	1-2
ELC-AN04ANN-1	4 Analog, 14-Bit	...	27K5993	263.45	
ELC-AN02NANN-1	...	2 Analog, 12-Bit	27K5992	260.13	
ELC-AN06AANN-3	4 Analog, 12-Bit	2 Analog, 12-Bit	60M2925	360.36	
ELC-TC04ANN-3†	J, K Type Thermocouple	...	60M2917	391.51	
ELC-PT04ANN-1†	4 PT 100Ω Platinum	...	27K6020	345.97	

† 14-Bit resolution

**GRAPHICS PANELS**

Mfg. Part No.	Pixel Format	No. of Functions	Stock No.	Price Each	
				1-4	1-2
ELC-GP02-1	160 x 32	10	27K6007	285.29	
ELC-GP04-03	128 x 64	10	60M2897	428.61	

**COMMUNICATION MODULES**

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	1-2
ELC-CODNET	Device Net Communication Module	34K0502	360.29	
ELC-COPBDP	Profibus Communication Module	34K0503	509.85	

**ACCESSORIES**

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	1-2
ELCSOFT	Programming Software ELC Controllers	27K6022	226.67	
ELCSOFTGP	Programming Software GP Units	27K6023	226.67	
ELC-PS01-1	24-Watt, 1-Amp Power Supply	27K6018	67.57	
ELC-PS02-1	48-Watt, 2-Amp Power Supply	27K6019	97.60	
ELC-HHP-1	Hand-Held Programmer	27K6009	408.41	
ELC-CBPCCLC3-1	Cable-Connect a PC or GP Unit to ELC	27K5996	48.77	
ELC-CBPCGP3-1	Cable-Connect PC to GP Unit	27K5997	48.77	
ELC-GPXFERMOD-1	Program Transfer Module GP Units	27K6006	98.21	

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**Features:**

- Snap-on DIN rail mounting
- EEPROM memory
- Password protection
- Daylight savings time
- User-friendly one-touch programming with on-board LCD display
- Compact Body size

**Specification:**

- Universal voltages (12/24VDC, 24VAC/DC, 100-240VAC/DC)
- 50 maximum I/O points with expansion modules
- 6 different I/O expansion modules available
- Up to 8 analog inputs and 2 analog outputs

cULus listed, IEC61131/VD0E631, EMC compliant, C-ticked listed FM approved for Class 1, Div.2; Class 1, Zone 2 hazardous locations.

**CPU MODULES**

Mfg. Part No.	Voltage	Output Signal	With Display	With Clock	Stock No.	Price Each	
						1-4	1-2
● FL1D-H12RCA	24VAC/DC	Relay	Yes	Yes	70K7672	152.85	
● FL1D-B12RCA	24VAC/DC	Relay	...	Yes	70K7669	123.27	
FL1D-H12SND	24VDC	Transistor	Yes	...	84K7715	138.06	
● FL1D-B12RCC	110-240VAC/DC	Relay	...	Yes	70K7670	128.20	
● FL1D-H12RCC	110-240VAC/DC	Relay	Yes	Yes	70K7673	157.78	
● FL1D-B12RCE	12/24VDC	Relay	...	Yes	70K7671	123.27	
● FL1D-H12RCE	12/24VDC	Relay	Yes	Yes	70K7674	152.85	

**EXPANSION MODULES**

Mfg. Part No.	Module	Voltage	Input/Output	Stock No.	Price Each	
					1-4	1-2
● FL1B-J2B2	Analog Input	24VDC	Analog Input	14M8167	94.62	
● FL1B-M08B2R2	Combo I/O	12/24VDC	DC/Relay	14M8169	64.35	
● FL1B-M08C2R2	Combo I/O	100-240VAC/DC	AC/DC/Relay	14M8170	66.24	
● FL1B-M08D2R2	Combo I/O	24VAC/DC	AC/DC Voltage/Relay	14M8171	66.24	
FL1B-CL1C12	LonWorks Com	24VAC/DC	...	82H8766	331.17	
FL1B-CAS2	AS-Interface Com	30VDC	...	08J5059	141.93	
● FL1B-M08B1S2	Combo I/O	24VDC	DC/Transistor	14M8168	64.35	
● FL1D-K2B2	Analog output	24VDC	Analog Output	84K7716	147.92	
FCSA-SIF2	Communication I/O	24VDC	Terminal/Receive	34M4528	235.61	

**ACCESSORIES**

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	1-2
● MT-101	Memory Cartridge Removal Tool	31B1186	1.25	
FL1B-Y1371-SW8	8pt. Simulator Switch (for 12, 24VDC Base Model Only)	08J5062	56.78	
● FL1B-PSP1	Direct Mounting Slides	08J5061	1.19	
● FL1A-PC1	PC Cable	31C1276	74.75	
● BAA1000	35mm Low Profile Aluminum DIN Rail 1 Meter with Holes	96B1269	5.97	
● BNDN1000	35mm Aluminum DIN Rail 1 Meter with Holes	96F6501	8.15	
● BNL6	End Clip for 35mm DIN Rails	12M9382	1.46	
FL1E-PB1	SmartRelay battery cartridge	10R5629	36.91	
FL1E-PC2	SmartRelay USB programming cable	51P3290	141.93	
FL1E-PG1	Memory and battery combination cartridge	10R5630	65.29	
FL1E-PM4	SmartRelay memory cartridge	51P2728	23.66	
FL1E-RD1	SmartRelay Text Display	58P0361	235.61	

**STARTER KITS**

● SMARTSTART-BAC-D	CPU Module: FL1D-B12RCC, Programming PC Cable, WindLGC Software	16M1849	205.41
● SMARTSTART-BDC-D	CPU Module: FL1D-B12RCE, Programming Cable, WindLGC Software, Simulator Switch	20M7782	205.41
● SMARTSTART-HAC-D	CPU Module: FL1D-H12RCC, Programming PC Cable, WindLGC Software	14M4143	228.36
SMARTSTART-HDC-D	CPU Module: FL1D-H12RCE, Programming PC Cable, WindLGC Software, Simulator Switch	20M7787	228.36

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(148830)

CONTROLLERS – PLCS

**FC4A MICROSMART PROGRAMMABLE LOGIC CONTROLLER**



Just Added



FC4A CPU's

MicroSmart



MicroPentra



Software

- Max. 264 I/O
- Datalink up to 32 PLCs
- Easy programming
- 20kHz high speed I/O
- Standard RS232C port, optional RS485/RS232 port
- UL, c-UL, Class 1 Div 2, CE, AB

**FC4A ALL-IN-ONE CPU**

Mfg. Part No.	Supply Voltage	Output Type	I/O Points	Stock No.	Price Each
FC4A-C10R2	100-240 VAC	Relay	10 (6 In/4 Out)	83C9473	173.28
● FC4A-C10R2C	24VDC	Relay	10 (6 In/4 Out)	82K8916	173.28
FC4A-C16R2	100-240 VAC	Relay	16 (9 In/7 Out)	83C9474	241.68
● FC4A-C16R2C	24VDC	Relay	16 (9 In/7 Out)	47M3613	241.68
● FC4A-C24R2C	100-240 VAC	Relay	24 (14 In/10 Out)	37K8627	342.00
● FC4A-C24R2	100-240 VAC 50/60 Hz	Relay	24 (14 In/10 Out)	66M8440	342.00
● FC4A-C24R2C	24VDC	Relay	14 In/10 Out	37K8627	342.00

**FC4A SLIM CPU**

● FC4A-D20K3	24VDC	Transistor Sink	20 (12 In/8 Out)	47M3614	310.08
● FC4A-D20S3	24VDC	Transistor Source	20 (12 In/8 Out)	47M3617	310.08
● FC4A-D20RK1	24VDC	Relay/Transistor Sink	20 (12 In/8 Out)	47M3615	310.08
● FC4A-D20RS1	24VDC	Relay/Transistor Source	20 (12 In/8 Out)	47M3616	310.08
● FC4A-D40K3	24VDC	Transistor Sink	40 (24 In/16 Out)	66M8441	542.64
● FC4A-D40S3	24VDC	Transistor Source	40 (24 In/16 Out)	47M3618	542.64

**ANALOG I/O EXPANSION MODULES**

Mfg. Part No.	Description	Stock No.	Price Each
FC4A-J8C1	8-pt voltage/current input	34M2289	296.40
● FC4A-L03A1	2-pt voltage/current in, 1-pt out	47M3619	323.76
● FC4A-J2A1	2-pt voltage/current input	27M4037	264.48
FC4A-J4CN1	4-pt combination (V.I, RTD, thermocouple) input	05N6666	296.40
● FC4A-L03AP1	2-pt RTD/Thermocouple in, 1-pt out	27M4039	346.56
FC4A-J8AT1	8-pt thermistor input	05N6667	318.29
FC4A-K2C1	2-pt output (-10-10V, 4-20mA)	34M2290	177.84
● FC4A-K1A1	1-pt output (0-10V, 4-20mA)	27M4038	250.80

**COMMUNICATION MODULES**

Mfg. Part No.	Description	Stock No.	Price Each
FC4A-AS62M	AS-Interface Master Module for slim CPU	82K8915	228.00
● FC4A-ENET	Web Server Module Including Interface Cable, CD ROM Manual and Quick Start Guide	82K8917	318.29

**ACCESSORIES**

Mfg. Part No.	Description	Stock No.	Price Each
FC4A-PH1	HMI Module for Displaying and Changing Required Operands (Not For Mfg. Part No. FC4A-D20RK1)	38C7080	45.60
FC4A-PT1	Real-Time Clock Cartridge	25C4117	41.04
● FC4A-PM32	32kb Memory Cartridge	27M4042	41.04

**MICROSTART STARTER KITS**

Mfg. Part No.	Controller Type	Power Supply	Software (Prog. Cable Included)	Stock No.	Price Each
MM-SMART-16	16 I/O All-in-One CPU	...	WindLDR	84C6193	394.80
MM-SMART-20	20 I/O Slim CPU	15 W	WindLDR	84C6197	538.80
MM-SMART-24	24 I/O Slim CPU	15 W	WindLDR	67C1030	514.80
MM-SMART-40	40 I/O Slim CPU	15 W	WindLDR	84C6202	814.80
MM-PENTRA-16	16 I/Os Slim CPU	30 W	WindLDR	34M2048	478.80
MM-PENTRA-24	24 I/Os All-in-One CPU	...	WindLDR	19M1586	478.80
MM-PENTRA-16-HG2G-EC	16 I/Os Ethernet/Color	30 W	WindLDR	10R5631	1139.09

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**FC4A MICROSMART PROGRAMMABLE LOGIC CONTROLLER (CONT.)**

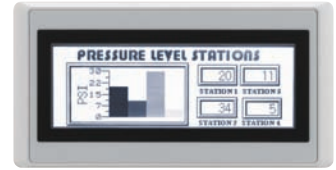
Mfg. Part No.	Controller Type	Power Supply	Software (Prog. Cable Included)	Stock No.	Price Each
MM-PENTRA-16-HG2G-EM	16 I/Os Ethernet/Monochrome	30 W	WindLDR	10R5632	956.69
MM-PENTRA-24-HG2G-EC	16 I/Os Ethernet/Color	30 W	WindLDR	10R5633	1139.09
MM-PENTRA-24-HG2G-EM	16 I/Os Ethernet/Monochrome	30 W	WindLDR	10R5634	956.69

**WINDLDR™ PLC PROGRAMMING SOFTWARE**

Mfg. Part No.	Description	Stock No.	Price Each
● FC9Y-LP2CDW	WINDLDR™ Windows-based PLC Programming Software	70C5332	248.38

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**MICROSMART PENTRA PLCS**



HG1F



HG2F



HG3F



HG4F

**Features**

- Fast execution time
- Up to 64 Kbyte memory
- Floating point math
- 32 bit data registers
- Modbus master and slave
- 56 PID loops with auto-tune
- Fastest micro controller on the market
- 32-bit data and floating point math
- Built-in Modbus TCP/IP, RTU, ASCII
- Up to 7 communication ports
- Max. 56 PID loops
- UL, cUL, Class 1 Division 2, CE, ABS

MicroSmart Pentra can be used in any type of control application and can handle very sophisticated tasks. Available in two different CPU base modules. Up to 512 I/Os can be configured in the MicroSmart Pentra system using the same FC4A MicroSmart expansion modules on this page.

**FC5A ALL-IN-ONE BASE**

Mfg. Part No.	Supply Voltage	Output Type	Total I/O	Stock No.	Price Each
● FC5A-C10R2	100-240 VAC	Relay	10 (6 in/4 out)	93K6469	198.51
● FC5A-C10R2C	24 VDC	Relay	10 (6 in/4 out)	93K6470	198.51
FC5A-C10R2D	12 VDC	Relay	10 (6 in/4 out)	10R5636	348.25
● FC5A-C16R2	100-240 VAC	Relay	16 (9 in/7 out)	93K6471	284.29
● FC5A-C16R2C	24 VDC	Relay	16 (9 in/7 out)	93K6472	284.29
FC5A-C16R2D	12 VDC	Relay	16 (6 in/4 out)	10R5637	498.75
● FC5A-C24R2	100-240 VAC	Relay	24 (14 in/10 out)	66M8442	384.04
● FC5A-C24R2C	24 VDC	Relay	24 (14 in/10 out)	93K6474	384.04

**SLIM BASE**

● FC5A-D16RK1	24 VDC	Relay & Transistor Sink*	16 (8 in/8 out)	93K6475	354.12
● FC5A-D16RS1	24 VDC	Relay & Transistor Source*	16 (8 in/8 out)	93K6476	354.12
● FC5A-D32K3	24 VDC	Transistor Sink	32 (16 in/16 out)	93K6477	573.57
● FC5A-D32S3	24 VDC	Transistor Source	32 (16 in/16 out)	93K6478	573.57

**DIGITAL I/O EXPANSION MODULES**

Mfg. Part No.	Description	Stock No.	Price Each
FC4A-N08A11	8-pt 120VAC Input	82K8918	100.32
● FC4A-N08B1	8-pt 24VDC Input	25C4107	86.64
● FC4A-N16B1	6-pt 24VDC Input	25C4108	155.04
FC4A-M08BR1	4in/4out DC in Relay out	25C4106	141.36
FC4A-T08K1	8-pt Tran. Sink output	25C4120	127.68
FC4A-T08S1	8-pt Trans. Source output	25C4121	127.68
● FC4A-R081	8-pt Relay output	27M4043	118.56
● FC4A-R161	16-pt Relay output	29M9917	196.08

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**MICROSMART PENTRA PLCS (CONT.)**

**OPTIONAL MODULES**

Mfg. Part No.	Description	Stock No.	Price Each
● FC4A-ENET	Web Server module	82K8917	318.29
FC4A-PC1	RS232C comm. adapter	25C4109	41.04
FC4A-PC3	RS485 comm. adapter	25C4111	41.04
FC4A-HPC1	RS232C comm. Module	83C9483	41.04
FC4A-HPC3	RS485 comm. Module	35C2511	50.16
● FC9Y-LP2CDW	WindLDR PLC programming software	70C5332	248.38
FC4A-KC4CA	PLC programming cable	94C3980	36.48

**SOLUTION PACKAGES**

Whether you want to give IDEC products a try or already use them but want a complete automation system that is quick and easy to put together, you'll find a great deal in our solution packages. Each package includes an IDEC operator interface:

- HG1F-4.6" STN monochrome LCD touchscreen
- HG2F-5.7" STN 256 color or monochrome LCD touchscreen
- HG3F-10.4" TFT 256 color LCD touchscreen
- HG4F-12.1" TFT 256 color LCD touchscreen

They also include a MicroSmart or MicroSmart Pentra PLC (Slim or All-In-One design), a 24VDC slim power supply, cables and software.

Mfg. Part No.	Operator Interface	Controller Type	Stock No.	Price Each
MM-PENTRA-16-HG1F	HG1F 4.6" Mono STN 1	6 I/O Slim CPU 30W	34M2049	1048.69
MM-PENTRA-24-HG1F	HG1F 4.6" Mono STN 1	24 I/O All-In-One CPU 30W	34M2053	1048.69
MM-PENTRA-16-HG2F-C	HG2F 5.7" Color STN 1	6 I/O Slim CPU 30W	34M2050	1704.94
MM-PENTRA-24-HG2F-C	HG2F 5.7" Color STN 1	24 I/O All-In-One CPU 30W	31M6839	1704.94
MM-PENTRA-16-HG3F	HG3F 10.4" Color STN 1	16 I/O Slim CPU 30W	34M2051	3012.19
MM-PENTRA-24-HG3F	HG3F 10.4" Color STN 1	24 I/O All-In-One CPU 30W	28M8895	3012.19
MM-PENTRA-16-HG4F	HG4F 12.1" Color STN 1	16 I/O Slim CPU 30W	34M2052	3274.69
MM-PENTRA-24-HG4F	HG4F 12.1" Color STN 1	24 I/O All-In-One CPU 30W	34M2054	3274.69

**WINDLDR - PLC PROGRAMMING SOFTWARE**

**Features**

- User-friendly interfaces
- Online editing and programming
- Simulation mode
- Custom Monitor Dialog
- Simple-to-use editors
- Comment download
- Verify Program

Mfg. Part No.	Description	Stock No.	Price Each	
			Each	2-4
● FC9Y-LP2CDW	WindLDR Windows-based PLC programming software	70C5332	248.38	241.29

(88879)

**WINDLGC PROGRAMMING SOFTWARE**



- Ladder or function block programming
- Online monitor
- Program comparison
- Time simulation
- Simplified connection of functions
- PDF or JPG format saving



WindLGC is the exclusive programming software for the IDEC SmartRelay (shown above) using Windows®. Edit, save and print out your programs. To configure IDEC SmartRelay FL1C series, you must upgrade to WindLGC version 4.0. System Requirements: Windows 95 or higher, Pentium 266MHz or higher, RAM: 64MB or more (128MB recommended), Hard Disk: 90MB, Display: 800 x 600, 256 colors or higher.

Mfg. Part No.	Description	Stock No.	Price Each
● FL9Y-LP1CDW	Version 5.0 CD w/Online Manual	31C1356	104.92

(72436)

**EASY® PROGRAMMABLE CONTROLLER**



Feature	Easy 500	Easy 700
<b>Rung Lines</b>	128	128
<b>Timers</b>	16	16
<b>Markers</b>	32	32
<b>Conditional Jumps</b>	8	8
<b>Text Display</b>	16	16
<b>7-Day Time Switch</b>	8	8
<b>Year Time Switch</b>	8	8
<b>Analog Input (DC Units Only)</b>	2 (0-10 VDC)	4 (0-10 VDC)
<b>AC Input Resolution</b>	10-Bit, 1024 Points	10-Bit, 1024 Points
<b>Analog Value Processing</b>	16	16
<b>High Speed Counter</b>	2	2
<b>Frequency Counter</b>	2	2
<b>Master Reset</b>	3	3
<b>Operating Hour Counters</b>	4	4

- Program in Ladder Logic Directly on Unit Using Built-in Keypad
- Up To 12 Inputs and 8 Outputs
- High Current Relay Outputs
- Performs Basic PLC Functions
- Up To 121 Lines of Logic
- Local or Remote Expansion of Inputs and Outputs

Replace counters, timers and analog comparators using built-in user-friendly operating elements and an LCD display. Units are programmed in ladder logic right on the device itself with no external programming software or hardware required. Draw circuit diagrams on the LCD display using the built-in keypad. Expansion units increase the number of I/O. Optional software allows programming from a PC (requires optional cable and Windows 95). DIN rail mounting. UL listed, CSA certified, CE compliant.

**BASIC UNITS, 12VDC**

Mfg. Part No.	Inputs		Outputs		Display	Stock No.	Price Each
	Digital	Analog*	Type	Number			
● EASY512-DA-RC	8	2	Relay	4	LED	44K0392	302.31
<b>BASIC UNITS, 24VDC</b>							
● EASY512-DC-R	8	2	Relay	4	LED	45K1321	318.39
● EASY512-DC-RC	8	2	Relay	4	LED	42M1823	334.16

**BASIC UNITS, 100-240VDC**

● EASY512-AC-R	8	0	Relay	4	LED	41M3161	286.84
● EASY512-AC-RC	8	0	Relay	4	LED	41M3162	345.16
● EASY512-AC-RCX	8	0	Relay	4	None	45K1320	264.12

**EXPANDABLE BASIC UNITS, 24VDC**

● EASY719-DC-RC	12	4	Relay	6	LED	41M3164	448.64
● EASY719-DC-RCX	12	4	Relay	6	None	45K1328	383.51
● EASY721-DC-TC	12	4	Transistor	8	LED	45K1329	414.06

**EXPANDABLE BASIC UNITS, 100-240VDC**

● EASY719-AC-RC	12	0	Relay	6	LED	41M3163	440.56
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**ACCESSORIES**

Mfg. Part No.	Description	Stock No.	Price Each
● EASYPCAB	2m, 9-Pin Interface Cable for Connecting to PC	41M3160	130.25
● EASY-M-32K	32k module for saving the entire easy program for EASY 500, EASY 700	51M8736	47.04

\* Number of inputs that can be user-assigned as analog inputs (0-10V). (34503)



**eQuotes**

Retrieve and process Newark quotes online from our website under MY ACCOUNT eSuite. Or email them to your Purchasing department. Log in or register today.

(148836)

CONTROLLERS – PLCS

PROGRAMMABLE NANO CONTROLLER

Just Added



- Compact, CPU and Expansion Units Measure 70W x 90H x 56mmD (2.76 x 3.54 x 2.20")
- 8 Timers Support 4 Types of Operation and 3 Timing Ranges Available
- 4 Holding Timers Hold Data During Power Interruptions
- 8 Counters Can Be Switched Between Incremental and Decremental
- 8 Weekly Timers for Day/Time Control
- 8 Calendar Timers for Seasonal Control
- 6 Input Relays, 4 Output Relays, Expandable up to 34 I/O (18 Inputs/16 Outputs)
- 16 Holding Bits Retain ON/OFF Status in Case of Power Failure; No Need for Extra Circuitry

CPU

Mfg. Part No.	Supply Voltage	I/O	Output Type	Stock No.	Price Each	
					1-4	
● ZEN-10C1AR-A-V2	100-240VAC	6 Input, 4 Output	Relay	14M9199	133.17	
● ZEN-10C1DR-D-V2	24VDC	6 Input, 4 Output	Relay	22M4073	133.17	
ZEN-10C1DT-D-V2	24VDC	6 Input, 4 Output	Transistor	40M9770	144.27	
● ZEN-10C2DR-DV2	24VDC	6 Input, 4 Output	Relay	17M9574	165.23	
ZEN-10C2DT-D	24VDC	6 Input, 4 Output	Transistor	07H4402	196.34	
ZEN-10C3AR-A-V2	240VAC	6 Input, 4 Output	Relay	40M9773	164.83	
ZEN-10C3DR-D-V2	24VDC	6 Input, 4 Output	Relay	40M9774	164.83	
ZEN-20C1AR-A-V2	240VAC	12 Input, 8 Output	Relay	40M9776	261.06	
ZEN-20C1DT-D-V2	24VDC	12 Input, 8 Output	Transistor	40M9777	261.06	
● ZEN-20C1DR-D-V2	24VDC	12 Input, 8 Output	Relay	17M9556	194.45	
ZEN-20C3AR-A-V2	240VAC	12 Input, 8 Output	Relay	40M9781	219.79	
ZEN-20C3DR-D-V2	24VDC	12 Input, 8 Output	Relay	40M9782	219.79	

EXPANSION I/O

ZEN-4EA	100-240VAC	4 Input	...	77C6003	61.73	
ZEN-4ED	24VDC	4 Input	...	77C6004	61.73	
ZEN-8E1AR	240VAC	4 Input, 4 Output	Relay	40M9783	109.18	
ZEN-8E1DR	24VDC	4 Input, 4 Output	Relay	31M0963	87.22	
ZEN-8E1DT	24VDC	4 Input, 4 Output	Transistor	40M9784	109.18	

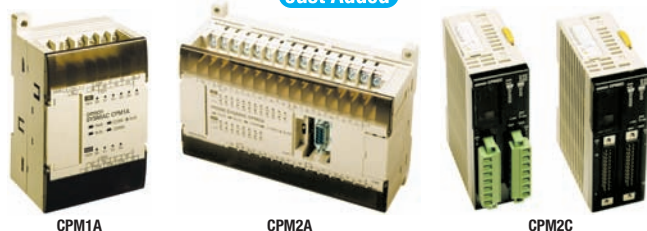
ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	
● ZEN-ME01	Memory Cassette, Copy Program to Multiple Units	77C5996	36.19	
● ZEN-CIF01	Connecting Cable	77C5995	92.74	
● ZEN-BAT01	Battery Unit, Memory Back-Up	77C5994	43.23	
● ZENSOF01V4	Support Software 4.1	63M9490	46.32	

MICRO PROGRAMMABLE CONTROLLER



Just Added



- Peripheral communications port built in (CPM1A)
- Peripheral and RS-232C ports standard for direct connection to serial devices and programming tools (CPM2A)
- Transistor output types expand to 192 I/O (CPU + 5 modules); Relay output types expand to 180 I/O (CPU + 5 modules) (CPM2C)
- Auxiliary 24 VDC supply (AC type only)

MICRO PROGRAMMABLE CONTROLLER (CONT.)

CPM1A SERIES

Mfg. Part No.	I/O	Output Type	Stock No.	Price Each
CPM1A-10CDR-A-V1	6 inputs, 4 outputs	Relay	49H4444	267.96
CPM1A-20CDR-A-V1	12 inputs, 8 outputs	Relay	97C6735	389.76

CPM2A SERIES

CPM2A-20CDR-A	12 inputs, 8 outputs	Relay	29C7138	700.11
CPM2A-30CDR-A	18 inputs, 12 outputs	Relay	10R5197	723.01
CPM2A-40CDR-A	24 inputs, 16 outputs	Relay	62H0378	1088.69
CPM2A-60CDR-A	36 inputs, 24 outputs	Relay	86H7597	1315.11

CPM2C SERIES

CPM2C-10C1DR-D	6 inputs, 4 outputs	Relay	10R5201	444.45
CPM2C-20C1DR-D	12 inputs, 8 outputs	Relay	02J8113	585.53

EXPANSION I/O MODULES

CPM1A-20EDR1	12 inputs, 8 outputs	Relay	83F6498	286.52
CPM1A-8ED	8 inputs	...	10R5195	194.28
CPM2C-10EDR	6 inputs, 4 outputs	Relay	02J7858	211.36
CPM2C-20EDR	12 inputs, 8 outputs	Relay	10R5202	292.72
CPM2C-8ER	8 outputs	Relay	10R5203	261.84
CPM1A-8ER	8 inputs	Relay	19C7873	226.52
CPM1A-MAD01	2 inputs, 1 output	Analog	19C7862	438.37
CPM2C-MAD11	Analog I/O module	...	10R5199	529.05
CPM2C-TS001	Temperature sensor input module	...	10R5200	342.71

ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Each	
			1-14	
W317-E1-10	CPM1A programmable controllers operation manual	10R5249	28.05	
W352-E1-06	CPM2A operation manual	10R5250	28.05	
W353-E1-06	CPM1/CPM1A/CPM2A/CPM2C programming manual	10R5251	28.05	
W356-E1-08	CPM2C programmable controller operation manual	10R5252	28.05	
CPM2C-BAT01	CPM2C Battery	10R5198	38.27	
CPM2C-MAD11	Analog I/O module	10R5199	529.05	
CPM2C-PA201	100 to 240 VAC input, 24VDC/600 mA output	09J8966	80.69	
CPM2C-TS001	Temperature sensor input module	10R5200	342.71	
CQM1-CIF02	C200HS-CN220-EU Program Download Cable C200H-CN320-EU Communication Cable	10R5204	405.44	
CS1W-CN226	CPU's peripheral port to computer (D-sub 9-pin)	12C0580	123.30	
WS02-CXPC2-V8	Software for Micro PLCs CP1, CPM, SRM1	01P1236	509.13	

(148685)

FP-X COMPACT BRICK PLC



Panasonic Electric Works Corporation of America

Features:

- High-speed scan of 0.32µs for basic instruction
- Program capacity of 32k steps, plus area for comments
- Up to 300 I/Os plus expansion cassettes
- Easy-to-use temperature control command
- NEWTOCOL master function
- Ethernet add-on cassette
- Trace function
- Program protection with an 8-digit password and a function prohibiting uploads
- Easy direct connection with a PC via a commercial USB cable

Specifications:

- Rated voltage: 100 to 240VAC; 24VDC
- Operating voltage range: 85 to 264VAC; 20.4 to 28.8VDC
- Rush current: 40A
- Allowed momentary power off time
- Ambient temperature: 0 to +55°C
- Storage temperature: -40 to +70°C
- Ambient humidity: 10 to 95% RH (at 25 °C, non-condensing)
- Storage humidity: 10 to 95% RH (at 25 °C, non-condensing)
- Conforming to EN61131-2



PROGRAMMABLE LOGIC CONTROLLERS

Mfg. Part No.	No. of Inputs	No. of Outputs	Output Type	Stock No.	Price Each	
					1-2	
● AFPX-C14PD	8	6	DC, PNP Transistor	08N3148	242.91	
● AFPX-C14TD	8	6	DC, NPN Transistor	08N3150	242.91	
● AFPX-C14T	8	6	AC, NPN Transistor	08N3149	242.91	
● AFPX-C14R	8	6	Relay	61K2441	145.32	
● AFPX-C30T	16	14	AC, NPN Transistor	08N3151	348.52	
● AFPX-C30R	16	14	Relay	73K7110	348.52	
● AFPX-C60T	32	28	AC, NPN Transistor	08N3152	596.70	
● AFPX-C60R	32	28	Relay	73K7111	559.74	

➤ CONTINUED ➤

CONTROLLERS – PLCs • DATA INTERFACE PORTS

**FP-X COMPACT BRICK PLC (CONT.)**

**ALL-IN-ONE UNIVERSAL PROGRAMMABLE LOGIC CONTROLLERS**

Mfg. Part No.	No. of Inputs	No. of Outputs	Output Type	Stock No.	Price Each
					1-2
● AFPE214325*	8	6	5 Tr. NPN out, 1 Relay out	45H3303	399.21
● AFPE224300	8	6	5 Tr. NPN Out, 1 Relay out	34H3649	243.96

**EXPANSION UNITS**

● AFPX-E16T	8	6	NPN Transistor	08N3154	158.42
● AFPX-E16R	8	6	Relay	73K7116	147.86
● AFPX-E30R	16	14	Relay	73K7117	300.99

**COMMUNICATION CASSETTES**

Mfg. Part No.	Description	Stock No.	Price Each
● AFPX-COM1	Communication cassette (RS232 1ch)	73K7106	52.81
● AFPX-COM2	Communication cassette (RS232 2ch)	73K7107	68.65
● AFPX-COM3	Communication cassette (RS422/485 1ch)	73K7108	105.61
● AFPX-COM4	Communication cassette (RS232 1ch + RS485 1ch)	73K7109	179.54
● AFPX-COM5	Communication cassette (ETHERNET 1ch + RS232 1ch)	08N3146	253.47
● AFPX-COM6	Communication cassette (RS485 2ch)	08N3147	304.30

**APPLICATION CASSETTES**

● AFPX-A21	Analog I/O cassette, 2 input (0-10V/0-20mA.) + 1 output(0-10V/0-20mA)	08N3145	190.10
● AFPX-AD2	Analog output cassette, 2 points (0-10V/0-20mA)	73K7104	116.18
● AFPX-DA2	Analog output cassette, 2 points (0-10V/0-20mA)	08N3153	190.10
● AFPX-IN4T3	I/O Cassette, 4 Input 24VDC, 3 transistor NPN output	08N3155	73.93
● AFPX-IN8	Input cassette (8 Point 24VDC)	73K7118	79.21
● AFPX-MRTC	Master memory cassette (32K steps program memory + real time clock)	73K7119	95.05
● AFPX-PLS	Pulse I/O cassette, HSC; (Single Phase 80Khz 2ch or 2 Phase 30Khz 1ch) + 1 Pulse Output 100Khz.	73K7120	174.26
● AFPX-TC2	Thermocouple Input cassette, K/J type, insulated 2ch	08N3156	190.10
● AFPX-TR6P	Output cassette (6 Point PNP Transistor)	08N3157	89.77
● AFPX-TR8	Output cassette (8 Point NPN Transistor)	73K7122	89.77

**SOFTWARE**

FPWINGRS-EN2	IEC1131 programming software, FPWINPRO version 5.0 - FPO/FP1/FPM/FPsigma/FPX	34C9695	266.14
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**CABLES**

Mfg. Part No.	Description	Stock No.	Price Each
AFC1520M-US9	Programming cable, 3m, Mini-Din 5-pin to DP 9-pin	34B9250	66.41

\* 6 DC, 2 Thermocouple inputs (115545)

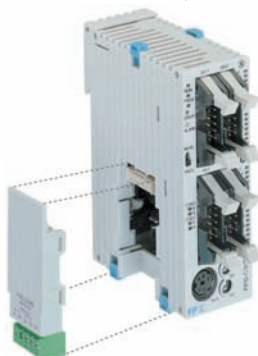
**FP SIGMA HIGH SPEED PLC'S**



Panasonic Electric Works Corporation of America

- High expansion capability with up to 384 I/Os
- Fastest processing time, 0.3usec/basic command
- Compact design (W 30 x H 90 x D 60mm)
- Short circuit protected transistor outputs
- Built-in analog volume with two points
- Backup battery

State-of-the-art PLC technology in the most compact size plus the ability to communicate via all important modern media characterize . With its two 100kHz pulse outputs, four hardware counters that function at up to 50kHz for positioning applications, a programming memory capable of storing 32,000 steps, a real-time clock, and communication interfaces for RS232 and RS485.



**CONTROL UNITS**

Mfg. Part No.	Description	Stock No.	Price Each
● FPG-C32T2H-A	32 points Transistor output type 16 inputs/16 output (NPN)	08N3124	480.53
● FPG-C24R2H-A	24 points Relay output type 16 inputs/8 output	08N3123	400.96

**EXPANSION UNITS**

● FPG-XY64D2T-A	64 points I/O Expansion unit 32 inputs/32 output (NPN)	08N3125	322.11
● FPG-PP11	1-axis positioning expansion unit transistor output (NPN)	96H2758	399.21
● FPG-PP21	2-axis positioning expansion unit transistor output (NPN)	96H2760	704.42

**COMMUNICATION CASSETTES**

● FPG-COM1-A	1-ch RS232C type	08N3120	52.81
● FPG-COM2-A	2-ch RS232C type	08N3121	68.65
● FPG-COM3-A	1-ch RS485 type	08N3122	95.05
● FPG-COM4-A	2-ch RS232C & RS485 type	51M6890	160.53

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**FP SIGMA HIGH SPEED PLC'S (CONT.)**

**ACCESSORIES**

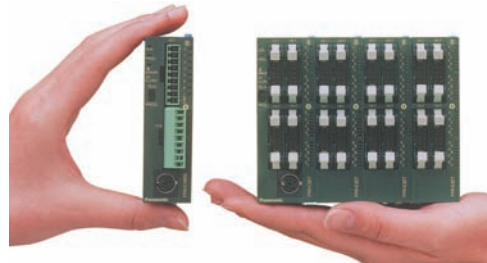
Mfg. Part No.	Description	Stock No.	Price Each
AFC1520M-US9	Programming cable, 3m, Mini-Din 5-pin to DP 9-pin	34B9250	66.41
FPWINGRS-EN2	PLC ladder programming software - FPO/FP1/FPM/FPsigma/FPX	34C9695	266.14

(115542)

**FPO MICRO PLC'S**



Panasonic Electric Works Corporation of America



- High expansion capability with up to 384 I/Os
- Fastest processing time, 0.3usec/basic command
- Compact design (W 30 x H 90 x D 60mm)

- Short circuit protected transistor outputs
- Built-in analog volume with two points
- Backup battery

A control unit is a mere 25mm in width. Even expanded to 128 I/O points, the width is still only 105mm. The attachment area is one of the smallest in its class. The control unit's dimensions are: W25" x H90 x D60mm. Also, the I/O unit can be expanded to a maximum of 128-points. Even so, the size is still only W105 x H90 x D60mm, a super compact design that breaks all previous common sense rules on small-scale PLCs. With the smallest ever attachment area, the FPO is perfect for installation in machines, facilities, and control boards where miniaturization is progressing even further. The expansion unit can easily be attached directly to the control unit. Special expansion cables, backplanes and so forth are unnecessary as the expansion unit employs a stacking system that uses expansion connectors and locking levers on the surface of the unit itself.

**CONTROL UNITS**

Mfg. Part No.	Description	Stock No.	Price Each
● FPO-C14RS-A	14 points Relay output type 8 inputs/8 output	29H2975	172.29
● FPO-C16T-A	16 points Transistor output type 8 inputs/8 output (NPN)	91F7542	195.15
● FPO-C32T-A	32 points Transistor output type 16 inputs/16 output (NPN)	91F7543	324.37
● FPO-T32CT-A	32 points Transistor type 16 inputs/16 output (NPN)	08N3135	361.38

**DIGITAL I/O UNITS**

● FPO-E16RS-A	32 points Relay output type 8 inputs/8 output	91F7545	167.71
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**ANALOG I/O UNITS**

● FPO-A04V	4 points, output 4 points	96H2764	346.92
● FPO-A80-A	4 points, output 4 points	29H4155	314.92

**AC POWER SUPPLY UNITS**

FPO-PSA2	32 points, terminal type, Input 85-265VAC, output, 24VDC, (0.7A)	03H3548	91.90
● FPO-PSA4	32 points, terminal type, Input 85-265VAC, output, 24VDC, (0.7A)	63K4198	86.73
FP-PS24-050E	32 points, terminal type, Input 85-265VAC, output, 24VDC, (2.1A)	96H2748	168.30

**ACCESSORIES**

AFC1520M-US9	Programming cable, 3m, Mini-Din 5-pin to DP 9-pin	34B9250	66.41
FPWINGRS-EN2	PLC ladder programming software - FPO/FP1/FPM/FPsigma/FPX	34C9695	266.14

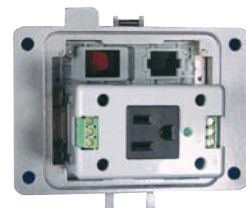
(115543)

**INSIDE-OUTLET® GFCI INTERFACE PORTS**

Just Added



Front



Back

▶ CONTINUED ▶



DATA INTERFACE PORTS • ENCODERS

INSIDE-OUTLET® GFCI INTERFACE PORTS (CONT.)

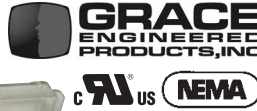
- UL recognized type 4 (gray) and 4X (black)
- Complies with NFPA 79 standard
- 120V / 20A GFCI receptacles on front
- Inside-Outlet® 15A receptacle on back
- TEST/RESET button on the front of the port
- Outgoing terminals for GFCI protected power
- Maintains enclosure rating
- Cast aluminum base housing w/ clear polycarbonate cover
- Thermoplastic elastomer gasket

Mfg. Part No.	Rating	Housing Color	Stock No.	Price Each		
				1-4	5-9	10+
H-RF0-K3	NEMA 4/12	Gray	44P3521	107.91	103.95	99.00
H-RF0-K2	UL Type 4X	Black	44P3520	162.41	156.45	149.00

(142129)

GRACEPORT® ALLEN-BRADLEY MICROLOGIX DATA INTERFACE PORTS

Just Added



- UL recognized Type 4 (gray)
- 120VAC / 15A single receptacle
- External port: 8-pin Mini-DIN jack to fit Micrologix
- Internal port: 10 ft. fully shielded, panel-mounted cable assembly w/ 8-pin Mini-DIN plug



Mfg. Part No.	Rating	Stock No.	Price Each		
			1-4	5-9	10+
P-A14-F3R0	NEMA 4/12	44P4415	163.50	157.50	150.00

(142130)

GRACEPORT® USB 2.0 DATA INTERFACE PORTS

Just Added



No Outlet



Simple Outlet

- UL recognized Type 4 (gray), rated NEMA 4 / 12
- Cast aluminum base housing w/ polycarbonate cover
- Thermoplastic elastomer gasket
- External port: USB type A receptacle
- Internal port: 10 ft. fully shielded, panel-mounted cable assembly w/ USB type A plug

Mfg. Part No.	Outlet Receptacle	No. of Ports	Stock No.	Price Each		
				1-4	5-9	10+
P-P11#2-B3RX	None	2	44P6704	207.10	199.50	190.00
P-P11#2-H3R0	Simple, 120VAC / 15A	2	46P9762	223.45	215.25	205.00

(142131)

GRACEPORT® SERIAL DATA INTERFACE PORTS

Just Added



- UL recognized Type 4 (gray), NEMA 4 / 12
- 120VAC simple receptacle
- 3A circuit breaker
- Cast alloy base housing w/ plastic cover
- NBR gasket
- External port: 9-pin D-Sub plug
- Internal port: 10 ft. fully shielded, panel-mounted cable assembly w/ 9-pin D-Sub receptacle



Mfg. Part No.	Rating	Stock No.	Price Each		
			1-4	5-9	10+
P-P1-H3R3	NEMA 4/12	44P6296	185.30	178.50	170.00

(142132)

GRACEPORT® CAT 5 ETHERNET DATA INTERFACE PORTS

Just Added



- UL recognized Type 4 (gray), NEMA 4 / 12
- 120VAC / 15A simple receptacle
- Cast alloy base housing w/ plastic cover
- NBR gasket
- External port: RJ45 jack
- Internal port: RJ45 jack

Mfg. Part No.	Rating	Stock No.	Price Each		
			1-4	5-9	10+
P-R2-F3R0	NEMA 4/12	44P8590	118.81	114.45	109.00

(142133)

GRACEPORT® CAT 5 ETHERNET DATA INTERFACE PORTS

Just Added



3A Circuit Breaker



No Circuit Breaker

- UL recognized type 4X (black)
- 120VAC / 20A duplex GFCI receptacle
- Cast alloy base housing w/ plastic cover

- NBR gasket
- External port: RJ45 jack
- Internal port: RJ45 jack

Mfg. Part No.	Rating	Circuit Breaker	No. of Ports	Housing Color	Stock No.	Price Each		
						1-4	5-9	10+
P-R2-K2RF3	UL Type 4X	3A	1	Black	44P8649	200.56	193.20	184.00
P-R2-K3RF0	NEMA 4/12	None	1	Gray	44P8662	135.16	130.20	124.00
P-R2-K3RF3	NEMA 4/12	3A	1	Gray	44P8668	151.51	145.95	139.00

(142134)

ES 9513 ROTARY CONTACTOR LENGTH (FEET) MEASURING SYSTEM



Electronic rotary contactor measures shaft revolutions at speeds to 2400 RPM at 1:1 ratio; 2400 counts per minute maximum. Use for lineal paper, veneer, textile, steel, and jute lineal measurement applications. **Mfg. part no. 41100** has reed switch rated .5 amps for output to electronic circuits. **Mfg. part no. 40891** has leaf switch rated 5 amps, 120-240V for output into electromechanical circuits. Measuring system comprises rotary contactor, mounting bracket, and wheel, each ordered separately.



Mfg. Part No.	Description	Stock No.	Price Each
			1-4
● 20154300	Rotary Contactor	88M3302	112.49
40460400	Mounting Bracket	87F6107	182.59
40891400	Rotary Contactor	83F7294	336.95

(2697)

Huge Expanded Selection of Semiconductors

Go online to find new technologies and proven solutions from world-class and specialist suppliers.

(148843)

**SERIES D MECHANICAL MEASURING (ft.) SYSTEM**



Lightweight counter for measuring soft, delicate fabric, paper, etc. at speeds up to 800 yards per minute. Measure in feet with maximum count of 99999. Wing nut reset. Oil-less maintenance-free bearings. System comprises rotary contactor, mounting bracket, and wheel.



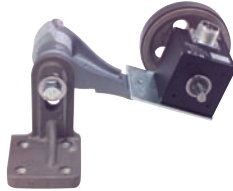
Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	
40187401	Clockwise	87F6142	431.50	
40187417	Counter clockwise	94F6992	431.50	
40460400	Bracket	87F6107	182.59	
20154300	Rubber-Rimmed Measuring Wheel	88M3302	112.49	

(31688)

**ELECTRONIC LENGTH MEASURING SYSTEM**



Mfg. part no. 38150-100 single channel encoder measures web speed, length or position when radial load doesn't exceed 20 lbs., and axial load doesn't exceed 10 lbs. Delivers 100 pulses per revolution. Shaft: 0.375" (9.53). Sealed against dust and oil. Mfg. part no. 38151-600 medium-duty quadrature encoder delivers 600 pulses per revolution and measures in 1/8" increments. Both systems operate on 5 to 28VDC. Measuring systems comprise encoder, wheel, connector with cable, and mounting bracket; each ordered separately.



Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	
38150100	Single Channel Encoder, 100PPR	87F6118	408.79	
38151600	Quadrature Encoder, 600PPR	89M5403	605.15	
20154301	12" (304.8) Rubber Rim Wheel	87F6104	93.72	
29665300	Connector & 10' Shielded Cable	87F6105	90.04	
40460402	Mounting Bracket	55M2240	168.96	

(2893)

**MINIATURE LENGTH SENSORS**

Just Added



- Supply Voltage: 4.75 to 28 VDC @ 100 mA max.
- Output: NPN Open Collector Transistor
- Max. Frequency: 200KHz
- High precision (Up to 2500) PPR
- Max. Mechanical Speed: 6000 RPM
- Compact Size
- Quadrature Output
- Built-in spring tensioning
- Vertical, Horizontal, or Upside-down mounting
- Various measuring wheels available



Designed for light to medium duty sensing applications, the Miniature Length Sensor, Model ZMD, is compact in size and easy-to-use. It features a built-in spring-loaded torsion arm that adjust torsion load, allowing the unit to be mounted in almost any orientation, including upside down. Using a 6" or 200 mm wheel, the ZMD can be used on almost any surface, while operating at speeds up to 3000 feet per minute. The housing is a durable, conductive composite material that will eliminate static build-up. Whether you need to measure speed, position, or distances, the Model ZMD is the ideal solution. For other pulse rates and/or wiring configurations, contact the factory for further details.

Mfg. Part No.	PPR	Stock No.	Price Break 1	
			Each	
ZMD0500B	500	19P7183	236.00	
ZMD1000B	1000	19P7184	261.00	
ZMD2000B	2000	19P7185	236.00	
ZMD2500B	2500	19P7186	236.00	

**ACCESSORIES**

Mfg. Part No.	Description	Stock No.	Price Each	
			Each	
RPGMB002	Mounting Bracket	19P7172	27.00	
W100060F	Urethane (6" Circumference) Wheel	35M4648	28.00	
W100060K	Knurled (6" Circumference) Wheel	35M4650	28.00	

(136327)

**0.25" SHAFT STANDARD SERVO MOUNT ROTARY PULSE GENERATORS**

Just Added



- Supply Voltage: 4.75 to 28 VDC @ 100 mA max.
- Output: NPN Open Collector Transistor
- Max. Frequency: 200KHz
- High precision (Up to 2500) PPR
- Max. Mechanical Speed: 8000 RPM
- Low Cost
- Miniature size



▶ CONTINUED ▶

**0.25" SHAFT STANDARD SERVO MOUNT ROTARY PULSE GENERATORS (CONT.)**

The Model ZSD encoder is ideal for applications requiring a miniature, high precision, low cost encoder, designed with all metal construction for years of trouble-free operation. The NPN Open Collector outputs are each current limited to 20 mA. The outputs are standard quadrature with index, available in resolutions up to 2500 pulses per shaft revolution. The quadrature separation is typically 90 electrical degrees. Output A leads output B for clockwise rotation of the encoder shaft.

Mfg. Part No.	PPR	Stock No.	Price Each	
			Each	
ZSD0500A	500	19P7203	210.00	
ZSD1000A	1000	19P7204	210.00	
ZSD2000A	2000	19P7205	217.00	
ZSD2500A	2500	19P7206	217.00	

**ACCESSORIES**

Mfg. Part No.	Description	Stock No.	Price Each	
			Each	
RPGFC001	Flexible Coupling (1" Length) 0.25" - 0.25"	19P7165	35.00	
RPGFC002	Flexible Coupling (1" Length) 0.25" - 0.375"	19P7166	35.00	
RPGFC005	Flexible Coupling (1" Length) 0.25" - 6 mm	19P7169	35.00	

(136324)

**ZBH SERIES STANDARD DUTY ENCODERS**

Just Added



- Current Sink Outputs
- High Pulse Per Revolution (PPR) Rates Up to 1200 PPR
- Quadrature Output
- Available with MS and M12 Connectors
- Shaft Speed: 600 RPM
- Supply Voltage: 5 to 28 VDC @ 80 mA max.



The units contain an L.E.D. light source and a photo sensor that scans a shaft-mounted, slotted disc. An internal pulse-shaping amplifier circuit delivers a rectangular pulse signal from the current sinking output in response to the passing slots as it rotates. They can be direct-coupled to a machine shaft by means of a flexible-bellows, spring, or rubber sleeve type coupling that allows for axial and radial misalignment. They can also be coupled with light instrument timing-belts. Timing-belt drives also allow convenient gear-up or gear-down speed ratio changes that can be useful for obtaining non-standard PPR rates.

Mfg. Part No.	PPR	Stock No.	Price Each	
			Each	
ZBH0100Z	100	19P7175	267.00	
ZBH0500Z	500	19P7176	275.00	
ZBH1000Z	1000	19P7177	350.00	
ZBH2500Z	2500	19P7178	350.00	

**ACCESSORIES**

Mfg. Part No.	Description	Stock No.	Price Each	
			Each	
CCARPG00	Mating 6-Pin MS Connector	19P7150	21.00	
CCARPG01	10ft. 6-Pin 4-wire Cable/Connector	46M3690	42.00	
RPGFC002	Flexible Coupling (1" Length) 0.25" - 0.375"	19P7166	35.00	
RPGFC003	Flexible Coupling (1" Length) 0.375" - 0.375"	19P7167	35.00	
RPGFC004	Flexible Coupling (1" Length) 0.375" - 0.5"	19P7168	40.00	
RPGFC006	Flexible Coupling (1" Length) 0.375" - 6 mm	19P7170	35.00	

(136322)

**THRU-BORE ROTARY PULSE GENERATORS**

Just Added



- Supply Voltage: 4.75 to 28 VDC @ 100 mA max.
- Output: NPN Open Collector Transistor
- Max. Frequency: 200KHz
- High precision (Up to 2500) PPR
- Max. Mechanical Speed: 8000 RPM
- Flexible Butterfly Mounting
- Current Limited Outputs



The Model ZOD and ZOH are Thru-Bore Encoders. The ZOD has a bore of 0.25" (6.35 mm) and the ZOH is a 0.375" (9.5 mm) bore. These units are ideal for applications requiring a miniature, high precision, low cost encoder, designed with all metal construction for years of trouble-free operation. The encoders have a flexible butterfly mount and blind hollow shaft. These encoders use two set screws that are 90° apart to clamp the encoder's hub to the motor shaft. The NPN Open Collector outputs are each current limited to 100 mA. The outputs are standard quadrature with index, and are available in resolutions up to 2500 pulses per shaft revolution. The quadrature separation is typically 90 electrical degrees. Output A leads output B for clockwise rotation of the encoder shaft.

**ZOD SERIES 0.25" THRU-BORE ENCODERS**

Mfg. Part No.	PPR	Stock No.	Price Each	
			Each	
ZOD0500A	500	19P7191	210.00	
ZOD1000A	1000	19P7192	210.00	

▶ CONTINUED ▶



ENCODERS

THRU-BORE ROTARY PULSE GENERATORS (CONT.)

Mfg. Part No.	PPR	Stock No.	Price Each	
			Each	
● Z0D2000A	2000	19P7193	217.00	
● Z0D2500A	2500	19P7194	217.00	

ZOH SERIES 0.375" THRU-BORE ENCODERS

● Z0H0500A	500	19P7195	210.00	
● Z0H1000A	1000	19P7196	210.00	
● Z0H2000A	2000	19P7197	217.00	
● Z0H2500A	2500	19P7198	217.00	

(136325)

LARGE THRU-BORE ROTARY PULSE GENERATORS

Just Added



- Supply Voltage: 4.75 to 28 VDC @ 100 mA max.
- Output: NPN Open Collector Transistor
- Max. Frequency: 200KHz
- High precision (Up to 2500) PPR
- Max. Mechanical Speed: 7500 RPM
- Direct Shaft Mount
- Optical Bore rings allow standard and metric shaft sizes
- Standard bore is 0.625" (15.875 mm)



The Model ZPJ is a thru-bore encoder with a bore of 0.625" (15.875 mm). Additional mounting kits are available to adapt it to both standard and metric shaft sizes. This unit is ideal for applications requiring a miniature, high precision, low cost encoder, designed with all metal construction for years of trouble-free operation. The ZPJ encoder has a flexible arm mount and blind hollow shaft. It uses two set screws that are 90° apart to clamp the encoder's hub to the motor shaft. The NPN Open Collector outputs are each current limited to 20 mA. The outputs are standard quadrature with index, and are available in resolutions up to 2500 pulses per shaft revolution. The quadrature separation is typically 90 electrical degrees. Output A leads output B for clockwise rotation of the encoder shaft.

Mfg. Part No.	PPR	Stock No.	Price Each	
			Each	
● ZPJ0500A	500	19P7199	292.00	
● ZPJ1000A	1000	19P7200	292.00	
● ZPJ2000A	2000	19P7201	299.00	
● ZPJ2500A	2500	19P7202	299.00	

ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Break 1	
			Each	
● RPKM000	1.575" (40 mm) Bolt Circle Flex Mount Kit	19P7173	28.00	
● RPKM001	1.811" (46 mm) Bolt Circle Flex Mount Kit	19P7174	28.00	
● RPB0101	Inch Std Bore Insert Kit (includes 0.25, 0.375, and 0.5" sleeves)	19P7153	35.00	
● RPB0101	Large Metric Bore Insert Kit (includes 11, 12, and 14 mm sleeves)	19P7154	35.00	
● RPB0102	Small Metric Bore Insert Kit (includes 6, 8, and 10 mm sleeves)	19P7155	35.00	
● RPB0101	Mag Coupling Kit	19P7171	125.00	

(136326)

2" AND 2.5" FLANGE MOUNT ROTARY PULSE GENERATOR

- Supply Voltage: 4.75 to 28 VDC @ 100 mA max.
- Output: NPN Open Collector Transistor
- Max. Frequency: Up to 1 MHz
- Max. Mechanical Speed: 8000 RPM
- Up to 250 PPR
- NEMA 4, 13 and IP65 standards



Just Added

The ZDH and ZNH series of sensors are heavy duty, extremely rugged, reliable, yet compact encoders designed for harsh factory and plant floor environments. Both models are flange mount. Typical applications include motion control feedback, machine control, process control, elevator controls, conveyors, textile equipment, robotics and food processing. The ZDH and ZNH series of sensors have open collector outputs. An open collector output brings the uncommitted collector of the encoder switching device to the external world. Because the collector element is not associated with the sensor supply voltage, the sensor output collector may be "pulled up" to external voltages different than the encoder supply voltage (40 VDC maximum). NPN open collector outputs are current sinking devices. An output signal will not be generated unless a pull-up resistor is connected from the open collector to the positive side of an external supply. The same supply can be used for powering the unit and for the pull-up resistor.

2" FLANGE MOUNT

Mfg. Part No.	PPR	Shaft Diameter (mm)	Stock No.	Price Break 1	
				Each	
● ZDH0500H	500	6.3	19P7179	350.00	
● ZDH1000H	1000	6.3	19P7180	350.00	
● ZDH2000H	2000	6.3	19P7181	381.00	
● ZDH2500H	2500	6.3	19P7182	381.00	

2.5" FLANGE MOUNT

● ZNH0500H	500	9.5	19P7187	340.00	
● ZNH1000H	1000	9.5	19P7188	340.00	

▶ CONTINUED ▶

2" AND 2.5" FLANGE MOUNT ROTARY PULSE GENERATOR (CONT.)

2.5" FLANGE MOUNT

Mfg. Part No.	PPR	Shaft Diameter (mm)	Stock No.	Price Break 1	
				Each	
● ZNH2000H	2000	9.5	19P7189	371.00	
● ZNH2500H	2500	9.5	19P7190	371.00	

ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Each	
			Each	
● CCBP000	7-Pin Connector	19P7151	36.00	
● CCBP002	10ft. 7-Pin 6-wire Cable/Connector	19P7152	47.00	
● RPKFC002	Flexible Coupling (1" Length) 0.25" - 0.375"	19P7166	35.00	
● RPKFC003	Flexible Coupling (1" Length) 0.375" - 0.375"	19P7167	35.00	
● RPKFC004	Flexible Coupling (1" Length) 0.375" - 0.5"	19P7168	40.00	
● RPKFC006	Flexible Coupling (1" Length) 0.375" - 6 mm	19P7170	35.00	

(136323)

ENCODER ACCESSORIES

Just Added



Bore Sleeve



Flexible Coupling

ENCODER BORE SLEEVES

Mfg. Part No.	Description	Stock No.	Price Break 1	
			Each	
● RPB0100	0.5" Bore Sleeve	19P7160	28.00	
● RPB0101	0.625" Bore Sleeve	19P7161	28.00	
● RPB0102	0.750" Bore Sleeve	19P7162	28.00	
● RPB0103	0.875" Bore Sleeve	19P7163	28.00	
● RPB0104	1" Bore Sleeve	19P7164	28.00	
● RPB0100	19 mm Bore Sleeve	19P7156	28.00	
● RPB0101	20 mm Bore Sleeve	19P7157	28.00	
● RPB0102	24 mm Bore Sleeve	19P7158	28.00	
● RPB0103	25 mm Bore Sleeve	19P7159	28.00	

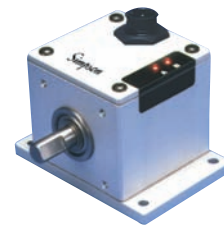
FLEXIBLE COUPLINGS

● RPKFC001	Flexible Coupling (1" Length) 0.25" - 0.25"	19P7165	35.00	
● RPKFC002	Flexible Coupling (1" Length) 0.25" - 0.375"	19P7166	35.00	
● RPKFC003	Flexible Coupling (1" Length) 0.375" - 0.375"	19P7167	35.00	
● RPKFC004	Flexible Coupling (1" Length) 0.375" - 0.5"	19P7168	40.00	
● RPKFC005	Flexible Coupling (1" Length) 0.25" - 6 mm	19P7169	35.00	
● RPKFC006	Flexible Coupling (1" Length) 0.375" - 6 mm	19P7170	35.00	

(136509)

OPTICAL ENCODERS

SE series encoders combine the most popular features into one economical, easy-to-order encoder package. The cube-style, quadrature encoder offers dual 3/8" flat keyed shafts and 2 LEDs that flash as the shaft is turned, to aid in troubleshooting.



Mfg. Part No.	P.P.R.	Stock No.	Price Each
SE-060	60	83F7538	155.14
SE-100	100	83F7539	155.14
SE-120	120	83F7540	155.14
SE-360	360	83F7541	155.14
SE-600	600	83F7542	155.14

(33378)

ENCODERS • I/O CONTROLLERS & MODULES

**LINEAR MEASURING COUNTERS AND ACCESSORIES**

Series 1953 is suited for linear measurement of feet, yards, or meters. Double-ended shaft allows use of 2 accessory measuring wheels for extra contact with measured material. Used in textile, wire and cable, paper, rope, and sheet products industries. Heavy-duty, die-cast housing, stainless steel shafts. Speed: 1500 rpm or 5000 CPM, whichever is limiting. Order wheels for counters separately below.



**KNOB-RESET, 6-DIGIT COUNTERS**

Mfg. Part No.	Description	Stock No.	Price Each
			1-5
0195316-051	1:1 Ratio	97F1023	406.66
0195316-052	3:1 Ratio	01B3379	406.66

**ACCESSORIES**

Mfg. Part No.	Description	Stock No.	Price Each
15537-070	Rubber Wheel, 1/2"W, 1' Circumference	81F2995	98.63
407186-009	Rubber Wheel, 1/2"W, 1/3 Meter Circumference	01B3611	213.46

(52172)

**DISTRIBUTED I/O MODULES ADAM-4000**



**ADVANTECH**  
eAutomation



- Power Input: 10 - 30 VDC



Mfg. Part No.	Description	Stock No.	Price Each
● ADAM-4012-DE	1-ch Analog Input Module	47M1635	180.00
● ADAM-4013-DE	1-ch RTD Input Module	47M1636	170.00
● ADAM-4015-BE	6-ch RTD Module w/Modbus	34M1811	345.00
● ADAM-4017+-BE	8-ch Analog Input Module w/Modbus	53M3095	270.00
● ADAM-4018+-BE	8-ch Thermocouple Input Module w/Modbus	59M8600	285.00
● ADAM-4019+-AE	8-ch Universal Analog Input Module w/Modbus	59M8602	350.00
● ADAM-4021-DE	1-ch Analog Output Module	47M1643	180.00
● ADAM-4024-B1E	4-ch Analog Output Module w/ Modbus	59M8605	275.00
● ADAM-4050-DE	15-ch Digital I/O Module	20M4516	110.00
● ADAM-4051-BE	16-ch Isolated Digital Input Module w/Modbus	47M1645	140.00
● ADAM-4052-BE	8-ch Isolated Digital Input Module	47M1647	110.00
● ADAM-4053-AE	16-ch Digital Input Module	47M1648	125.00
● ADAM-4055-BE	16-ch Isolated Digital I/O Module w/Modbus	47M1649	140.00
● ADAM-4060-DE	4-ch Relay Output Module	47M1655	135.00
● ADAM-4068-BE	8-ch Relay Output Module w/Modbus	47M1656	165.00
● ADAM-4069-AE	8-ch Power Relay Output Module w/Modbus	47M1659	210.00
● ADAM-4080-DE	2-ch Counter/Frequency Module	47M1660	180.00
● ADAM-4117-AE	Robust 8-ch Analog Input Module w/Modbus	47M1662	295.00

(115437)

**DIGITAL I/O MODULES**



**ADVANTECH**  
eAutomation



ADAM-6060

Wireless

ADAM-6066-A

➤ CONTINUED ➤

**DIGITAL I/O MODULES (CONT.)**

Mfg. Part No.	Digital Inputs	No. of Outputs	Input Type	Output Type	Contact Rating*	Stock No.	Price Each
● ADAM-6060-BE	6	6	Logic	Relay	120VAC at 0.5A 30VDC at 1A	53M6172	210.00
● ADAM-6060W-AE	6	6	Logic	Relay	120VAC at 0.5A 30VDC at 1A	59M8634	385.00
ADAM-6066-BE	6	6	Digital	Power Relay	250VAC at 5A 30VDC at 5A	52M8773	225.00

\*Relay output (Form A)  
(89555)

**THERMOCOUPLE AND RTD I/O MODULES**



**ADVANTECH**  
eAutomation



ADAM-6015-A

ADAM-6018-A

Mfg. part no. **ADAM-6015A** is a 7-channel RTD input module. Accuracy ± 0.05% or better. 16-bit resolution. PT-1000 RTD: 7 temperature ranges from -200°C to +400°C, IEC RTD 100Ω = 0.00385, JIS RTD 100Ω = 0.00392, PT 1000 RTD: -40°C to +160°C. Balco 500 RTD: -30°C to +120°C, Ni 518: -80°C to +100°C.

Mfg. part no. **ADAM-6018-A** is an 8-channel thermocouple input with digital output module. Accuracy: ± 0.1% or better. 16-bit resolution. Temperature ranges: J: 0°C - 760°C, K: 0°C - 1370°C, T: -100°C - 400°C, E: 0°C - 1000°C, R: 500°C - 1750°C, S: 500°C - 1750°C, B: 500°C - 1800°C

Mfg. Part No.	Analog Inputs	Digital Outputs	Input Type	Output Type	Stock No.	Price Each
ADAM-6015-A	7 Differential	...	Pt, Balco and Ni RTD	...	14M7145	375.00
● ADAM-6015-BE	7 Differential	...	Pt, Balco and Ni RTD	...	59M8629	375.00
● ADAM-6018-BE	0 Differential	8	Thermocouple	Open Collector	53M5903	450.00

(89553)

**ANALOG I/O MODULES**



**ADVANTECH**  
eAutomation



ADAM-6017-A

ADAM-6024-AE

Mfg. Part No.	Analog Inputs	Analog Outputs	Digital Inputs	Digital Outputs	Stock No.	Price Each
● ADAM-6017-BE	8 Differential mA, VDC	...	...	2 Open Collector	46M4730	315.00
ADAM-6024-AE	6 Differential, mA, VDC	2, mA, VDC	2 Logic	2 Open Collector	33M8092	480.00

(89554)

**DIGITAL I/O MODULES WITH COUNTER**



**ADVANTECH**  
eAutomation



ADAM-6050-A

ADAM-6051-A

➤ CONTINUED ➤

I/O CONTROLLERS & MODULES

DIGITAL I/O MODULES WITH COUNTER (CONT.)



ADAM-6052-A

Wireless

Mfg. Part No.	Digital Inputs	Digital Outputs	No. of Counters	Max. Count (kHz)	Stock No.	Price Each
● ADAM-6050-BE	12 Logic	6 Open Collector	...	3	42M9947	195.00
● ADAM-6050W-AE	12 Logic	6 Open Collector	...	3	59M8630	370.00
● ADAM-6051-BE	12 Logic	2 Open Collector	2	3	55M4832	195.00
● ADAM-6051W-AE	12 Logic	2 Open Collector	2	3	59M8631	370.00
● ADAM-6052-AE	8 Logic	8, A, VDC	...	5	59M8632	210.00
● ADAM-6052-BE	8 Logic	8, A, VDC	...	5	59M8633	210.00

(89556)

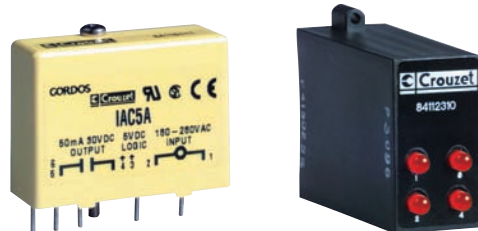
USB PORTS - DISTRIBUTED I/O MODULES



Mfg. Part No.	Description	Stock No.	Price Each
● USB-4711A-AE	150kS/s, 12-bit Multifunction USB Module	71M0947	545.00
● USB-4716-AE	200 kS/s, 16-bit, 16-ch Multifunction USB Module	05N1253	630.00
● USB-4718-AE	8-ch Thermocouple Input USB Module with 8-ch Isolated DI	05N1254	325.00
● USB-4750-AE	32-ch Isolated Digital I/O USB Module	51M2750	245.00
● USB-4751-AE	48-CH TTL Digital I/O Module	05N1255	155.00
● USB-4751L-AE	24-CH TTL Digital I/O Module	05N1256	135.00
● USB-4761-AE	8-ch Relay & 8-ch Isolated Digital USB Module	51M2426	275.00

(115439)

I/O MODULES



Standard I/O

Quad I/O

SMT construction for high reliability. 4kV optical isolation. Quad pack modules denoted with suffix "Q"; all others single point modules. Suffix "N" denotes modules with noise immunity per NEMA ICS2-230. "M" prefix denotes miniature modules for M series mounting boards. Prefix "SM" denotes miniature modules which plug into standard or

▶ CONTINUED ▶

I/O MODULES (CONT.)

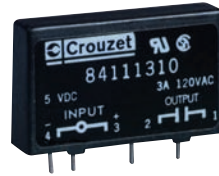
sub-miniature mounting boards and offer nylon retaining pin for fast, secure installation. Both "M" and "SM" series are 33% thinner than standard I/O modules and feature open collector output. Suffix "F" denotes fast switching modules 47-63Hz. UL recognized and CE compliant.

INPUT MODULES

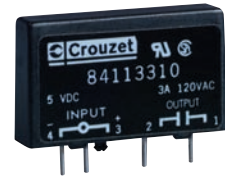
Mfg. Part No.	Input	Voltage	DC Logic	Stock No.	Price Each	
					1-24	25-49
● IAC5	AC/DC	90-140	5	17M6714	15.51	14.07
● IAC5A	AC/DC	180-280	5	21F866	17.61	15.70
● IAC24	AC/DC	90-140	24	17M6713	13.12	12.52
IAC5Q	AC/DC	90-140	5	46F4207	61.34	60.12
● IDC5	DC	3.3-32	5	17M6715	14.74	13.35
● IDC5F	DC	3.3-30	5	18M2180	19.02	17.46
● IDC5N	AC/DC	10-60	5	17M6716	19.02	17.46
● IDC15	DC	3.3-32	15	21F859	19.02	17.46
● IDC24	DC	3.3-32	24	18M2179	13.11	12.53
IAC5Q	AC/DC	10-48	5	46F4209	51.29	49.75
● MIAC5	AC/DC	90-140	5	17M6723	14.60	13.35
● SMIAc5	AC/DC	90-140	5	17M8208	14.62	13.33
● MIDC-5	DC	10-36	6	52F182	11.28	10.75
● SMIDC5	DC	3.3-32	5	17M8209	14.97	13.89

(3680)

M/SM SERIES INPUT/OUTPUT MODULES



M Series



SM Series

INPUT/OUTPUT MODULES

Mfg. Part No.	DC Input Voltage	Output Voltage	Amps	Stock No.	Price Each	
					1-24	25-49
● OAC5	5	12-140VAC	3.5	17M7503	16.61	14.53
● OAC5Q	5	12-140VAC	3.5	46F4208	50.18	48.68
● OAC5A	5	24-280VAC	3.5	17M7504	15.94	14.09
● OAC5AH	5	24-280VAC	5	17M7505	17.95	16.49
● OAC-15	18.5	12-140V	3	03M5736	14.03	13.40
● OAC24	24	12-140VAC	3.5	17M7501	20.99	18.52
● OAC24A	24	24-280VAC	3.5	17M7502	16.00	14.61
● ODC5	5	3-60VDC	3	18M9273	15.13	13.70
● ODC5F	5	3-60VDC	3	17M7508	20.97	19.26
● ODC5Q	5	3-60VDC	3	46F4210	52.86	51.27
● ODC5Q-11	5	3-60VDC	3	93F3630	64.67	59.39
● ODC5A	5	3-250VDC	1	83F7770	18.63	17.07
● ODC15	15	3-60VDC	3	21F862	18.03	16.65
● ODC24	24	3-60VDC	3	17M7507	18.26	16.75
● ODC-24A	30.5	5-200V	1	03M5738	16.41	15.68
● MOAC5	5	12-140VAC	3.5	50F9550	16.96	15.05
● MOAC5A	5	24-280VAC	3.5	18M9244	13.40	12.95
● MDC5	5	3-60VDC	3	17M6730	14.77	13.51
● MDC5A	5	5-200VDC	1	50F9554	13.24	12.61
● SMOAC5	5	12-140VAC	3.5	18M9331	16.34	14.39
● SMOAC5A	5	24-280VAC	3.5	17M8210	15.09	13.80
● SMDC5	5	3-60VDC	3	17M8211	15.28	13.35

(3681)

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(148886)



**"NEW GENERATION"  
DIN RAIL MOUNTABLE  
OUTPUT MODULES**



DIN rail series I/O modules offer a packaging approach addressing installation and space-saving needs. DIN rail mountable (17.5mm wide) modules snap into place with an integral spring element which is part of the I/O assembly. Electrical connections made by wiring directly via a screw-clamp terminal design, conforming them to a "Touch Safe" IP-20 standard. Module includes LED indication, and output modules feature a quick and easy-to-change fuse (5A-Littelfuse Type 2290035). All units can also be configured for direct panel mounting. Input voltage is 4-32VDC. UL recognized and CE compliant. Dimensions mm (in.)



**OUTPUT MODULES**

Mfg. Part No.	Output Voltage	Max. Output Current (A)	Stock No.	Price Each	
				1-14	15-24
● 84130104	5-60VDC	3	16F6315	35.08	32.05
● 84130105	12-280VAC	5	18M9802	36.32	33.18

**INPUT MODULES**

● 84115501	4.5-30VDC	50mA	17M8467	32.25	29.45
● 84115503	4.5-30VDC	50mA	17M8468	37.06	33.89

(3761)

**DR SERIES  
SINGLE POINT  
I/O MODULES**



DR Series I/O modules offer a packaging approach that addresses installation and space saving needs. I/O modules snap into place with an integral spring element which is part of the I/O assembly. Electrical connections are made by wiring directly to color code and numbered terminal blocks designed to accept 28 to 14AWG wire. I/O modules include LED indicator, and output modules contain a replaceable 5A fuse. Mounting holes provided for panel-mount applications. I/Os available with 5 or 24VDC logic voltages. AC and DC outputs are suitable for most load requirements up to 5A.



**INPUT MODULES, MAX. OUTPUT CURRENT 16mA**

Mfg. Part No.	Input Voltage	Output Voltage	Stock No.	Price Each	
				1-24	25-49
● DR-IAC5E	18-36V	3-6VDC	17M6580	34.89	32.03
● DRIAC5	90-140V	3-6VDC	17M6586	28.88	26.84
● DR-IAC5A	180-280V	3-6VDC	17M6579	30.43	27.95
● DR-IAC24	90-140V	20-30VDC	17M6577	30.43	27.95
● DR-IAC24A	140-280V	20-30VDC	17M6578	31.43	28.86
● DR-IDC5	3.3-32VDC	3-6VDC	17M6582	20.83	20.17
● DR-IDC5A	10-48VDC	3-6VDC	17M6583	30.43	27.95
● DR-IDC24	4-32VDC	20-30VDC	17M6581	30.43	27.95
● DR-IDC24A	10-48VDC	20-30VDC	96F1871	31.43	28.86

**OUTPUT MODULES, MAX. OUTPUT CURRENT 3mA**

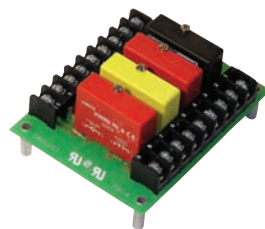
● DR-OAC	3.7-32VDC	12-280VAC	20M7007	23.93	23.21
● DR-ODC5	3.5-8VDC	3-60VDC	17M6585	22.78	22.07
● DR-ODC24	18-32VDC	3-60VDC	17M6584	35.70	32.78

(3668)

**DIGITAL I/O  
MODULE  
MOUNTING  
BOARDS**



Accept input and output modules interchangeably. Plug-compatible connections on 8, 16, 24, and 32-position boards; screw terminal block on 4-position board. Screw terminal barrier block for load connections. Resident pull-up resistors. 5-amp replaceable fuses. LEDs indicate logic status. UL recognized, CSA certified boards indicated with (\*). "SM" suffix denotes boards with pin-retaining system for SM series modules. Single-point boards also compatible with SM series units. PB4R accepts output modules only.



PB-4 & PB-4R

**MOUNTING BOARDS FOR SINGLE-POINT AND SM MODULES**

▶ CONTINUED ▶

**DIGITAL I/O MODULE MOUNTING BOARDS (CONT.)**

Mfg. Part No.	Positions	Stock No.	Price Each	
			1-5	6-14
● PB-4*	4	21F854	45.68	43.57
● PB4R*	4	98F820	46.92	41.06
● PB-8*	8	21F855	89.20	85.09
PB-16	16	21F856	157.47	141.09
PB16T*	16	94F4618	116.76	111.39
PB-24*	24	21F857	161.23	153.81
PB-24SM	24	98F1900	148.13	143.69

**MOUNTING BOARDS FOR QUAD-PACK MODULES**

PB32Q*	32	46F4212	191.50	185.77
PB-32HQ	32	83F7765	289.19	272.01
PB24Q*	24	46F3695	151.87	147.32

(3682)

**C4 MOUNTING BOARDS**



The mounting boards will accept either input or output modules. UL recognized and CSA certified.

Mfg. Part No.	Positions	Stock No.	Price Each	
			1-14	15-24
PB-4C4	4	92F3517	58.65	
PB-8C4	8	92F3518	83.58	
PB-16C4	16	92F3519	95.86	
PB-24C4	24	92F3520	211.28	

(3667)

**BUFFERED  
OUTPUT MODULES**



Contain additional internal amplification to reduce drive requirements to a level suitable for the MOS devices used in many microprocessor systems. Modules shown are non-inverting, inverting also available go online or call.



Mfg. Part No.	Output	Control Voltage (VDC)	Output Voltage (V)	Load Current (A)	Stock No.	Price Each		
						1-24	25-49	50-99
● 6311	DC	0-0.8	3-60	0.02-3.5	62F812	22.92	21.88	20.97
● 6321	DC	2.4-6	3-60	0.02-3.5	03M5796	23.46	22.40	21.47
● 6411	AC	0-0.8	12-140	0.02-3.5	03M5797	21.19	20.23	19.39
● 6412	AC	0-0.8	24-280	0.02-3.5	62F815	23.59	22.52	21.58
● 6421	AC	2.4-6	12-140	0.02-3.5	03M5798	20.95	20.00	19.16
● 6401A	AC	3-6	120	3	62F810	14.66	14.00	13.42

(3703)

**I/O MODULES**



High-performance microprocessor interface switches feature a hard, skin-tight epoxy conformal coating that provides environmental protection and retains fast heat transfer. 5V logic system. Fit MS series mounting boards; go online or call. UL recognized; CSA certified.



Mfg. Part No.	Input/Output	Control Voltage (VDC)	Output Voltage	Load Current	Stock No.	Price Each		
						1-24	25-49	50-99
● DMP6101A	DC Input	10-36	.04-30VDC	0.1-100mA	44F6543	13.50	12.89	12.35
● DMP6301A	DC Output	3-6	3-60VDC	.02-3.0A	44F6545	14.12	13.42	12.87
● DMP6402A	AC Output	3-6	24-280VAC	.02-3.0A	03M5704	14.84	14.17	13.58

(3706)

I/O CONTROLLERS & MODULES

MINI-PACK INPUT/ OUTPUT MODULES



Screw terminal versions of these mini-pack input/output modules are also available, add (S) prefix to the mfg part no. Input and output specifications are the same for both types. Input modules and other voltages available; go online or call. UL recognized, CSA certified, CE compliant.

AC CONTROL VOLTAGE

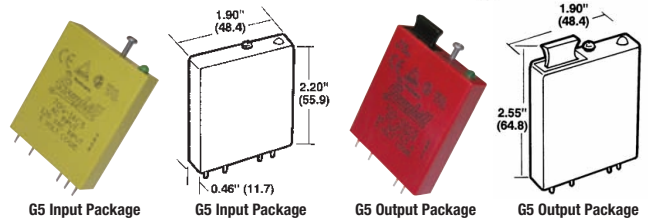
Mfg. Part No.	Input/Output	Control Voltage (V <sub>rms</sub> )	Output Voltage (V <sub>rms</sub> )	Load Current (A <sub>rms</sub> )	Stock No.	Price Each		
						1-9	10-24	25-49
● MIAC24	AC Input	90-140	24	0.05	52F181	12.16	11.58	11.21

DC CONTROL VOLTAGE

Mfg. Part No.	Input/Output	Control Voltage (V <sub>dc</sub> )	Output Voltage (V <sub>rms</sub> )	Load Current (A <sub>rms</sub> )	Stock No.	Price Each		
						1-24	25-49	50-99
● MODC5*	DC Output	2.5-7.5	24	3	03M5735	11.29	10.76	10.29
● MOAC5*	AC Output	3-8	120	3	03M5734	11.28	10.76	10.27

\*Not SEV approved (3719)

70G AND 73G ANALOG AND DIGITAL I/O MODULES (G5 SIZE)



73G series single-point G5 analog I/O modules can be mixed with 70G digital I/O modules on any of the 70G mounting racks. Connect a System 50 MicroDAC, MicroLon, or DacNet controller and create a PC-based data acquisition or control system. Analog inputs (blue) convert incoming voltage, current, or temperature signals into a frequency which varies linearly from 14.4kHz to 72kHz. Analog outputs (orange) accept a data stream and set the output level accordingly. All models feature 2500V optical isolation from input to output and 2500V transformer isolation to the power supply. Full scale accuracy ranges from 0.1% to 0.3%. Modules are powered by a single 5VDC supply.

ANALOG INPUT/OUTPUT

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	5-9
73G-IV1	0 to 1VDC, Input	95F9784	257.19	209.14
73G-IV5	0 to 5VDC, Input	95F9785	210.71	171.35
73G-IV5B	-5 to 5VDC, Input	12C1453	257.19	209.14
73G-IV10	0 to 10VDC, Input	95F9786	197.98	160.99
73G-OV10	0 to 10VDC, Output	95F9780	210.35	171.06
73G-OV10B	-10 to 10VDC, Output	16F9122	257.19	209.14
73G-IO20	0 to 20mA, Input	16F9125	257.19	209.14
73G-II420	4 to 20mA, Input	95F9787	208.52	169.56
73G-OI020	0 to 20mA, Output	12C1455	321.49	261.43
73G-OI420	4 to 20mA, Output	95F9781	242.26	197.00

DIGITAL OUTPUT, 5 AND 24V LOGIC

70G-OAC5	120VAC, 5V Logic	01B4449	15.18	12.34
70G-OAC5A	220VAC, 5V Logic	96F5620	16.50	13.42
70G-ODC5	3-60VDC, 5V Logic Fast	96F5625	15.18	12.34
70G-ODC5A	4-200VDC, 5V Logic	16F7268	23.44	19.06
70G-ODC5B	3-60VDC, 5V Logic Low Leakage	01B4467	15.18	12.34
70G-ODC5R	4-200VDC, Dry Contacts	16F7270	25.64	20.85
70G-OAC24A	220VAC, 24V Logic	96F5624	16.50	13.42
70G-OAC24	120VAC, 24V Logic	96F5623	15.18	12.34
70G-ODC24	3-60VDC, 24V Logic	96F5627	15.18	12.34

DIGITAL INPUT, 5 AND 24V LOGIC

70G-IAC5	120VAC, 5V Logic	95F9765	13.80	11.22
70G-IDC5	3 to 32VDC, 5V Logic	95F9770	13.80	11.22
70G-IDC5S	Dry Contacts, 5V Logic	16F7261	43.02	34.99
70G-IDC24	3 to 32VDC, 24V Logic	95F9772	13.80	11.22
70G-IAC24	120VAC, 24V Logic	95F9773	13.80	11.22

THERMOCOUPLE INPUT MODULES SINGLE 5VDC POWER SUPPLY

73G-ITCJ	0°C to +700°C	95F9774	315.42	256.50
73G-ITCK	-100°C to +924°C	95F9775	321.49	261.43
73G-ITCR	0°C to +960°C	05J2084	321.49	261.43
73G-ITCT	-200°C to +224°C	16F9127	321.49	261.43

RTD INPUT MODULE 4.5 - 5.5 VDC

73G-ITR100	-50°C to +350°C	95F9776	392.89	319.49
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(3646)

G5 I/O MOUNTING RACKS

G5 mounting racks are designed to accommodate G5 modules, which incorporate a status LED in the module. The G5 output modules also have an integral fuse that eliminates the need for module fuses and LED status indicators on the rack. The G5 modules are slightly thinner than the standard modules. When used on the MicroDAC LT® controllers, analog and digital I/O modules can be intermixed on the same G5 rack.

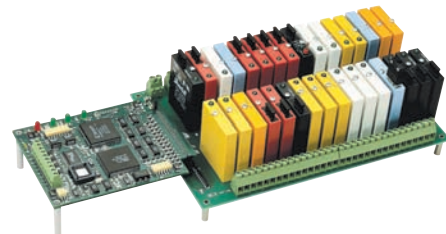


SERIES 70G: G-5 I/O RACKS

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	5-99
70GRCK4	4-Ch. Negative True Logic	16F7271	26.26	
70GRCK4R	4-Ch. Positive/Negative True Logic	16F7273	27.85	
70GRCK4-DIN	4-Ch. Negative True Logic-DIN Rail Mount	16F7272	57.55	
70GRCK4R-DIN	4-Ch. Pos./Neg. True Logic-DIN Rail Mount	16F7274	59.41	
70GRCK8-HL	8-Ch. 50-Pin Header with Ejector Levers	95F9763	60.34	
70GRCK16-HL	16-Ch. 50-Pin Header with Ejector Levers	01B4471	89.91	
70GRCK16I	16-Ch. Pos./Neg. True Logic-Panel Mount	16F7275	119.53	
70GRCK16I-DIN	16-Ch. Pos./Neg. True Logic-DIN Rail Mount	16F7276	151.13	
70GRCK16T	16-Ch. Neg. True Logic-Panel Mount	16F7277	116.05	
70GRCK24-HL	24-Ch. 50-Pin Header with Ejector Levers	95F9753	152.24	
70GRCKM32-HL	32-Ch. 50-Pin Header with Ejector Rails	95F9755	187.52	

(68718)

SYSTEM 50 MICRODAC LT CONTROLLERS

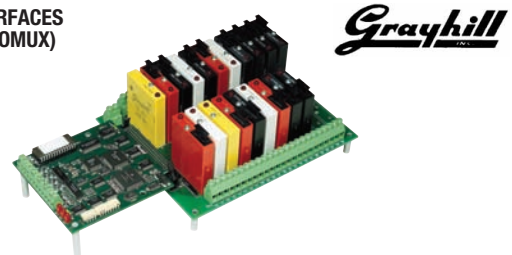


The host computer and MicroDAC controller communicate serially using RS-422/485 in a multi-drop or repeat configuration and standard Optomux® messages. Messages permit simple ON/OFF functions, monitor voltages, current or temperature signals. Analog inputs (G5 only) can also be scanned for out-of-range alarming, averaging, or min/max capture. C programs can be downloaded to onboard MicroDAC memory for execution. 64K onboard RAM memory for data storage. All MicroDACs control a maximum of 32 analog or digital I/O's. MicroDAC LT does not have an auxiliary RS-232 port, SBX expansion port, or real time clock. MicroDAC LTs 4.25 x 5.5" (107.95 x 139.7). Supply voltage is 4.75 to 5.25VDC. Supply current is 0.5A max. for MicroDAC LT. Operating temperature range is 0°C to 60°C. Software utilities include setup and troubleshooting assistance; DLL and DDE packages.

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	5-9
72-MDL-32ADC	LT. 32 Analog/Digital I/O, C Programmable	92F3693	632.61	

\*Optomux is a trademark of Opto 22. (3570)

NETWORK INTERFACES PROMUX® (OPTOMUX)



- Each Board Controls Up to 24 Standard, Mini, G5, or OpenLine® Digital Modules
- Up to 256 Addressable Promux® Boards Separated by 4,000'
- 100% Optomux Compatible, Plus Extra Commands
- Communications at Speeds from 300Bd to 38.4Kbd
- Transient Protection on Communications Lines
- Direct Plug-In or Ribbon Cable Interconnection
- BASIC and C Drivers for the PC
- Supply Voltage: 4.5 to 5.5VDC
- Operating Temperature Range: 0°C to 70°C

- Included Commands Permit You to:**
- Read the ON/OFF Status of Inputs
  - Determine the Width of Input Pulses
  - Count Pulses at Frequencies up to 400Hz
  - Detect Rising or Falling Edges
  - Latch Momentary Input Events
  - Turn Outputs ON or OFF, Individually or In Groups
  - Pulse-Width Modulate Outputs
  - Provide Delayed-ON or Delayed-OFF Outputs
  - Generate Pulses or Squarewaves

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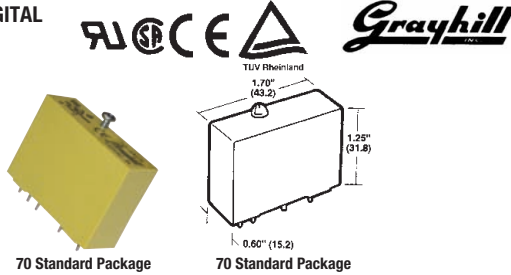
NETWORK INTERFACES PROMUX® (OPTOMUX) (CONT.)

NETWORK INTERFACES

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	
72-PMO-1	Plug Connector for Direct Rack Connection	90F8813	288.41	
72-PMO-3	Header Connector for Ribbon Cable to Rack Connection	90F8815	348.50	

(68922)

STANDARD DIGITAL INPUT/OUTPUT MODULES



70 series I/O modules provide 4000VAC optical isolation between sensitive logic circuits and external AC and DC power devices. Output modules have built-in transient surge protection to prevent false operation. All input modules except high speed IDC5B and IDC5D types have filtered inputs and transmit clean on/off status signals to the controller. Modules are epoxy-filled for shock and vibration immunity and operate from -40° to +100°C. UL recognized, CSA certified and CE compliant. TUV certified. Lifetime warranty. All modules pass the EMC directive (89/336/EEC) for industrial products. ISW1 and OSW1 modules have toggle switches for simulating inputs and outputs during troubleshooting. Four types available: AC Output (Black); DC Output (Red), AC Input (Yellow), and DC Input (White).

TERMINAL NUMBER AND CONNECTION

Type	#5	#4	#3	#2	#1
OAC	N/A	DC-In	DC-In	AC Out	AC Out
ODC	N/A	DC-In	DC-In	DC-Out	DC-Out
IAC	Ground	Output	+Vcc	AC In	AC In
IDC	Ground	Output	+Vcc	DC-In	DC-In

Only input modules have terminal #5.

SERIES 70 DIGITAL INPUT MODULES, 5V DC LOGIC

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	5-9
70-IAC5	120VAC	87F3678	11.13	10.65
70-IDC5	3-32VDC	03B7103	11.13	10.65
70-IDC5B*	3-32VDC	87F3663	11.13	10.65

SERIES 70 DIGITAL INPUT MODULES, 24V DC LOGIC

70-IAC24	120VAC	87F3677	11.13	10.65
70-IDC24	3-32VDC	87F3681	11.13	10.65

SERIES 70 DIGITAL OUTPUT MODULES, 5V DC LOGIC

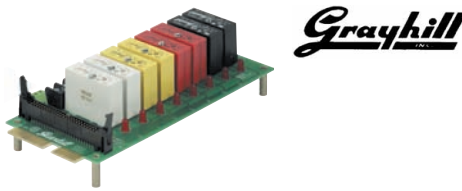
70-OAC5	120VAC	87F3671	11.13	10.65
70-OAC5A	240VAC	87F3672	12.31	11.78
70-ODC5	3-60VDC	87F3665	11.13	10.65
70-ODC5R	0-100VDC/0-120VAC, Dry Contacts	16F7265	19.26	18.43
70-ODC5A	4-200VDC	01B4417	18.75	17.94
70-ODC15	3-60VDC, 15V Logic	87F3673	11.58	11.08

SERIES 70 DIGITAL OUTPUT MODULES, 24V DC LOGIC

70-OAC24	120VAC	87F3669	11.13	10.65
70-ODC24	3-60VDC	87F3664	11.13	10.65

\*High speed polarized input circuitry. (3647)

STANDARD I/O MOUNTING RACKS



Passive backplates accept I/O modules and connect one of the logic side terminals from each module to an associated pin on the logic side connector for interface to the controller. Up to 8 racks may be stacked along a DIN rail. Modules on standard racks are plugged into receptacle cups or connectors and are held in place by hold down screws, bars or clips. An LED indicates status of each digital module. 5A replaceable fuse protects outputs from short circuits. Miniature racks are much smaller than industry standard racks to save panel space.

SERIES 70 STANDARD I/O RACKS

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	
70RCK4	4-Ch. Negative True Logic	87F3685	27.22	
70RCK4R	4-Ch. Positive or Negative True Logic	96F5628	28.65	
70RCK8	8-Ch. Card Edge	87F3682	53.71	
70RCK8-HL	8-Ch. 50-Pin Header with Ejector Levers	01B4574	59.19	
70RCK16	16-Ch. Card Edge	87F3683	87.36	

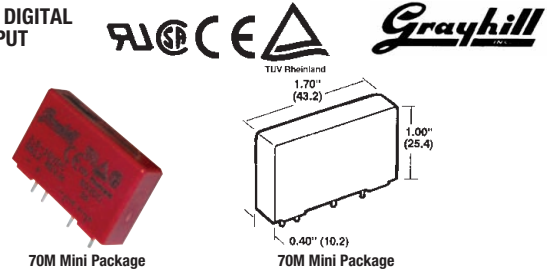
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STANDARD I/O MOUNTING RACKS (CONT.)

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	
70RCK16-HL	16-Ch. 50-Pin Header with Ejector Levers	90F7295	92.62	
70RCK24	24-Ch. Card Edge	87F3684	144.66	
70RCK24-HL	24-Ch. 50-Pin Header with Ejector Levers	90F7299	150.87	

(72321)

MINIATURE DIGITAL INPUT/OUTPUT MODULES



70 series I/O modules provide 4000VAC optical isolation between sensitive logic circuits and external AC and DC power devices. Output modules have built-in transient surge protection to prevent false operation. All input modules except high speed IDC5B and IDC5D types have filtered inputs and transmit clean on/off status signals to the controller. Modules are epoxy-filled for shock and vibration immunity and operate from -40° to +100°C. UL recognized, CSA certified and CE compliant. TUV certified. Lifetime warranty. All modules pass the EMC directive (89/336/EEC) for industrial products. ISW1 and OSW1 modules have toggle switches for simulating inputs and outputs during troubleshooting. Four types available: AC Output (Black); DC Output (Red), AC Input (Yellow), and DC Input (White).

SERIES 70M DIGITAL INPUT MODULES, MINI PACKAGE, 24V DC LOGIC

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	5-9
70M-IAC24	120VAC	89F587	11.13	10.65
70M-IDC24	3-60VDC	89F593	11.13	10.65
70M-IAC5A	180-280VAC	89F588	11.58	11.08

SERIES 70M DIGITAL OUTPUT MODULES, MINI PACKAGE, 5V DC LOGIC

70M-OAC5	120VAC	89F573	11.13	10.65
70M-OAC5A	240VAC	89F576	12.31	11.78
70M-ODC5A	4-200VDC	16F7266	18.75	17.94
70M-ODC5R	0-100VDC/0-120VAC, Dry Contacts	16F7267	19.26	18.43
70M-ODC5	3-60VDC	89F579	11.13	10.65

SERIES 70M DIGITAL OUTPUT MODULES, MINI PACKAGE, 24V DC LOGIC

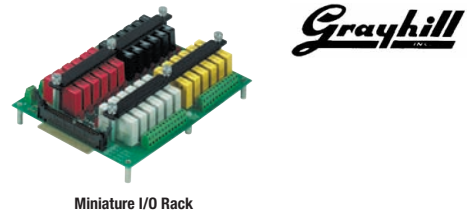
70M-OAC24	120VAC	89F575	11.13	10.65
70M-OAC24A	240VAC	89F578	12.31	11.78
70M-ODC24	3-60VDC	89F581	11.13	10.65

SERIES 70M DIGITAL INPUT MODULES, MINI PACKAGE, 5V DC LOGIC

70M-IAC5	120VAC	89F585	11.13	10.65
70M-IAC5A	240VAC	89F588	11.58	11.08
70M-IDC5	3-32VDC	89F591	11.13	10.65
70M-IDC5NP	10-32VDC, 5V Logic	01B4513	12.69	12.14

(146410)

MINIATURE I/O MOUNTING RACKS



Passive backplates accept I/O modules and connect one of the logic side terminals from each module to an associated pin on the logic side connector for interface to the controller. Up to 8 racks may be stacked along a DIN rail. Modules on standard racks are plugged into receptacle cups or connectors and are held in place by hold down screws, bars or clips. An LED indicates status of each digital module. 5A replaceable fuse protects outputs from short circuits. Miniature racks are much smaller than industry standard racks to save panel space.

SERIES 70M MINIATURE I/O RACKS

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	
70MRCK8-EC	8-Ch. Card Edge	95F9757	58.72	
70MRCK8-HL	8-Ch. 50-Pin Header with Ejector Levers	95F9759	62.07	
70MRCK16-EC	16-Ch. Card Edge	89F582	92.25	
70MRCK16-HL	16-Ch. 50-Pin Header with Ejector Levers	90F7302	98.34	
70MRCK24-EC	24-Ch. Card Edge	95F9756	158.02	
70MRCK24-HL	24-Ch. 50-Pin Header with Ejector Levers	95F9761	163.75	
70MRCK24-EC	24-Ch. Card Edge	90F7304	151.33	
70MRCK24-HL	24-Ch. 50-Pin Header with Ejector Levers	90F7306	156.23	
70MRCK32-HL	32-Ch. 50-Pin Header with Ejector Levers	01B4558	225.22	

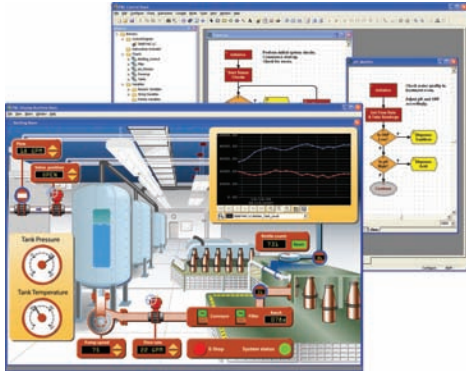
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I/O CONTROLLERS & MODULES

PAC PROJECT SOFTWARE SUITE

**OPTO 22**



PAC Project Software provides all the software necessary for industrial automation, remote monitoring, and data acquisition applications in any field. Part of Opto 22's SNAP PAC System, PAC Project software is fully integrated with SNAP PAC controllers, brains, and I/O. Suitable for projects from simple equipment management to full industrial control, PAC Project Professional, **mfg. part no. PACPROJECTPRO**, includes: PAC Control Professional, **mfg. part no. PACPROJECTPRO**, a full-featured, flowchart-based tool for developing control programs to run on SNAP PAC controllers; PAC Display Professional, **mfg. part no. PACDISPLAYPRO**, for creating human-machine interfaces (HMIs) for operators and technicians to monitor and interact with the SNAP PAC System; PAC Manager, **mfg. part no. PACMANAGER**, a utility program for configuring and maintaining SNAP PAC controllers, brains, and I/O; OptoOPCServer, **mfg. part no. OPTOOPCSERVER**, a fast and efficient server for communication with all OPC 2.0-compliant clients; and OptoDataLink, **mfg. part no. OPTODATALINK**, for sharing SNAP PAC System data with commonly used databases, including Microsoft® SQL Server, Microsoft Access, and MySQL®.

Mfg. Part No.	Description	Stock No.	Price Each
OPTODATALINK	Database Integration Software	41M0019	377.50
PACCONTROLPRO	PAC Control Professional Programming Software	41M0020	375.00
PACDISPLAYPRO	PAC Display Professional HMI Software	41M0021	375.00
PACPROJECTPRO	PAC Project Professional Software Suite	41M0022	900.00
OPTOOPCSERVER	OptoOPCServer™ Software	74K8488	467.50

(98999)

SNAP PAC MOTION CONTROL SUBSYSTEM

**OPTO 22**

- Control up to 16 multi-axis stepper motor systems with one SNAP-SCM-MCH16 host module
- Program using flowchart-based PAC Control software
- Simplify application development that combines stepper motor control with analog, digital, and I-based automation and control



SNAP-SCM-BB4

The SNAP PAC Motion Control Subsystem provides an integrated hardware and software toolset for controlling multi-axis stepper motors. The motion control subsystem is made up of the **SNAP-SCM-MCH16** motion control host module and the **SNAP-SCM-BB4** motion control breakout board. Mounted on a SNAP PAC rack, the **SNAP-SCM-MCH16** host module links up to four **SNAP-SCM-BB4** motion control breakout boards with a SNAP PAC R-series controller or SNAP PAC EB-series brain, *order separately on this page*.

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-SCM-BB4	Motion Control Breakout Board, 4 Axes, Stepper	41M0033	1335.90
SNAP-SCM-MCH16	Motion Control Host Communication Module, 16 Axes	41M0034	365.00

(94529)

SNAP PAC SERIES CONTROLLERS

**OPTO 22**



Just Added

SNAP PACs are high-performance, Ethernet-based programmable automation controllers suitable for automation and control, remote monitoring, and data acquisition applications. **SNAP-PAC-S1** standalone controller, **mfg. part no. SNAP-PAC-S1**, can run up to 32 I/O control flowcharts simultaneously. It features two independent 100 Mbps Ethernet interfaces for host and I/O communication, one RS-485 serial port for connection to Opto 22 mistic I/O units, two RS-232 serial ports (one with full handshaking) for PPP host connection or serial device connections, and multiple protocol support including TCP/IP, SNMP, FTP, and OptoMMP™. SNAP PAC R-series controllers, **mfg. part no. SNAP-PAC-R1** and **mfg. part no. SNAP-PAC-R2**, are rack-mounted I/O processors with two 100 Mbps Ethernet network interfaces, one RS-232 port with full handshaking for PPP host connection or serial device connections, and multiple protocol support. The **SNAP-PAC-EB1** and **SNAP-PAC-EB1** brains are I/O and communications processors for your SNAP PAC System. New Wireless/Wired versions add **-W** suffix to part numbers.

➤ CONTINUED ➤

SNAP PAC SERIES CONTROLLERS (CONT.)

SNAP PAC CONTROLLERS

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-PAC-S1	Programmable Ethernet controller 2 Ethernet interfaces	75K1478	1162.50
SNAP-PAC-S1-W	Programmable Ethernet controller 2 Ethernet interfaces Wireless/Wired	06R5669	1719.15
SNAP-PAC-S2	Programmable Ethernet controller 2 Ethernet interfaces and 4 serial ports	51M8457	1562.15
SNAP-PAC-S2-W	Programmable Ethernet controller 2 Ethernet interfaces and 4 serial ports, Wireless/Wired	06R5670	2033.15
SNAP-PAC-R1	Analog/digital/serial rack-mounted controller, 2 Ethernet port and high-speed digital functions	73K0778	1091.15
SNAP-PAC-R1-W	Analog/digital/serial rack-mounted controller, 2 Ethernet port and high-speed digital functions, Wireless/Wired	06R5667	1405.15
SNAP-PAC-R2	Analog/simple digital/serial rack-mounted controller, 2 Ethernet port	89K0425	966.00
SNAP-PAC-R2-W	Analog/simple digital/serial rack-mounted controller, 2 Ethernet port, Wireless/Wired	06R5668	1248.15

SNAP PAC BRAINS

SNAP-PAC-EB1	Ethernet-based analog/digital/serial, I/O and comm. processor, w/ 2 switched Ethernet network interfaces and high-speed digital functions	38M8497	657.00
SNAP-PAC-EB1-W	Ethernet-based analog/digital/serial, I/O and comm. processor, w/ 2 switched Ethernet network interfaces and high-speed digital functions, Wireless/Wired	06R5665	1091.15
SNAP-PAC-EB2	Ethernet-based analog/digital/serial, I/O and comm. processor, w/ 2 switched Ethernet network interfaces	41M0029	438.00
SNAP-PAC-EB2-W	Ethernet-based analog/digital/serial, I/O and comm. processor, w/ 2 switched Ethernet network interfaces, Wireless/Wired	06R5666	900.00
SNAP-PAC-SB1	Serial-based analog and digital I/O and comm. processor, with high-speed digital functions	51M8455	592.50
SNAP-PAC-SB2	Serial-based analog and digital I/O and comm. processor	51M8456	487.50

SNAP PAC MOUNTING RACKS

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-PAC-RCK4	4-Module SNAP PAC rack	35M4653	127.50
SNAP-PAC-RCK8	8-Module SNAP PAC rack	41M0032	150.00
SNAP-PAC-RCK12	12-Module SNAP PAC rack	41M0030	158.40
SNAP-PAC-RCK16	16-Module SNAP PAC rack	41M0031	165.60
● SNAP-RACKDIN	SNAP PAC rack DIN-rail adapter clip	18M9332	10.92
● SNAP-RACKDINB	DIN-rail adapter clip for I/O racks, 25-pack	16F1853	189.20

SNAP PAC LEARNING CENTER

Provides a complete package for learning, demonstrating and examining the capabilities of the SNAP Ethernet system. Includes 9-lesson self-paced tutorial that features step-by-step instructions on assembling hardware, configuring I/O unit and points, programming the SNAP PAC controller and building a human-machine interface. Includes iProject Basic, SNAP-M32 rack, 5 I/O modules, learning center load panel and cables.

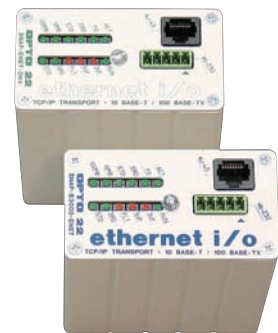
Mfg. Part No.	Description	Stock No.	Price Each
SNAP-PACL	SNAP PAC Learning center	89K0426	1720.80
SNAP-I04AB-LC	SNAP I Learning center	06R5662	70.65

(89901)

SNAP BRAINS

**OPTO 22**

- A High Performance I/O Processor Used Remotely to Control a Mix of Analog & Digital I/O Modules
- Used with either an Opto 22 Controller or a Host Computer
- On-board Intelligence Enables Many Distributed Control Functions
- Compatible with Standard 10 Mbps and 100 Mbps Ethernet Networks
- Can be Combined with SNAP "B-series" Mounting Racks, *Ordered Separately on page 1953*



SNAP-ENET-D64  
SNAP-B3000-ENET

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-B3000-ENET	Analog/Digital Ethernet Brain	48F1704	742.50
SNAP-ENET-D64	Digital-only Ethernet Brain (Requires SNAP-D64RS Digital-only Rack)	98B7690	831.60
SNAP-ENET-S64	Analog/Simple Digital Serial Brain	09J4543	420.00
B3000	SNAP Analog and Digital Remote Multifunctional Brain, Mistic/Optomux Protocol	52F7439	629.30
SNAP-ENET-S64	Analog/Simple Digital/Serial Brain	09J4543	420.00

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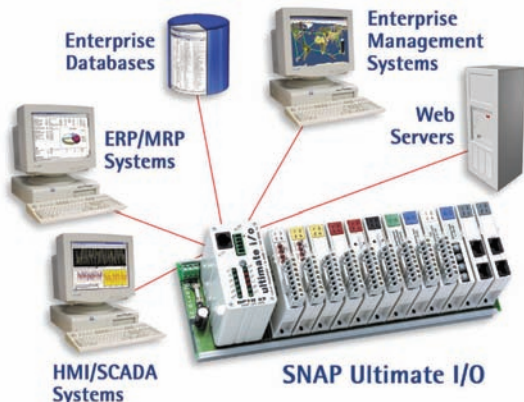
**SNAP BRAINS (CONT.)**

Mfg. Part No.	Description	Stock No.	Price Each 1-4
SNAP-LCE	Small-footprint Ethernet-based Industrial Controller	09J4544	860.00
SNAP-UP1-M64	Multifunction 64-Point SNAP Ultimate Brain	98H0381	1251.60

(3564)

**SNAP ULTIMATE I/O™ BRAINS**

**OPTO 22**



- Fully Compatible with Both 10 Mbps and 100 Mbps Ethernet
- Programmable – Functions are Executed Independently at the I/O Level
- Supports a Mix of Analog, Digital, and Serial I/O Modules
- Exchanges Data Directly with Enterprise Databases; No Middleware Needed
- Supports Simultaneous Use of Multiple Application-Level Protocols, Including Modbus/TCP, and SMTP
- Manages Equipment with an Enterprise Management System Using SNMP
- Comes with Easy-To-Use, Full-Featured ioControl Programming Software
- Works with Legacy Opto 22 SNAP I/O Hardware

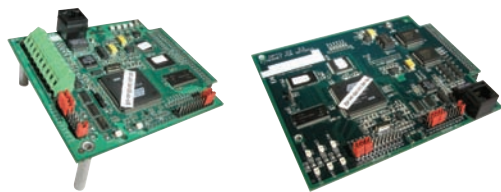
Combines I/O, control functions, Ethernet networking, and enterprise connectivity into a single, cohesive system. SNAP Ultimate I/O embeds additional control into the I/O itself, creating a localized, less complex, and more distributed I/O architecture. Added memory, processing power, and programmability remove unnecessary layers and components, making the architectures more streamlined. Compatibility with legacy SNAP I/O racks and modules permits increasing the performance of existing control systems without having to replace or rewire existing SNAP I/O racks, modules, and power supplies.

Mfg. Part No.	Description	Stock No.	Price Each 1-2
SNAP-UP1-ADS	Analog/Digital/Serial Ultimate I/O™ Brain with ioControl Software	27C7525	1281.40
SNAP-UP1-M64	Multifunction 64-Point SNAP Ultimate Brain	98H0381	1251.60

(68867)

**E1 AND E2 BRAINS**

**OPTO 22**



E1

E2

- Drop-in replacement for existing B1 and B2 brain boards on an Optomux® serial network
- Dual network connectivity: RS-422/485 serial and 10/100 Mbps Ethernet
- Optomux® Modbus/TCP and OptoMMP protocol support
- Can use Opto 22 ioProject software for control, HMI, and OPC server

E1 and E2 brain boards are Ethernet-ready I/O and communication processors for digital and analog I/O systems. E1 connects to rack of Opto 22 G1, G4, or Quad Pak™ digital I/O modules. E2 connects to a rack of Opto 22 G1 analog I/O modules. Drop-in replacements for B1 and B2 brain boards. Connect to 10/100 Mbps Ethernet networks while including support for serial Optomux®-based networks.

**ETHERNET NETWORK INTERFACE SPECIFICATIONS**

Type	IEEE 802.3 network, 10Base-T/100Base-TX
Connector	RJ-45
Rate	10/100 Mbps, half or full duplex
Protocols	Optomux® over Ethernet, Modbus/TCP, OptoMMP
Max. Segment Length	100m (328 ft.) with Cat 5 or superior UTP

**SERIAL NETWORK INTERFACE SPECIFICATIONS**

Type	RS-422/485 serial link
Connector	E1 Terminal block; E2 Terminal block on mounting rack
Data Rates	300, 600, 1200, 2400, 4800, 9600, 19200, 38400 baud
Protocols	Optomux

▶ CONTINUED ▶

**E1 AND E2 BRAINS (CONT.)**

**SERIAL NETWORK INTERFACE SPECIFICATIONS**

Range	Up to 32 Optomux stations for multidrop on serial network up to 1524m (5000 ft.) total length
Optomux I/O functions	<b>Digital I/O (E1):</b> Read point, write point, latch point (on/off), count, pulse duration, time delay*, pulse generation* <b>Analog I/O (E2):</b> Read point, write point, input averaging*, min/max recording (peak and valley), waveform generation*

\* Functions not available with Modbus/TCP, OptoMMP, and OPC.

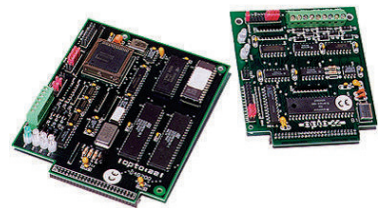
Mfg. Part No.	Description	Stock No.	Price Each 1-14
E1	Digital I/O Optomux® brain board for serial and Ethernet networks	45K1347	397.75
E2	Analog I/O Optomux® brain board for serial and Ethernet networks	45K1351	324.00

(67059)

**CLASSIC DIGITAL AND ANALOG BRAIN BOARDS**

**OPTO 22**

Classic brain boards are distinguished by the protocol that they support. Mistic protocol brain boards include the B100 (digital) and B200 (analog). The Optomux protocol is supported by the B1 and B100 (digital) and B2 and B200 (analog) brain boards. Pamux brain boards include B4 (32 channel digital), B5 (16 channel digital) and B6 (16 channel/analog). The mistic protocol provides seamless integration with Opto 22's FactoryFloor software.



**DIGITAL**

Mfg. Part No.	Description	Stock No.	Price Each 1-14
B1	16-Channel Digital Brain Optomux Protocol	92F3447	241.23
B4	32-Channel Digital Brain Pamux Protocol	92F3449	243.10
B5	16-Channel Digital Brain Pamux Protocol	92F3450	196.35
TERM 1	Pamux Bus Termination Card	92F3488	46.75

**ANALOG**

B2	16-Channel Analog Brain Optomux Protocol	92F3448	299.20
B6	16-Channel Analog Brain Pamux Protocol	92F3451	402.05

(3556)

**SNAP HIGH DENSITY I/O MODULES**



**OPTO 22**



Provide 32 digital input or 32 digital output points in one compact module. Ideal for applications with high point counts, or for those requiring more than 64 points on one SNAP I/O rack. For use with SNAP HDD break-out rack, order separately on page 1952

**SPECIFICATIONS**

**ALL HIGH-DENSITY MODULES**

Max. no. of HDD modules on one rack	16 (up to 512 digital I/O points)
-------------------------------------	-----------------------------------

**SNAP-ODC-32-SRC AND SNAP-ODC-32-SNK**

Output arrangement	32 channels; 4 groups of 8 inputs each. <b>Sourcing:</b> Points in each group share common pos. connection. <b>Sinking:</b> Points in each group share common neg. connection. 4-24VDC
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**SNAP-IDC-32**

Input arrangement	32 channels; 4 groups of 8 inputs each. 10-32VDC
Logic voltage and current	5VDC±0.1@150mA
Voltage	ON=10VDC@5mA; OFF=3VDC@0.1mA
Input resistance	20kOhm

**SNAP-AIMA-32**

Input range	-20mA to +20mA
Resolution	0.8 micro Amps
Accuracy	0.05% (10 microamps)
Input resistance-Single Ended	200 ohms (each channel)

**SNAP-AIV-32**

Input range	-10V to +10V or -5V to +5V
Resolution	0.4mV when configured for 10V, 0.2mV when configured for 5V
Accuracy	0.05%, 5mV@10VDC; 2.5mV@5VDC
Input resistance	1M ohms (each channel all channels share reference point)

**SNAP-AI8V-32**

Input arrangement	32 channels; 4 groups of 8 inputs each. 10-32VDC
Logic voltage and current	5VDC±0.1@150mA

▶ CONTINUED ▶

I/O CONTROLLERS & MODULES

**SNAP HIGH DENSITY I/O MODULES (CONT.)**

SNAP-AIBV-32	Voltage	ON=10VDC@5mA; OFF=3VDC@0.1mA
	Input resistance	20kOhm

<b>SNAP-AITM-8</b>		
Resolution	3 microvolts from -75mV to +75mV, 2 microvolts from -50mV to +50mV, 1 microvolt from -25mV to +25mV	
Signal Input Type	Thermocouple (B, C, D, E, G, J, K, N, R, S or T) or ±75, ±50 or ±25 Millivolt Devices	
Cold Junction Temperature Compensation	Automatic When Used with SNAP I/O Processors	

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-IDC-32	SNAP High Density Digital Input Module	20K7803	240.50
SNAP-ODC-32-SRC	SNAP High Density Digital Output Module, Sourcing	26K2345	342.25
SNAP-ODC-32-SNK	SNAP High Density Digital Output Module, Sinking	74K3045	342.25
SNAP-AIMA-32	SNAP 32-Channel Current Input Module, -20mA to +20mA	41M0024	937.50
SNAP-AIV-32	SNAP 32-Channel Voltage Input Module, -10mA to +10mA or -5mA to +5mA	41M0026	981.25
SNAP-AITM-8	SNAP 8-Channel Thermocouple or Millivolt Input Module	14M9238	524.16

CABLES			
SNAP-HD-CBF6	6 ft. (1.8m) Wiring Harness for SNAP HDD Modules	74K3043	136.50
SNAP-HD-BF6	6 ft. (1.8m) Header Cable for SNAP HDD Modules and Breakout Racks	69K5899	154.70

(87061)

**SNAP I/O™ MODULES**

Just Added

**OPTO 22**

- Convenient Pluggable Connector for Removable Top-Mounted Field Wiring
- Ready Access to Standard Fuses
- Modules "SNAP" Securely on Racks - No Screws Required
- Highly Visible LED Status Indicator for Each Channel
- Mix Analog and Digital Modules on the Same Rack
- Handy Snap-On ID Plates for Channel Labels



SNAP I/O is Opto 22's highest density I/O packaging. SNAP I/O includes AC and DC digital modules and intelligent analog modules. SNAP's compact design delivers space savings while innovative packaging allows modules to simply snap in place. Factory Mutual (FM) approved versions of many SNAP I/O modules are available, go online or call.

**ANALOG CURRENT INPUT MODULES**

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-AIMA2-I	Isolated 2-channel analog current input -1mA to +1 mA	67K3420	337.35
SNAP-AIMA	2 Channel analog Current input +/-20mA	52F7453	243.10
SNAP-AIMA-I	2 Channel Current Isolated, +/-20mA	12C1588	364.65
SNAP-AIMA-32	32-Ch -20mA to +20mA Analog Current Input	41M0024	937.50
SNAP-AIMA-ISRC	Isolated 2-channel analog current input -20mA to +20mA, with loop sourcing	26H1746	338.40
SNAP-AOA-23-ISRC	Isolated 2-channel analog output, current loop, 4-20mA, with loop sourcing	87K7147	441.15
SNAP-AOA-23	2 Channel analog output current Loop 4-20mA	91F5817	243.10
SNAP-AOA-28	2 Channel analog output, current Loop 0-20mA	34C3475	261.80
SNAP-AOA-3	Single Channel Current 4 to 20mA	16F1842	198.22

**ANALOG LOAD CELL INPUT MODULES**

SNAP-AILC	Acts as Load Cell Front End, 2mV/3mV	89K0421	314.00
SNAP-AILC-2	Acts as Load Cell Front End, 3mV/4mV	45M7353	314.00

**ANALOG VOLTAGE INPUT MODULES**

SNAP-AIMV2-4	4-Channel -50 to +50 mV or -25 to +25 mV input	32C2056	274.75
SNAP-AIV2-I	Isolated 2-channel analog voltage input -100 to +100 VDC or -50 to +50 VDC	49H7341	327.25
SNAP-AIV	2-channel analog voltage input -10 to +10 VDC or -5 to +5 VDC	52F7437	243.10
SNAP-AIV-4	4-channel analog voltage input -10 to +10 VDC or -5 to +5 VDC	32C2059	327.25
SNAP-AIV-32	4-channel analog voltage input -10 to +10 VDC or -5 to +5 VDC	41M0026	981.25
SNAP-AIV-I	2 Channel Voltage Isolated +/-10VDC	27C0290	327.25
SNAP-PH/ORP	Isolated 2-channel high-impedance -0.1 to +0.1VDC or -0.5 to +0.5VDC analog input module	09J4546	420.75
SNAP-AIMV-4	4 Channel +/-150mV or +/-75mV	34C3473	327.25

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**SNAP I/O™ MODULES (CONT.)**

**ANALOG VOLTAGE OUTPUT MODULES**

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-AOD-29	2-channel analog time-proportional digital output, 5 to 60 VDC	34C3476	252.45
SNAP-AOV-27	2-channel analog voltage output, -10 to +10VDC	91F5819	243.10
SNAP-AOV-25	2-channel analog voltage output, 0 to +10VDC	91F5818	243.10

**ANALOG VOLTAGE RMS INPUT MODULES**

SNAP-AIARMS-I	Isolated 2-channel 0 to 10 amp Vrms AC/DC input	89K0420	306.15
SNAP-AIARMS	2-channel 0 to 10 amp RMS AC/DC input	10C2970	254.80
SNAP-AVRMS	2-channel 0 to 250 V RMS AC/DC input	34C3474	261.80
SNAP-AVRMS-I	Isolated 2-channel 0 to 250 V RMS AC/DC input	89K0422	354.90

**ANALOG FREQUENCY INPUT MODULES**

SNAP-AIRATE	2 Channel Rate, 0-25kHz	83F5700	261.80
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**ANALOG THERMOCOUPLE INPUT MODULES**

SNAP-AITM2-I	2-channel isolated thermocouple Type B, C, D, G, N, T, R, S or -50 mV to +50 mVDC or -25 mV to +25 mV input	26H2200	327.25
SNAP-AICTD	2-channel temperature input, ICTD	91F5814	195.00
SNAP-AITM-I	Isolated 2-channel type E, J or K thermocouple or -150 mV to +150 mV or -75 mV to +75mV input	32C2057	327.25
SNAP-AICTD-4	4-channel temperature input, ICTD	26H2199	318.50
SNAP-AITM	2 Channel Thermocouple, Type, E, J, K	52F7438	243.10
SNAP-AITM-2	2 Channel Isolated Thermocouple Type B, C, D, G, N, T, R, S	32C2058	243.10
SNAP-AIRTD	2 Channel Temperature 100 ohm PT RTD	91F5815	313.60
SNAP-AITM-8	8 Channel Type B, C, E, G, J, K, N, R, S, or T Thermocouple or ±75, ±50, or ±25 mV Analog Input	14M9238	524.16

**ANALOG THERMISTOR INPUT MODULES**

SNAP-AIR40K-4	4-channel resistor/thermistor input 40 K ohms, 20 K ohms, 10 K ohms, or 5 K ohms	18C2609	327.25
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**ANALOG POWER MONITORING MODULES**

SNAP-AIPM	Single-phase Power Monitoring Module, 85-250V and 0-10A RMS Inputs	09J4541	301.00
SNAP-AIPM-3	3-phase Power Monitoring Module, 85-250V and 0-10A RMS Inputs	06R5660	384.65

**DIGITAL AC VOLTAGE INPUT MODULES**

SNAP-IAC5	4 Channel 90-140VAC	52F7491	52.36
SNAP-IAC5A	4 Channel 180-280VAC	52F7490	52.36
SNAP-IAC5MA	4 Channel Isolated, 90-140VAC Manual/Auto Switch	10C2749	104.72
SNAP-IAC-16	16 Channel Isolated Digital Input, 90-140 VAC/VDC	31M8931	195.00
SNAP-IAC-A-16	16 Channel Isolated Digital Input, 180-280 VAC/VDC	41M0027	195.00

**DIGITAL AC VOLTAGE INPUT MODULES**

SNAP-OAC5	4 Channel 12-280VAC	52F7488	52.36
SNAP-OAC5MA	4 Channel 12-280VAC Isolated, Manual/Auto Switch	34C3484	104.72
SNAP-OAC5-I	4 Channel 12-280VAC Isolated	34C3483	52.36

**DIGITAL DRY CONTACT INPUT MODULES**

SNAP-IDC5-SW	4 Channel Dry Contact, Norm Open	34C3478	74.80
SNAP-IDC5-SW-NC	4 Channel Dry Contact, Norm Closed	34C3479	74.80

**DIGITAL DC VOLTAGE INPUT MODULES**

SNAP-IDC5-HT	4 Channel 10-32VDC leakage-tolerant input, 5 VDC logic	89C2175	51.33
SNAP-IDC5G	4 Channel 35-75 VAC/VDC input, 5 VDC logic	06R5661	43.96
SNAP-IDC5-FAST-A	4 Channel High Speed 18-32VDC	83F5703	55.50
SNAP-IDC5MA	4 Channel Isolated 10-32VDC, High Speed, Manual/Auto Switch	96B1493	104.72
SNAP-IDC5	4 Channel 10-32VDC	52F7489	52.36
SNAP-IDC5D	4 Channel 2.5-28VDC	83F5702	50.96
SNAP-IDC5Q	2 Axis Quadrature Position Input	83F5699	263.90
SNAP-IDC5FAST	4 Channel High Speed 2.5-16VDC	91F5826	56.10
SNAP-IDC-16	16 Channel Isolated Digital Input, 10-32 VDC	41M0028	195.00
SNAP-IDC-32	32-point digital input, 10-32 VDC	20K7803	240.50

**DIGITAL DC OUTPUT MODULES**

SNAP-ODC5-I	4 Channel, 5-60VDC Isolated	34C3485	50.96
SNAP-ODC5A-I	4 Channel, 5-200VDC Isolated	34C3486	52.36
SNAP-ODC5SRC	4 Channel 5-60VDC	52F7486	52.36
SNAP-ODC5SNK	4 Channel DC Output 5-60VDC Load Sink	52F7487	50.96
SNAP-ODC5MA	4 Channel, 5-60VDC Isolated, Manual/Auto Switches	34C3488	104.72
SNAP-ODC5ASNK	4 Channel, 5-200VDC Load Sinking	34C3487	52.36
SNAP-ODC-32-SRC	32-point digital output, 5-60 VDC load sourcing	26K2345	342.25
SNAP-ODC-32-SNK	32-point digital output, 5-60 VDC load sinking	74K3045	342.25

**DIGITAL DRY CONTACT OUTPUT MODULES**

SNAP-ODC5R	4 Channel Dry Contact Output, Normally Open	83F5706	56.10
SNAP-ODC5R5	4 Channel Dry Contact Output, Normally Closed	27C1269	56.10

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**SNAP I/O™ MODULES (CONT.)**

**DIGITAL ENCODER INPUT MODULES**

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-IDC5Q	4 Channel Dry Contact Output, Normally Closed	83F5699	263.90

**SERIAL RS-232 INTERFACE MODULE**

SNAP-SCM-232	2 Channel RS-232 Serial Communication	95B7598	378.00
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**SERIAL RS-485/422 MODULE**

SNAP-SCM-485-422	2 Channel RS-485 Serial Communication	10M7287	409.50
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**SERIAL WIEGAND INTERFACE**

SNAP-SCM-W2	2 Channel RS-32 Serial Communication	84C9383	252.00
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**SERIAL PROFIBUS INTERFACE**

(3745)

**SNAP ACCESSORIES**

**Just Added**



**CABLES**

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-TEX-CB06	6 ft. (1.8m) 8-wire, for SNAP I/O modules. Odd terminals commoned	12N3818	40.82
SNAP-TEX-CBE6	6 ft. (1.8m) 8-wire, for SNAP I/O modules. Even terminals commoned	12N3817	46.02
SNAP-TEX-CBS6	6 ft. (1.8m) 8-wire, for SNAP I/O modules. Straight-through; no common terminals	12N3819	40.82
SNAP-HD-ACF6	6 ft. (1.8m) wiring harness assembly for SNAP 16-point digital modules	31M8927	127.50
SNAP-HD-BF6	6 ft. (1.8m) wiring harness for 32-channel modules and breakout boards	69K5899	154.70
SNAP-HD-CBF6	6 ft. (1.8m) wiring harness with flying leads for most 32-point modules	74K3043	136.50
SNAP-HD-G4F6	6 ft. (1.8m) header cable for SNAP-ODC-32-SNK digital modules and G4PB16 mounting racks	41M4264	150.00

**BREAKOUT BOARDS**

SNAP-TEX-32	32-point breakout board for SNAP I/O modules	12N3822	103.62
SNAP-TEX-FB16-H	16-point breakout board for SNAP I/O modules with fuses, fuse-blown indicators & bussed power (120-240 V)	12N3820	134.52
SNAP-TEX-FB16-L	16-point breakout board for SNAP I/O modules with fuses, fuse-blown indicators & bussed power (12-24 V)	12N3821	119.32
SNAP-TEX-MR10-4	Mechanical relay breakout board for a 4-channel SNAP digital output module	11P7227	141.30
SNAP-TEX-MR10-16	Mechanical relay breakout board for one high-density or four 4-channel SNAP digital output module	11P7226	328.50
SNAP-IDC-HDB	Fused breakout board for SNAP 32-point digital input modules	69K5901	160.16
SNAP-ODC-HDB	Fused breakout board for SNAP 32-point digital output modules	74K3044	254.80
SNAP-AIV-HDB	Breakout board for SNAP-AIV-32 and SNAP-AIV-32-FM analog modules	41M0025	235.20
SNAP-AIMA-HDB	Breakout board for SNAP-AIMA-32 and SNAP-AIMA-32-FM analog input modules	41M0023	225.00

**DIN-RAIL MOUNTING**

● SNAP-PSDIN	DIN-rail adapter kit for most SNAP power supplies and controllers	83F5697	37.40
SNAP-PSUDIN	DIN-rail adapter kit for large-footprint SNAP power supplies	06R5671	58.50
● SNAP-RACKDIN	DIN-rail adapter clip for I/O racks	18M9332	10.92
● SNAP-RACKDINB	DIN-rail adapter clip for I/O racks, 25 pack	16F1853	189.20
SNAP-S2DIN	DIN-rail adapter kit for SNAP-PAC-S2	06R5672	46.32
● SNAP-LCM4DIN	DIN-rail adapter kit for SNAP-LCM4	26H2206	65.45
● SNAP-CDBBDIN	DIN-rail adapter kit for classic digital brain boards (E1, B1, B5, B100)	16F1845	22.50

**TOOLS & SPARE PARTS**

ICTD	ICTD Temperature Probe	92F3465	46.75
OPTOTERMAL-G20	Operator interface for commissioning SNAP high-density digital modules	74K3042	280.50
● SNAP-STRAP	Jumper strap for digital I/O modules	18M9333	6.55
SNAP-WIRESTRAP	Jumper connector for digital I/O modules	83F5696	8.42
SNAP-MODTOOL	SNAP I/O module removal tool, 10-pack	78K6562	16.38
SNAP-FIELDCONB	SNAP module field connector, 10-pack	16F3660	9.35
SNAP-RCK-B2M	Adapter for using legacy SNAP brain on SNAP PAC or M-series racks	41M4267	149.15
SNAP-RCK-M2B	Adapter for using SNAP PAC or SNAP M brains on SNAP B-series racks	41M4268	149.15
SNAP-MR10	Mechanical relay replacement for breakout boards, 10 A	06R5664	21.98
SNAP-MODLATCHB	Replacement latches, 10-pack	06R5663	17.70
SNAP-MODFUSEHLDRB	4 A fuseholder, used with SNAP digital output modules	16F3661	9.35

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**SNAP ACCESSORIES (CONT.)**

**POWER SUPPLIES**

Mfg. Part No.	Description	Stock No.	Price Each
SNAP-PS24	110VDC to 24VDC @ 3/4A	91F5820	273.00
SNAP-PS24U	100-250VAC to 24VDC @ 1-1/4A output	83J8849	327.60
SNAP-PS5	110VAC to 5VDC @ 4A	91F5821	280.50
SNAP-PS5U	100-250VAC to 5VDC @ 5A output	26H1747	262.80
SNAP-PS5-24DC	24VDC to 5VDC @ 4A	83F5698	280.50

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**G4 I/O MODULES**



**OPTO 22**



- High-density, single-channel analog & digital modules
- Digital modules include LED status indicator. Also available with manual switching (MA) capability for field wiring and control logic testing
- Digital output modules feature a top-mounted replaceable fuse (FUSEG4)
- Analog modules are factory-calibrated, offer 12-bit resolution and require a single 24-volt power supply

**G4 DIGITAL AC INPUTS**

Mfg. Part No.	Description	Stock No.	Price Each
G4IAC5	90-140VAC 5VDC Logic	96F1065	12.74
G4IAC15A	180-280VAC 15VDC Logic	96F6445	13.09
G4IAC24	90-140VAC 24VDC Logic	96F6446	12.74
G4SWIN	Test Module w/Switch	96F1006	24.31
G4IAC5A	180-280VAC/VDC 4.5-6.0VDC Logic	96F6448	12.74
G4IAC5MA	90-140VAC/VDC 5 VDC Logic	96F1059	26.18

**G4 DIGITAL DC INPUTS**

G4IDC5	10-32VDC 5VDC Logic	96F1066	13.09
G4IDC5B	4-16VDC 5VDC Logic High Speed	96F1067	15.90
G4IDC5D	2.5-28VDC 5VDC Logic	96F1068	13.09
G4IDC5K	2.5-16VDC 5VDC Logic Very High Speed	96F6452	15.90
G4IDC5Q	4-16VDC, 5VDC Logic, 2-Channel Quadrature	52F337	215.05
G4IDC5-SWNC	Switch Status Input, Self-powered, Normally Closed	09J4534	44.88
G4IDC5-SW	Switch Status Input, Self-powered, Normally Open	74K5110	42.48
G4IDC5MA	10-32VDC 5VDC Logic w/Switch	96F1058	26.18
G4IDC15	10-32VDC 15VDC Logic	96F6449	13.09
G4IDC24	10-32VDC 24VDC Logic	96F6450	13.09

**G4 DIGITAL AC OUTPUTS**

G4OAC5	12-140VAC 5VDC Logic	96F1042	13.09
G4OAC5A	24-280VAC 5VDC Logic	96F6457	13.09
G4OAC5A5	24-280VAC 5VDC Logic NC	96F1043	14.03
G4OAC5MA	12-140VAC w/HOA/SW	96F1044	43.26
G4OAC15A	24-280VAC 15VDC Logic	96F6454	13.09
G4OAC24	12-140VAC 24VDC Logic	96F6455	13.09
G4OAC24A	24-280VAC 24VDC Logic	96F6456	13.09
G4SWOUT	Test Module w/Switch	96F1007	25.48
G4OAC15	1.5-16VDC 12-140VAC Logic	96F6453	13.09

**G4 DIGITAL DC OUTPUTS**

G4ODC5	5-60VDC 5VDC Logic	96F1045	13.09
G4ODC5A	5-200VDC 5VDC Logic	96F6460	16.84
G4ODC5MA	5-60VDC 5VDC Logic w/HOA/SW	96F7187	26.18
G4ODC5R	Reed Relay Output 5VDC Logic	96F1046	13.09
G4ODC5R5	Reed Relay Output 5VDC Logic NC	96F1047	18.70
G4ODC15	5-60VDC 15VDC Logic	96F6458	13.09
G4ODC24	5-60VDC 24VDC Logic	96F6459	13.09
G4ODC24A	5-200VDC 24VDC Logic	92F9075	17.30
G4ODC5FM	4.0-8.0VDC 5-60VDC Logic	52F342	14.03

**G4 ANALOG INPUTS**

G4AD3	4-20mA Input	52F306	209.30
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**G4 DIGITAL I/O MODULE ACCESSORIES**

● FUSEG4	4 Amp Fuse for G4 Digital Output Modules	18M9087	5.88
● G4-MOD-SOCKETS	G4 Module Socket 100 Pack	96F6499	28.05
G4BATT32	Memory retention battery	52F263	65.45

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I/O CONTROLLERS & MODULES

QUAD PAK™ I/O MODULES

- Four channels of digital I/O in one high-density package
- Integral LED for each channel on the module
- For use with Quad Pak brain board compatible mounting racks, PB16HQ and PB32HQ

**OPTO 22**



Mfg. Part No.	Description	Stock No.	Price Each	
			1-14	15-24
IAC5Q	4-Channel, AC Input, 90-140VAC, 5VDC Logic	96F1014	65.45	64.05
IDC5BQ	4-Channel, DC Input, 4-16VDC, 5VDC Logic, High-Speed	96F1017	84.15	82.35
IDC5Q	4-Channel, DC Input, 10-32VDC, 5VDC Logic	96F1019	65.45	64.05
OAC5Q	4-Channel, AC Output, 12-280VAC, 5VDC Logic	96F1023	65.45	64.05
ODC5Q	4-Channel, DC Output, 5-60VDC, 5VDC Logic	96F1025	65.45	64.05

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STANDARD I/O MODULES



**OPTO 22**



STANDARD DIGITAL AC INPUTS

Mfg. Part No.	Description	Stock No.	Price Each	
			1-14	15-24
● IAC15	90-140VAC 15VDC Logic	18M9102	14.96	14.64
● IAC24	90-140VAC 24VDC Logic	18M9103	14.96	14.64
● IAC24A	180-280VAC 24VDC Logic	18M9104	14.96	14.64
● IAC5	90-140VAC 5VDC Logic	18M9105	14.96	14.64
● IAC5A	180-280VAC 5VDC Logic	19M4130	14.96	14.64
● INPUT SWITCH	Test Module w/Switch	96F1020	16.84	16.38

STANDARD DIGITAL DC INPUTS

● IDC15	10-32VDC 15VDC Logic	18M9111	14.96	14.64
● IDC24	10-32VDC 24VDC Logic	18M9112	14.96	14.64
● IDC5	10-32VDC 5VDC Logic	18M9113	14.96	14.64
● IDC5B	4-16VDC 5VDC Logic, High-Speed	18M9114	15.90	15.56
● IDC5D	2.5-28VDC 5VDC Logic	96F1018	14.96	14.64

STANDARD DIGITAL AC OUTPUTS

● OAC15	12-140VAC 15VDC Logic	18M9259	14.96	14.64
● OAC15A	24-280VAC 15VDC Logic	18M9260	14.96	14.64
● OAC24	12-140VAC 24VDC Logic	18M9261	14.96	14.64
● OAC24A	24-280VAC 24VDC Logic	18M9262	14.80	14.48
● OAC5	12-140VAC 5VDC Logic	18M9263	14.96	14.64
● OAC5A	24-280VAC 5VDC Logic	18M9264	14.96	14.64
● OAC5A5	24-280VAC 5VDC Logic NC	18M9265	14.96	14.64
● OUTPUT SWITCH	Test Module w/Switch	96F1032	27.30	26.55

STANDARD DIGITAL DC OUTPUTS

● ODC15	5-60VDC 15VDC Logic	18M9269	14.96	14.64
● ODC15A	5-200VDC 15VDC Logic	18M9270	16.84	16.38
● ODC24	5-60VDC 24VDC Logic	18M9271	14.96	14.64
● ODC24A	5-200VDC 24VDC Logic	18M9272	17.30	16.93
● ODC5	5-60VDC 5VDC Logic	18M9274	14.96	14.64
● ODC5A	5-200VDC 5VDC Logic	18M9275	17.30	16.93
● ODC5R	Reed Relay Output 5VDC Logic	18M9277	15.90	15.56

STANDARD ANALOG INPUTS

AD3	4-20mA	92F3435	84.15	82.35
AD4	ICTD	92F3437	101.75	99.55
AD6	0-5VDC	92F3440	102.85	100.65
AD6HS	0-5VDC, High-Speed	92F3441	102.85	100.65
AD7	0-10VDC	92F3443	102.85	100.65
AD10T2	100Ω RTD, Isolated	92F3421	205.70	201.30
AD18T	Type T Thermocouple, Isolated	92F3431	205.70	201.30
AD3T	4-20mA, Isolated	92F3436	177.65	173.85
AD5T	Type J Thermocouple	92F3439	205.70	201.30
AD5T	Type J Thermocouple, Isolated	92F3439	205.70	201.30
AD6T	0-5VDC, Isolated	92F3442	177.65	173.85
AD8T	Type K Thermocouple, Isolated	92F3445	158.40	156.20

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STANDARD I/O MODULES (CONT.)

I/O MODULE ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Each	
			1-14	15-24
ICTD	Temperature Probe for AD4	92F3465	46.75	45.75
● FUSE05	5A Fuse for G1 Digital Output Modules	96F9249	5.88	5.76
● FUSE01	1A Fuse for G1 Digital Logic Power	92F3170	5.88	5.76

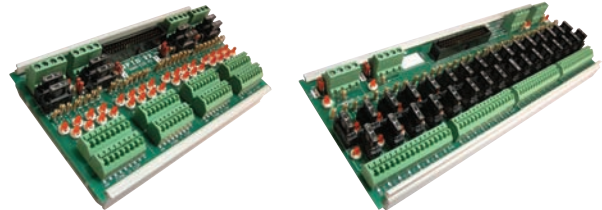
STANDARD ANALOG OUTPUTS

DA3	4-20mA	92F3452	112.20	109.80
DA3T	4-20mA, Isolated	92F3453	168.30	164.70
DA4	0-5VDC	92F3454	112.20	109.80
DA4T	0-5VDC, Isolated	92F3455	166.50	162.90
DA5	0-10VDC	92F3456	112.20	109.80
DA7	-10 to +10VDC	92F3458	130.90	128.10

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SNAP HIGH DENSITY BREAKOUT RACKS

**OPTO 22**



SNAP-IDC-HDB

SNAP-ODC-HDB

Racks for SNAP high-density I/O modules provide LED indicators and easily accessible fused connectors for input or output points. Feature labeled connectors, fusing, and indicators to simplify connecting field devices to SNAP high-density modules. For use with SNAP high density I/O modules, order separately on pages 1949-1950 and Optoterminal™-G20 operator interface, order separately online or call.

Mfg. Part No.	Description	Stock No.	Price Each
			1-5
SNAP-IDC-HDB	For SNAP high-density digital input modules	69K5901	160.16
SNAP-ODC-HDB	For SNAP high-density digital output modules	74K3044	254.80
SNAP-AIMA-HDB	For SNAP-AIMA-32 Analog Input Modules	41M0023	225.00
SNAP-AIV-HDB	For SNAP-AIV-32 Analog Input Modules	41M0025	235.20

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MISCELLANEOUS I/O RACK ACCESSORIES



**OPTO 22**

Straps are for single-channel or quad I/O applications which require that one line of each I/O be a common.

Mfg. Part No.	Description	Stock No.	Price Each
			1-14
JUMPERS	Jumpers, Quantity 10	92F3466	1.50
● STRAP2	2-Position Strap, Single Rack R0433	96F1071	1.18
● STRAP2Q	2-Position Strap, Quad Rack R0432	96F1072	3.74
● STRAP4Q	4-Position Strap, Quad Rack R0431	96F1073	5.61
● STRAP8	8-Position Strap, Single Rack R0430	96F1074	4.06
● G4STRAP	G4 Jumper Strap R5187	18M9095	8.42

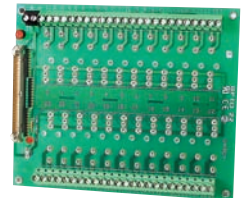
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CLASSIC BRAIN BOARD RACKS



**OPTO 22**

All mounting racks feature 50-pin header connector control interface and barrier strip field interface. **H** suffix in mfg. part no. indicates a 2-position screw terminal power interface and power indicator. UL listed, CSA certified, CE compliant.



GENERATION 4 DIGITAL

Mfg. Part No.	Description	Stock No.	Price Each
			1-14
G4PB8H	8-Channel	92F9074	84.15
G4PB16H	16-Channel	92F3462	115.94
G4PB32H	32-Channel	92F3464	243.10
G4PB4	4-Channel	96F1053	46.75
G4PB4R	4-Channel, Output Only	96F1054	46.75
G4PB8	8-Channel	96F1055	84.15
G4PB16	16-Channel	96F1048	115.94
G4PB16I	16-Channel, Isolated Control	96F1049	130.90
G4PB16T	16-Channel w/Extra Terminal Strip	96F1050	140.25

➤ CONTINUED ➤

**CLASSIC BRAIN BOARD RACKS (CONT.)**

Mfg. Part No.	Description	Stock No.	Price Each	
			1-14	
G4PB24	24-Channel	96F1051	149.60	
G4PB32DEC	32-Channel	96F1052	157.00	
<b>QUAD PAK™ DIGITAL</b>				
PB16HQ	Quad 4-Position/16-Channel	96F1034	102.85	
PB24Q	Quad 6-Position/24-Channel	96F1038	177.65	
PB24HQ	Quad 6-Position/24-Channel with Header Connector	96F1037	185.00	
PB32HQ	Quad 8-Position/32-Channel with Header Connector	92F3479	252.45	
<b>STANDARD DIGITAL</b>				
PB4H	4-Channel	92F3481	93.50	
PB8H	8-Channel	92F3483	111.65	
PB16H	16-Channel	92F3474	112.20	
PB16HC	16-Channel w/Extra Common Terminal Strip	92F3475	149.60	
PB16A	16-Channel I/O Module Rack	96F1033	121.55	
PB16T	16-Channel I/O Module Rack	96F1035	158.95	
PB24	24-Channel I/O Module Rack	96F1036	187.00	
PB4	4-Channel I/O Module Rack	96F1040	52.36	
PB4R	4-Channel Output Module Rack	96F1069	52.36	
PB8	8-Channel I/O Module Rack	96F1070	94.60	
<b>STANDARD ANALOG</b>				
PB4AH	4-Channel	92F3480	121.55	
PB8AH	8-Channel	92F3482	163.80	
PB16AH	16-Channel	92F3473	243.10	

(3557)

**I/O BRICKS**



**OPTO 22**



G4RAX

- High Performance I/O Bricks
- Intelligent and Flexible Single Point I/O Control in a Rugged, Deadfront, Compact Package
- Event/Reactions Direct Orderly Shutdowns and Execute High Speed Deterministic Responses to Sophisticated Control Sequences, Alarm Monitoring, Diagnostics and Host Interrupts

**REMOTE ANALOG BRICK**

Mfg. Part No.	Description	Stock No.	Price Each	
			1-5	
G4RAX	8-Channel I/O Unit Extender	52F288	637.00	

**REMOTE DIGITAL BRICK**

G4D16R	16-Channel Multifunction I/O Unit MISTIC Protocol	52F295	869.55	
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**REMOTE ANALOG BRICK BRAIN BOARDS**

G4RA	Analog 16-Channel Multifunction Brain MISTIC Protocol	52F303	654.50	
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**REMOTE DIGITAL BRICK BRAIN BOARDS**

G4RD	16-Channel Multifunction Brain MISTIC Protocol	52F299	654.50	
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**ACCESSORIES**

● BRICKSTRAP	Bus Bar for Brick Base	52F355	18.70	
G4BRICKBASE	Mounting Base for Brick Assembly	52F7475	187.00	
G4RCOMMKIT	MISTIC 200 Remote Comm. Kit	52F354	280.50	
G4REG	Brick Power Regulation Module	52F304	227.50	
SBTA	Single Brick Terminal Adapter	52F356	46.75	

(3555)

**SNAP SYSTEM REPLACEMENT PARTS**

**OPTO 22**



Just Added

**B Series** racks accommodate mounting a SNAP brain directly on the rack. **D Series** racks feature a standard 50-pin header for connection to a remote processor. **Mfg. part no. suffixes MC and MCP** denote the inclusion of an auxiliary terminal strip to facilitate field wiring. **M Series** racks are for SNAP PAC R-series, SNAP-UP1-M64, and SNAP-ENET-S64 controller/brains. **SNAP-RCK-M2B** adapters are for SNAP PAC B-series and allow rack to accommodate one PAC R series controller or one SNAP PAC brain. **SNAP-RCK-B2M** adapters allow SNAP PAC racks or SNAP M-series racks to accommodate a brain that would normally mount on a SNAP B-series rack.

**CONTROLLERS**

Mfg. Part No.	Description	Stock No.	Price Each	
			1-2	
SNAP-LCE	Small-footprint Ethernet-based Industrial controller	09J4544	860.00	
SNAP-LCM4	SNAP Modular M4 Controller	95B7593	2399.40	
SNAP-LCSX-PLUS	SNAP Controller with 4 COM ports	83F5707	892.50	
SNAP-UP1-ADS	Analog/Digital/Serial SNAP Ultimate Brain	27C7525	1281.40	
SNAP-UP1-M64	Analog/Simple Digital/Serial SNAP Ultimate Brain	98H0381	1251.60	

**SNAP BRAINS**

SNAP-ENET-D64	Digital-only Ethernet Brain	98B7690	831.60	
SNAP-ENET-S64	SNAP Simple Ethernet I/O Brain, Analog/Simple Digital/Serial	09J4543	420.00	
SNAP-B3000-ENET	Analog/Digital/Serial Ethernet Brain	48F1704	742.50	
SNAP-B3000-MODBUS	Analog/Digital Modbus Slave Brain	83F5693	533.20	

**SNAP MOUNTING RACKS**

SNAP-B4M	4 Module Rack	94B7135	102.85	
SNAP-B8M	8 Module Rack	52F7483	125.29	
SNAP-B8MC	8 Module Rack w/Extra Common TB	52F7484	134.68	
SNAP-B12M	12 Module Rack	52F7446	134.40	
SNAP-B12MC	12 Module Rack w/Extra Common TB	52F7447	172.90	
SNAP-B16M	16 Module Rack	52F7450	180.55	
SNAP-B16MC	16 Module Rack w/Extra Common TB	52F7451	243.10	
SNAP-D4M	Digital 4 Module Rack	52F7440	55.50	
SNAP-D4MC	Digital 4 Module Rack w/Extra Common TB	52F7441	84.15	
SNAP-D6M	Digital 6 Module Rack	52F7443	82.28	
SNAP-D6MC	Digital 6 Module Rack w/Extra Common TB	52F7444	93.50	
SNAP-D8MC	Digital 8 Module Rack w/Extra Common TB	52F7478	125.29	
SNAP-D12M	Digital 12 Module Rack	12C2071	138.38	
SNAP-D12MC	Digital 12 Module Rack w/Extra Common TB	52F7481	164.56	

**RACK MOUNTING ADAPTERS**

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	
SNAP-RCK-B2M	For PAC or M-series racks	41M4267	149.15	
SNAP-RCK-M2B	For B-series racks	41M4268	149.15	

(3563)

**ADAPTER CARDS**

**OPTO 22**



ISA BUS



PC Board Mount (Typical)

➔ CONTINUED ➔



I/O CONTROLLERS & MODULES

ADAPTER CARDS (CONT.)

Mfg. part no. **PCI-AC28** high-speed adapter card with header connector is designed to link the Pamux Bus to PCI-compatible computers. Ideal for customers who have been using Opto 22's mfg. part no. **AC-28** adapter card but need to upgrade to a newer PC using the PCI rather than ISA Bus. Mfg. part no. **PCI-AC5** adapter card provides an interface between personal computers with a 33MHz PCI Bus and Opto 22's digital I/O mounting racks, for direct connection to input/output points. 100 times as fast as the mfg. part no. **AC5**. Controls up to 48 I/O points. Includes header connectors and 6' cables. Adapter cards provide an interface between personal computers and Opto 22 mounting racks for direct connection to input/output points. Mfg. part no. **G4AC5** includes cable with connector for G4 style racks. Mfr. part nos. **AC40 A, B, and C** are enclosed in a 4.0x10.5x4.38" (HxWxD) anodized aluminum case that allows mounting to a Mistic panel.



Stand-Alone (Typical)

ISA BUS

Mfg. Part No.	Description	Stock No.	Price Each	
			1-14	10-24
AC24AT	Serial Port RS-422/485, Isolated	92F3394	327.25	
AC422AT	Serial Port RS-422/485, Nonisolated	92F3414	280.50	
AC5	ISA Bus to I/O Rack Adapter with 6 ft. Cable, Edge Connector	96F7185	215.05	
AC28	ISA Bus to Pamux Bus Adapter	92F3396	205.70	
G4AC5	ISA BUS to I/O Rack Adapter with 6 ft. Cable, Header Connector	96F7186	224.40	
AC37	High-Speed Serial Co-processor, RS485	92F3406	654.50	

PCI BUS

PCI-AC51	PCI Bus to Pamux Bus Adapter	88H3857	508.75	
PCI-AC5	ISA Bus to I/O Rack Direct Adapter	01C7187	555.00	
AC40A	Fiber Optic Repeater, 120VAC	92F3409	785.00	
TERM 2	Pamux Bus Termination Card Shielded Cable	92F3489	45.50	

STAND-ALONE

AC7	RS232 to RS422 Converter	92F3415	140.25	
AC7A	RS232-RS422/485 Converter, 120V	92F3416	233.75	
AC7B	RS232-RS422/485 Converter, 220V	92F3417	233.75	
AC40A	Fiber Optic Repeater, 120VAC	92F3409	785.00	
AC40B	Fiber Optic Repeater, 240VAC	92F3410	785.00	
AC8A	Half Duplex Modem Interface, 115VAC	92F3419	374.00	
AC8	Half Duplex Modem Interface, 5VDC	92F3418	280.50	

(69346)

I/O CABLES

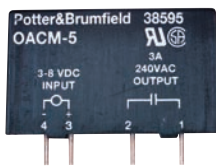
OPTO 22

Cable types are designated according to the types of connectors on each end. The **HH** series has a header connector on both ends. Mfg. part no. **HH10** 10-foot, and mfg. part no. **OD6** 6-foot cable also available; go online or call. The **OD** series has a header connector on one end and an edge connector on the other. 50-conductor ribbon cable.

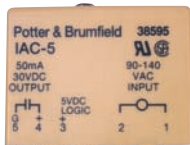
Mfg. Part No.	Description	Stock No.	Price Each	
			1-14	10-24
HH1.5	1.5' Header-to-Header Cable	96F1008	44.88	
HH4	4' Header-to-Header Cable	96F1010	52.36	
HH6	6' Header-to-Header Cable	96F1011	61.71	
OD4	4' Edge-to-Header Cable	96F1029	46.75	

(3750)

P&B SLIMLINE AND SOLID-STATE INPUT/OUTPUT MODULES



OACM-5



IAC-5

Slimline input/output modules provide interfacing between microprocessor- or computer-based control systems and external input devices and loads such as switches and sensors. Color-coded with high isolation and noise immunity. Packaged in a 0.4" enclosure. SPST-NO contacts. Mfg. part nos. beginning with **IA** indicate module function is AC input. **ID** indicates DC input, **OA** indicates AC output, and **OD** indicates DC output. Solid state modules are photo-isolated and feature excellent transient immunity. Packaged in industry-standard plug-in enclosure. Units interchange easily without disturbing wiring. Maximum load current derating for output modules is linear from 3A to 0.8A between +25°C and +80°C. **OAC-5H** and **ODC-5H** are linear from 5A to 1.3A between +25°C and +80°C. Both module types ideal for series operation. Dimensions for slimline modules in inches (mm): 1.7 (43.18) L x 0.4 (10.16) W x 1.00 (25.4) H. Dimensions for standard modules: 1.7 (43.18) L x 0.6 (15.2) W x 1.25 (38.10) H. UL recognized, CSA certified. Order mounting boards separately on this page.

SLIMLINE MODULES

Mfg. Part No.	Input Voltage		Output Voltage		Stock No.	Price Each	
	Min.	Max.	Min.	Max.		1-9	10-24
● IACM-5	90VAC/VDC	140VAC/VDC	...	30VDC	18M9101	12.34	11.56
● IDCM-5	±3.3VDC	±32VDC	...	30VDC	18M9110	12.22	11.45

▶ CONTINUED ▶

P&B SLIMLINE AND SOLID-STATE INPUT/OUTPUT MODULES (CONT.)

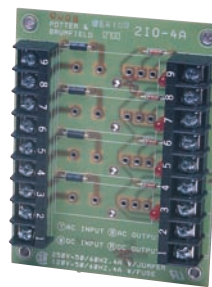
Mfg. Part No.	Input Voltage		Output Voltage		Stock No.	Price Each	
	Min.	Max.	Min.	Max.		1-9	10-24
OACM-5.	3VDC	8VDC	24VAC	280VAC	89F965	12.82	11.78
● ODCM-5	3VDC	8VDC	3VDC	60VDC	29M9955	12.31	11.55
● OACM-5H	3VDC	8VDC	24VAC	280VAC	18M9258	14.68	13.75
● OACM-U	3VDC	15VDC	24VAC	280VAC	18M9256	14.80	13.28
● OACM-UH	3VDC	15VDC	24VAC	280VAC	18M9257	14.84	13.92

STANDARD MODULES

● IAC-5	90VAC/VDC	140VAC/VDC	...	30VDC	18M9099	14.83	12.98
● IAC-5A	180VAC/VDC	280VAC/VDC	...	30VDC	44F963	12.86	12.50
● IAC-5E	10VAC/VDC	36VAC/VDC	...	30VDC	18M9100	12.82	12.46
● IAC-15	90VAC/VDC	140VAC/VDC	...	30VDC	18M9097	12.97	12.17
● IAC-24	90VAC/VDC	140VAC/VDC	...	30VDC	18M9098	13.18	12.81
● IDC-5	±10VDC	±36VDC	...	30VDC	18M9109	12.29	11.52
● IDC-24	±10VDC	±36VDC	...	30VDC	18M9108	15.65	13.70
OAC-5.	3VDC	6VDC	12VAC	280VAC	75F002	12.29	11.52
● OAC-5A	3VDC	6VDC	12VAC	280VAC	18M9255	12.30	11.53
OAC-5H.	3VDC	6VDC	12VAC	280VAC	90F7638	14.84	13.92
● OAC-15	9VDC	18VDC	12VAC	280VAC	18M9253	15.67	13.72
● OAC24	18VDC	28VDC	12VAC	280VAC	17M7501	20.99	18.52
● OAC-24A	18VDC	28VDC	12VAC	280VAC	18M9254	13.59	13.22
● ODC-5	3VDC	6VDC	5VDC	60VDC	29M9954	14.83	12.98
ODC-5A.	3VDC	8VDC	3VDC	250VDC	90F1187	15.82	15.39
● ODC-15	9VDC	18VDC	5VDC	60VDC	64P8092	13.61	13.23
● ODC-15A	9VDC	18VDC	10VDC	200VDC	18M9267	16.26	15.81
● ODC-24	18VDC	28VDC	5VDC	60VDC	18M9268	12.66	11.88

Logic in VDC is indicated in suffix of type number. Suffixes **-UH** and **-U** indicate logic of 3-15VDC. (3266)

P&B MOUNTING BOARDS FOR I/O MODULES



210-4A



Specifications	2108	2104A 21016A	2104B 21016B	210M16 210M24	21016 21024
	Field Terminals: Screw Terminals	X	X	X	X
Logic Terminals: Screw Terminals		X	X		
Logic Terminals: 26-Pin Card Edge Connector	X				
Logic Terminals: 50-Pin Card Edge Connector	X			X	X
Designed for Neg. True Logic; One Logic Voltage	X	X	X	X	X
Designed for Neg. or Pos. True Logic; Mult. Logic Voltages			X		
Will Accept 50-Pin Dual-Row Header					X

FOR SLIMLINE MODULES

Mfg. Part No.	No. of I/O Channels and Module Positions	L x W x H*	Stock No.	Price Each	
				Each	10000000-000000000
210M16	16	9.5 x 3.25 x 2.16"	90F7640	80.92	...
210M24	24	8 x 6 x 2.16"	90F7641	156.95	138.70

FOR STANDARD MODULES

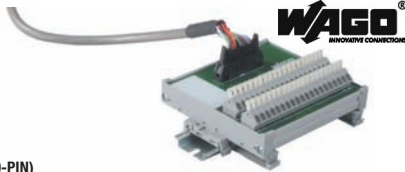
2104A	4	4.5 x 3.5 x 2.2"	81F4505	35.79	33.55
2104B	4	4.5 x 3.5 x 2.2"	94F1901	42.95	39.06
2108	8	8.4 x 3.5 x 2.2"	93B4142	70.40	62.22
21016	16	14.4 x 3.5 x 2.2"	81F9284	124.17	116.42
21016A	16	14.4 x 3.5 x 2.2"	94F809	161.08	142.35
21016B	16	14.4 x 3.5 x 2.2"	94F810	190.39	166.60
21024	24	18.75 x 4.5 x 2.2"	81F9285	222.40	208.04

\*Height is measured to top of mounted modules; order separately. (3267)

I/O CONTROLLERS & MODULES • INDUSTRIAL KEYBOARDS

PLC INTERFACE MODULES AND CABLES

- Wiring system compatible with A-B PLC I/O cards
- CAGE CLAMP® technology reduces wiring time and increases reliability



DIGITAL I/O INTERFACE MODULES (20-PIN)

Mfg. Part No.	Description	Voltage Range (VAC/DC)	Stock No.	Price Each
				1-24
51015068	LED, narrow, w/24VAC/DC LEDs	10-30	45M6280	133.64
51015138	Fusible, extra terminals, w/24VAC/DC B/F indicators	10-30	45M6284	172.36
51015139	Feed through, narrow	132	45M6285	56.57
51015180	Feed through, 3-wire sensor-type	132	45M6286	147.60
51015198	Fusible, extra output terminals	0-132	45M6287	227.52

DIGITAL I/O INTERFACE MODULES (40-PIN)

51015069	Feed through, 3-wire sensor type	0-60	45M6281	141.83
51015136	Feed through, standard	0-132	45M6283	102.05

ANALOG INTERFACE I/O BOARDS

51015056	Feed through, 8-channel w/3-terminals/channel	0-132	45M6279	68.12
51015117	Feed through, 4-channel w/3-terminals/channel	0-132	45M6282	99.40

DIGITAL I/O CABLE ASSEMBLIES

Mfg. Part No.	Length	Stock No.	Price Each
			1-24
51011304	1.0	45M6271	119.06
51011307	1.0	45M6272	119.06
51011311	1.0	45M6273	109.85
51011318	1.0	45M6274	119.06
51011325	1.0	45M6275	119.06
51013063	1.0	45M6276	176.16
51017301	1.0	45M6288	139.33
51017315	1.0	45M6289	176.16
51014198	1.0	45M6278	176.16

ANALOG I/O CABLE ASSEMBLIES

51013193	1.0	45M6277	197.55
51017320	2.5	45M6290	236.66

(94460)

MEDICAL AND INDUSTRIAL WASHABLE KEYBOARDS

Just Added



J84-2120



J84-2800

Washable NEMA 4 rated backlit keyboard with integrated pointing device for medical and industrial applications.

Mfg. Part No.	Color	No. of Keys	Interface	Stock No.	Price Each
					1-5
● J842120LUAUS2	Black	83	USB	89M0188	263.94
● J842120LUAUS5	Light Blue	83	USB	89M0190	263.94
● J842800LUAUS5	Light Blue	104	USB	89M0195	247.34

(146386)

MINI INDUSTRIAL KEYBOARDS

Just Added



Reduced-size "Mini" keyboard with enhanced 83 position key layout.

▶ CONTINUED ▶

MINI INDUSTRIAL KEYBOARDS (CONT.)

Mfg. Part No.	Color	Interface	Stock No.	Price Each
			34P4268	113.50
68652400EUADAA	Black	USB		

(146387)

J86 SERIES VANDAL-PROOF KEYBOARDS

Just Added



J86-4400

Specifications:

- Interface: USB 2.0
- Cable length: 1.8m
- Key layout: 67 key layout
- Dimensions: 400 x 124 x 49mm
- Keyswitch lifetime: 3million ops
- Operating temperature: 0°C to 50°C

Features:

- Stainless steel
- Vandal-resistant
- 67-key layout
- Integrated trackball
- Ultra-rugged trackball
- 5 internet-friendly shortcut keys

Mfg. Part No.	Description	Stock No.	Price Each
			1-5
J864400LUAUS	Keyboard, 67-key layout w/ rubber mat switches and rugged trackball	34P4667	475.41

(147147)

2200 SERIES REDUCED FOOTPRINT VANDAL RESISTANT KEYBOARD



Just Added



- Tough, Vandal Resistant Construction
- Sealed against Water & Dust to IP65 Specification
- -20°C (Dry) to +75°C Operational
- Operational Life of More than 4 Million Cycles per Key
- Resistant to Most Corrosives and Cleaning Agents

Constructed to survive in exposed, unsupervised, public environments. Responsive key action ensures rapid and reliable data entry in tough, wet or industrial conditions. A hardened stainless steel front plate and captive, high impact polymer keys ensure the keyboard's resistance to hard use and abuse. Available in 3 sizes: **Mfg. part no. 2210** reduced footprint version; **Mfg. part no. 2220** reduced footprint with function row keys; **Mfg. part no. 2230** reduced footprint with function row and number pad. Each size is available with engraved chromed metal or high-impact polymer keys. Supplied with switchable PS2/USB encoding electronics. Approx. size 11"(W) x 5"(H). PS/2 and USB cables are available; *order separately below.*

Mfg. Part No.	Description	Stock No.	Price Each
			1-4
● 2210-220023	Vandal-Resistant Keyboard	29C7886	356.41
● 2220-220023	Vandal-Resistant Keyboard	84C8655	380.21
● 2220-320023	Vandal-Resistant Metal Key Keyboard	10M8481	469.46
● 2230-220023	Vandal-Resistant Keyboard	10M8482	424.21
● 2230-320023	Vandal-Resistant Metal Key Keyboard	10M8483	530.41
● 1200-001003	PS/2 Cable w/ 6-Pin Mini-DIN Connector	29C7730	14.22
● 1200-002003	USB Cable w/ USB Connector	29C7731	14.22
● 2210-MK0003	2200 Series Under Panel Mount Kit	79K4485	17.79

(69336)

1200 SERIES MINIATURE VANDAL-RESISTANT KEYBOARD



- Environmentally Sealed Against Liquids and Dust to IP65 Specifications
- Permanent Laser-Engraved Keytop Graphics
- Operating Temperature Range: -20°C to +75°C

Developed for use in a new generation of web-enabled public telephones and transaction terminals, this small (approx. 7" x 3") but highly responsive keyboard is suitable for use in exposed or hostile environments. Robust construction is highly resistant to hard use, abuse and vandalism. It is sealed against water and dust to allow responsive, reliable data entry in the most demanding situations. Includes integral PS/2 to USB switchable encoder. *Order PS/2 and USB cable separately below.*



Mfg. Part No.	Description	Stock No.	Price Each
			1-4
● 1200-320023	Vandal-Resistant, Miniature PC Keyboard	29C7884	332.01
● 1200-001003	PS/2 Cable w/ 6-Pin Mini-DIN Connector	29C7730	14.22

▶ CONTINUED ▶

INDUSTRIAL KEYBOARDS • MOTORS – STEP

1200 SERIES MINIATURE VANDAL-RESISTANT KEYBOARD (CONT.)

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	1-9
● 1200-002003	USB Cable w/ USB Connector	29C7731	14.22	
● 1200-MK0003	1200 Series Under Panel Mount Kit	79K4471	14.22	

(69339)

VANDAL-RESISTANT KEYBOARDS WITH INTEGRATED TRACKBALL



- Tough, Vandal-Resistant Construction
- Sealed Against Water and Dust to IP65 Specification
- Integral 38mm, PS2/USB Compatible Trackball with Left and Right Click Keys
- Operational Life of More Than 4 Million Cycles Per Key
- Resistant to Most Corrosives and Cleaning Agents
- Protected Against RFI/EMI in Accordance with Current and Forthcoming European and US Directives
- -20°C (Dry) to +75°C Operational Temperature

**STORM 2210**-Trackball keyboards are constructed to survive in exposed, unsupervised, public environments. Their responsive key action provides rapid, reliable and responsive data entry in tough, wet or industrial conditions. A hardened stainless steel front plate and captive keytops ensure the keyboard's resistance to hard use, abuse and vandalism. Water- and impact-resistant trackballs make these keyboards the complete and ideal solution for PC data entry in menu based "point and click" applications. Available with engraved chromed metal or high-impact polymer keys. Supplied with switchable PS2/USB encoding electronics. PS/2 and USB cables with connectors for keyboard and trackball are available separately.

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	1-9
● 2210-220223	Vandal-Resistant Keyboard w/ Trackball	84C8652	474.66	
● 2210-320323	Vandal-Resistant Metal Key Keyboard w/ Trackball	10M8480	549.45	
● 2200-002003	PS/2 Trackball Cable	84C8650	12.91	
● 2200-003003	USB Trackball Cable	84C8651	12.91	

STAND-ALONE TRACKBALLS

Mfg. Part No.	Description	Stock No.	Price Each	
			1-4	1-9
● 2200-000203	RobustTrackball, Phenolic Ball	10M8478	133.74	
● 2200-000303	Vandal-Resistant Trackball, Steel Ball	10M8479	176.50	

(72180)

STEPPER ROTARY MOTORS

Just Added



- Climatic class: Wide-spread according to DIN IEC 60721-2-1
- Terminal: Class A for UBD, UFB, Class B for UAG, UCD
- Electrical connection: Cable
- Protection: IP40 for UAG, UBD, IP30 for UCD, UFB
- Bearing: Sintered bronze, self-lubricating
- Direction: Reversible
- Winding: Bipolar



UFB Motor with UGD Gearbox

Mfg. Part No.	Step Angle (°)	Holding Torque (mNm)	Dimensions (mm)	Thermal Resistance at f=Rtherm	Price Each	
					Stock No.	1-9
UAG33N05RH	18	5.6	20 x 17	47 K/W	56P2643	26.54
UBD14U05RE	7.5	13.0	36 x 21	27 K/W	56P2645	26.54
UCD14N03RN	7.5	16.0	28 x 24	29 K/W	56P2646	26.54
UFB13N01RM	15	43.0	52 x 28	11 K/W	56P2655	46.67

(142232)

STEPPER LINEAR MOTORS

Just Added



- Climatic class: Wide-spread according to DIN IEC 60721-2-1
- Thermal resistance at f=0 Rtherm: 29K/W
- Terminal class: B
- Max force (N): 35
- Travel (mm): 1/3
- Thread pitch (mm): 1
- Dimensions (mm): 28 x 31
- Protection: IP40
- Bearing: Ball bearing
- Winding: Bipolar



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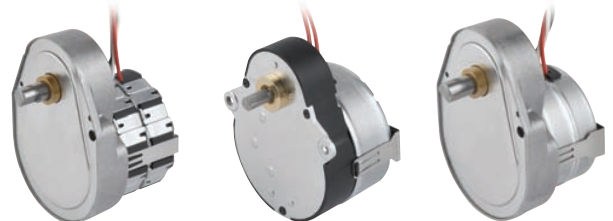
STEPPER LINEAR MOTORS (CONT.)

Mfg. Part No.	Step Angle (°)	Travel per Step (mm)	Speed at 200 Hz (mm/s)	Price Each	
				Stock No.	1-9
UCE13N02D1B	7.5	0.021	4.16	56P2647	46.53
UCE13N02D1R	7.5	0.021	4.16	56P2648	70.29
UCL13N02D1B	15	0.041	8.33	56P2649	46.53
UCL13N02D1R	15	0.041	8.33	56P2650	70.29

(142233)

STEPPER ROTARY GEARMOTORS AND SYNCHRONOUS MOTORS

Just Added



UGD Gearbox/UBB/UBD/UFB Motor

UGM Gearbox/UDS Motor

UGD Gearbox/UBB Motor

- Climatic class: Wide-spread according to DIN IEC 60721-2-1
- Terminal class: A
- Electrical connection: Cable
- Protection: IP40 for UBB, IP30 for UFB, UFR
- Bearing: Sintered bronze, self-lubricating
- Direction: Reversible
- Winding: Bipolar

STEPPER ROTARY GEARMOTORS

Mfg. Part No.	Step Angle (°)	Holding Torque (cNm)	Detent Torque (nNm)	Thermal Resistance at f=0 Rtherm	Price Each	
					Stock No.	1-9
UBB1N05M25AENN	15	1/1.9	0.25/0.36	27 K/W	56P2644	60.39
UDB1N02B10CNVN	15	2.7/2.2	0.35	18 K/W	56P2651	96.03
UFB1N02V25CNVN	15	45.3/10.4	0.45	11 K/W	56P2654	121.77

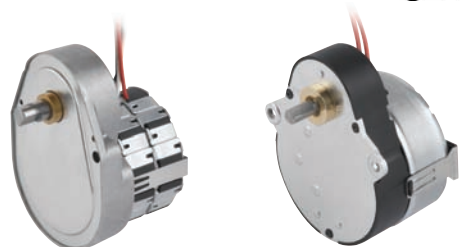
SYNCHRONOUS MOTORS

Mfg. Part No.	Speed 50/60 Hz (rpm)	Voltage (V)	Running Torque 50/60 Hz (cNm)	Thermal Resistance at f=0 Rtherm	Price Each	
					Stock No.	1-9
UDS1UJ1M20CN2M	500/600	6-230	0.9/0.8	17 K/W	56P2652	44.55
UDS1UJ1M50AN2M	500/600	6-230	0.9/0.8	17 K/W	56P2653	44.55
UFR1NH8F10CMNV	500/600	12-230	5.3/4.7	11 K/W	56P2656	76.23
UFR1NH8F60CMNV	500/600	12-230	5.3/4.7	11 K/W	56P2657	129.69

(142234)

GEARBOXES FOR STEPPER MOTORS

Just Added



UGD Gearbox w UFR Motor

UGM Gearbox w UDS Motor

- Axial thrust Fa: UGD 10 N, UGJ 400 N, UGM 20 N
- Lateral force Fr: UGD 50 N, UGJ 600 N, UGM 100 N
- Climatic class: wide-spread according to DIN IEC 60721-2-1

Mfg. Part No.	Torque Max. (cNm)	Ratio	Shaft Dim. Dia. x Length (mm)	Motor Combination Series	Price Each	
					Stock No.	1-9
UGD18ENN	32	1800:1	4 x 10	UB, UD, UF w/o UFR3/4 & UFB3/4	56P2658	30.69
UGJ50CNU	1500	500:1	12 x 20	UB, UD, UF, UH	56P2659	119.79
UGM50CNU	100	500:1	4 x 10	UB, UD, UF w/o UFR3/4 & UFB3/4	56P2660	45.54

(142235)



**ELECTRONICS DRIVER BOARDS FOR MOTORS**

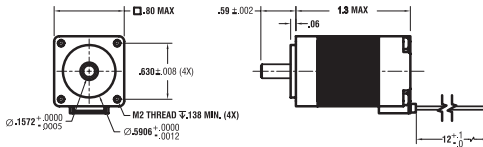
Just Added



Mfg. Part No.	Supply Voltage	Phase Current	Control Inputs To	Stock No.	Price Break 1
4 636 6608 3	10-24 VDC	350 mA	Inhibit internal clock Inhibit motor current change direction of rotations	56P2661	43.01
4 636 6733 3	10-42 VDC	71-500 mA	Inhibit internal clock Inhibit motor current change direction of rotations	56P2662	94.44
4 71 748 980	10-48 VDC/24 VAC	2.3 A	3 digital inputs 4 signal outputs 1 analog input 0-10VDC Relay contact	56P2663	748.94

(142236)

**NEMA SIZE 8 MINIATURE STEP MOTOR**



Dimensions

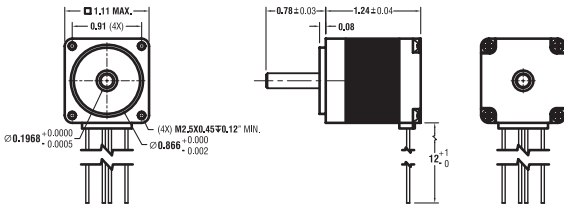
- 1.8° step resolution
- 0.79" square
- Up to 2.5 oz-in holding torque
- Applications include medical, communications, semiconductor and robotics

Torque curves for individual motors available at [www.newark.com](http://www.newark.com).

Mfg. Part No.	Dim A. (in.)	Amp/Phase	Torque (oz.-in.)	Inertia (oz.-in. <sup>2</sup> )	No. of Leads	Stock No.	Price Each
● 208-13-01R0	1.3	0.6	2.5	0.01	4	16M4192	78.75

(84916)

**NEMA SIZE 11 HIGH TORQUE STEP MOTOR**



Dimensions

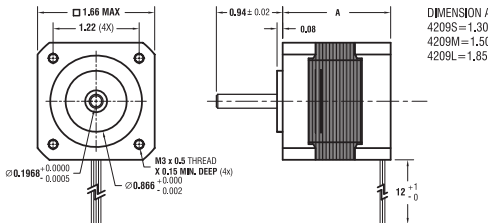
- 1.8° step resolution
- 1.1" square
- Up to 9.2 oz-in
- Applications include medical, communications and semiconductor industries

Torque curves for individual motors available at [www.newark.com](http://www.newark.com).

Mfg. Part No.	Dim A. (in.)	Amp/Phase	Torque (oz.-in.)	Inertia (oz.-in. <sup>2</sup> )	No. of Leads	Stock No.	Price Each
● 211-13-01R0	1.24	0.67	9.2	0.05	4	16M4193	73.50

(84919)

**NEMA SIZE 17 HIGH TORQUE STEP MOTORS**

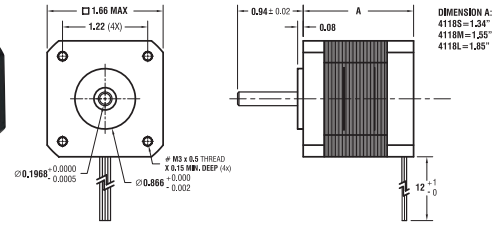


4209 Series Dimensions

**NEMA SIZE 17 HIGH TORQUE STEP MOTORS (CONT.)**



4118 Series



4118 Series Dimensions

- 0.9° or 1.8° step resolution available
- 1.66" square
- Up to 44.4 oz-in holding torque (4209 series); (83 oz-in for 4118 series)
- Applications include automation, packaging equipment, medical equipment and surveillance cameras

Torque curves for individual motors available at [www.newark.com](http://www.newark.com).

**0.9° STEP RESOLUTION SUPER TORQUE STEP MOTORS**

Mfg. Part No.	Dim A. (in.)	Amp/Phase	Torque (oz.-in.)	Inertia (oz.-in. <sup>2</sup> )	No. of Leads	Stock No.	Price Each
● 4209S-04R0	1.3	1.5	29.3	0.192	4	16M4201	66.78
● 4209M-01PRO	1.5	1.7	51.66	0.296	4	16M4200	75.17
● 4209L-04R0	1.85	2.2	68	0.372	4	16M4199	88.13

**1.8° STEP RESOLUTION HIGH TORQUE STEP MOTORS**

Mfg. Part No.	Dim A. (in.)	Amp/Phase	Torque (oz.-in.)	Inertia (oz.-in. <sup>2</sup> )	No. of Leads	Stock No.	Price Each
● 4118S-02R0	1.34	1.3	42.7	0.18	4	16M4198	55.65
● 4118M-01R0	1.55	1.7	61.4	0.28	4	16M4197	58.00
● 4118L-01R0	1.85	2	86.3	0.37	4	16M4196	89.25

(84818)

**3709V SIGNATURE SERIES STEP MOTORS**

Just Added



Fig. 1



Fig. 2

- Features:
- NEMA size 14 or 17 mountings
  - Small Package
  - Cost Effective

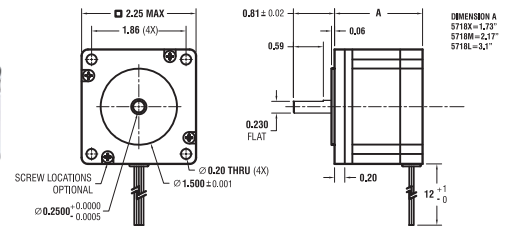
Specifications:

- Bipolar
- Resistance: 10Ω
- Inductance: 10mH
- Weight: 0.27lbs

Mfg. Part No.	Fig.	Amp/Phase	Torque oz-in	Inertia oz-in <sup>2</sup>	No. of Leads	NEMA Size	Stock No.	Price Each
3709V-18-M1R0	1	0.6	16	0.07	4	17	10R4736	63.81
3709V-18-M4R0	2	0.6	16	0.07	4	14	10R4737	63.81

(148677)

**NEMA SIZE 23 HIGH TORQUE STEP MOTORS**



Dimensions

- 1.8° step resolution
- 2.25" square
- Up to 294 oz-in holding torque
- High torque
- High accuracy and resolution

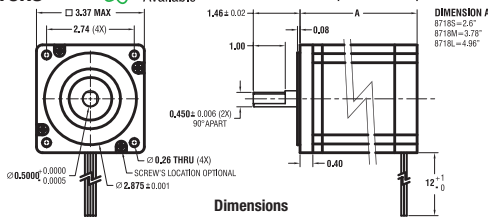
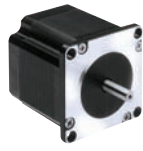
Torque curves for individual motors available at [www.newark.com](http://www.newark.com).

Mfg. Part No.	Dim A. (in.)	Amp/Phase	Torque (oz.-in.)	Inertia (oz.-in. <sup>2</sup> )	No. of Leads	Stock No.	Price Each
● 5718X-01PRO	1.73	2.8	100.8	0.7	4	16M4204	73.50
● 5718M-05PRO	2.17	2.8	182	1.5	4	16M4203	81.90
● 5718L-01PRO	3.1	2.8	294	2.6	4	16M4202	113.40

(84820)

MOTORS – STEP • RELAYS – ALTERNATING • RELAYS – TIME-DELAY

NEMA SIZE 34 HIGH TORQUE STEP MOTORS



- 1.8° step resolution
- 3.37" square
- Up to 920 oz-in torque

Torque curves for individual motors available at [www.newarkinc.com](http://www.newarkinc.com).

Mfg. Part No.	Dim A. (in.)	Amp/Phase	Torque (oz.-in.)	Inertia (oz.-in. <sup>2</sup> )	No. of Leads	Stock No.	Price Each
● 8718S-05R0	2.6	4.5	310	7.66	8	16M4207	200.00
● 8718M-16R0	3.77	4.5	615	14.8	8	16M4206	265.00
● 8718L-08R0	5	5.5	920	21.9	8	16M4205	315.00

(84821)

INERTIA DAMPERS

Just Added



Fig. 1



Fig. 2

- Features:
- Inertia damper can help reduce resonance
  - Durable
  - Can be easily mounted

- Specifications:
- Wet/Dry operation: Dry
  - Mounting: Set screws
  - Up to 10x less resonance

Mfg. Part No.	Fig.	Inertia oz-in <sup>2</sup>	Shaft Size (mm)	NEMA Size	Stock No.	Price Each
057-00006	1	0.064	5.00	17	10R4636	34.00
057-00011	2	0.360	6.35	23	10R4637	25.00

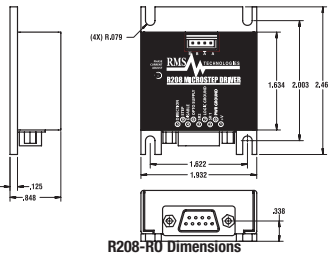
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MICROSTEPPING DRIVERS

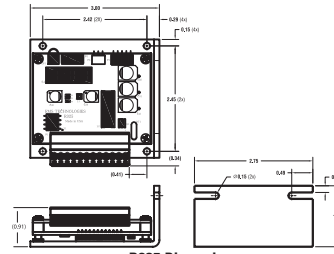
Just Added



R208-RO



R325



R356

R325 is rated the smoothest microstepping driver in the industry due to its ability to hold position over the zero-crossing point regardless of which motor is being used. Output currents from 0.3 to 3A peak. Input voltage: 12-48VDC. Step resolutions from 200, 400, 800, 1600, 3200, 6400, 12800, 25600, and 51200. Able to change microstepping currents and run and hold currents via DIP switches or RS-485 communication. Contains three optically isolated inputs and one optically isolated control input that can be used for step, direction, disable/enable, and fault detection.

R208-RO features automatic current reduction. Provides up to 2A peak of phase current to any bipolar step motor. Microstepping resolution from 200, 400, 800, 1600 steps per revolution. Utilizes a 12-24VDC power supply to produce constant sinusoidal current waveforms.

Mfg. Part No.	Supply Voltage (VDC)		Drive Current Per Phase (A)		Isolated Inputs	Step Frequency Max.	Steps Per Revolution	Stock No.	Price Each
	Min.	Max.	Min.	Max.					
● R208-RO*	12	24	0.35	2	Step, Direction, Enable, and Disable	25kHz	200, 400, 800, 1600	16M4189	89.95
R325	15	48	0.3	3	Step, Direction, Enable, and Disable	2.5MHz	200, 400, 800, 1600, 3200, 6400, 12800, 25600, 51200	30K6249	197.00
R356-RO	12	40	0.3	3	Step, Direction, Enable, and Disable	2.5GHz	200, 400, 800, 1600, 3200, 6400, 12800, 25600, 51200	39P9296	249.00

\* Min. Drive Current is measured in (A<sub>rms</sub>)

ACCESSORY

Mfg. Part No.	Description	Stock No.	Price Each
USB485	USB to RS-485 Converter Card	78M6647	89.00

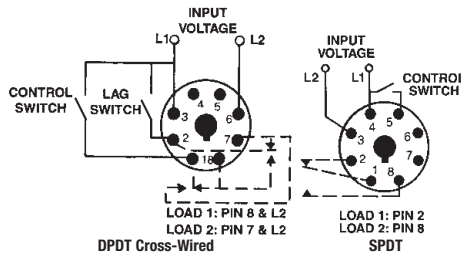
(84922)

ALTERNATING RELAYS



MACROMATIC

LOW-AMP TIME-DELAY RELAYS



Used for systems requiring equal run time of two loads. DPDT cross-wired output allows either alternating loads or simultaneous operation of both loads. Selector switch electrically locks in one sequence. Two LEDs indicate relay status. Output: SPDT or DPDT cross-wired 10A resistive at 240VAC/30VDC, 1/2hp at 240VAC. Response time: 50ms. Temperature: -28°C to 65°C (-20°F to 150°F). Power required: 3VA. Dimensions: 3.1" H x 1.7" D x 2.4" W. UL recognized, CSA certified. UL listed when used with macromatic sockets. Order 8-pin octal sockets separately on page 1963

- Max. carry current: 1A @30VAC, 1/2A @ 115VAC
- Max. switching power: 30W, 50VA
- Max. switching voltage: 60VDC, 125VAC
- Max. switching current: 1A DC, AC

XC in mfg. part number indicates .250" terminals; SC in type number indicates screw terminals. All are 1-120 sec. delay. Other time delays and voltages available; go online or call. UL recognized, CSA certified.

DELAY-ON-MAKE

Mfg. Part No.	Contacts	Delay Time (sec)	Control Voltage	Stock No.	Price Each	
					1-14	15-24
115AN05C	SPST-NO	0.1 - 5	115VAC	28B070	29.22	28.62
115AN0.1-60C	SPST-NO	0.1 - 60	115VAC	28B011	29.22	28.62
12DNO.1-60C	SPST-NO	0.1 - 60	12VDC	28B548	29.22	28.62

DELAY-ON-BREAK

12DC.1-60C	SPST-NC	0.1 - 60	12VDC	93F4621	29.22	28.62
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DELAY-ON-RELEASE

12DNOR1-120XC	SPST-NO	1 - 120	12VDC	95F1561	31.15	30.51
12DSPDTR1-120XC	SPDT	1 - 120	12VDC	95F1564	35.01	34.29
12DSPDTR1-120SC	SPDT	1 - 120	12VDC	95F1565	36.94	36.18
24DSPDTR1-120XC	SPDT	1 - 120	24VDC	95F1570	35.01	34.29
24DSPDTR1-120SC	SPDT	1 - 120	24VDC	95F1571	36.94	36.18

(3983)

Mfg. Part No.	Contacts	Control Voltage (VAC)	Stock No.	Price Each		
				1-14	15-24	25-49
● ARP120AGR	SPDT	120	04M5444	60.12	55.63	50.45
● ARP120A3R	DPDT	120	04M5443	61.95	57.32	51.98

(4087)

**CI SERIES INTERVAL-ON TIME-DELAY RELAYS**

Interval-on relays feature 10A relay output with DPDT contacts. Knob-adjustable or fixed timing selection. 8-pin octal style plug, white plastic case. Dimensions: 2.625L x 1.750W x 2.375" H. Operating temperature range: -45°C to +70°C. Mfg. part no. prefix denotes input voltage. Other time delays and voltages available; *go online or call*. Spade terminal style available; *go online or call*. UL recognized, CSA certified



**DOD SERIES DELAY-ON-DROPOUT TIME-DELAY RELAYS**

DOD series time-delay relays feature solid-state analog circuitry and true delay-on dropout with 8-pin base. Contacts are gold clad silver alloy, arranged 2 form C (DPDT) and are rated 1000VA, 90W maximum switching power, 250VAC, 48VDC maximum switching voltage and 4 amperes maximum switching current. Power requirements: AC units—2VA or less; DC units—2 watts or less. Mfg. part no. prefix denotes input voltage. 11-pin spade terminal style available. Other time-delays and voltages available; *go online or call*. UL recognized, CSA certified.



Mfg. Part No.	Delay (sec.)	Stock No.	Price Each			
			1-9	10-24	25-49	50-99
120AP.1-60CI	.1-60	95F1588	65.39	63.78	61.53	59.91
12DP.1-60CI	.1-60	95F1590	65.39	63.78	61.53	59.91
24DP.1-60CI	.1-60	95F1592	65.39	63.78	61.53	59.91

(3984)

Mfg. Part No.	Delay Time (sec.)	Stock No.	Price Each			
			1-14	15-24	25-49	50-99
24D1.2-120SDOD	1.2-120	52F042	86.42	81.14	77.49	73.84
120A.1-10SDOD	.1-10	52F054	86.42	81.14	77.49	73.84

(4077)

**ADOD SERIES AUTOMOTIVE DELAY-ON-DROPOUT TIMERS**

**Features:**

- Solid state digital circuitry
- Automotive voltage range
- Delay-on-dropout function
- Compact size

**Specifications:**

- Input voltage: 12VDC
- Load current: 40A
- Circuitry: SPST-NO
- Operating temperature: -40°C to 70°C
- Dimensions (in): 2 x 2 x 1 1/2

NEW TECHNOLOGY



**SEQ SERIES SEQUENTIAL RECYCLING RELAYS**

Just Added

**Features:**

- 100% solid state
- Two to four individual load circuits
- Fixed and user adjustable timing
- Timing from milliseconds to minutes
- OEM customization

**Specifications:**

- Load current: 5A
- Power requirement: 3W
- Operating temperature: -30°C to 70°C
- Triac or MOSFET solid-state device
- Voltage drop: 1.75Vrms
- Dimensions (in): 2.5 x 2.5 x 0.75



Mfg. Part No.	Control Voltage (VDC)	Fixed Time Delay	Stock No.	Price Each
				1-4
12D45MADOD	12	45min	66K9750	118.83
12D60MADOD	12	60min	10R1574	62.35
12D2HADOD	12	2h	54M6027	118.83

(148675)

Mfg. Part No.	Control Voltage (VDC)	Adjustment Range	Stock No.	Price Each
				1-4
12D1-32MSEQ	12VDC	1min to 32min	10R1572	75.23
12D1-32SSEQ	12VDC	1s to 32s	10R1573	75.23
24D1-32MSEQ	24VDC	1min to 32min	10R1577	75.23
24D1-32SSEQ	24VDC	1s to 32s	10R1578	75.23
120A1-32MSEQ	120VAC	1min to 32min	10R1575	75.23
120A1-32SSEQ	120VAC	1s to 32s	10R1576	75.23

(139125)

**DC10 TIME-DELAY RELAYS**

- CMOS digital TDR's have an 8-pin octal base
- Rated 10A@240VAC; 15A @ 30VDC
- Contacts: DPDT
- Dimensions: 2 5/8L x 1 3/4W x 2 3/8" H
- Temperature range: -45° to +70° C.
- Mfg. part no. prefix denotes input voltage



11-pin spade terminal style available. Other time delays and voltages available; *go online or call*. UL recognized, CSA certified.

**DC10 SERIES DELAY-ON-OPERATE w/8-PIN BASE**

Mfg. Part No.	Delay (Seconds)	Stock No.	Price Each			
			1-14	15-24	25-49	50-99
24AP.1-6SDC	0.1-6	95F1615	67.34	62.57	60.35	57.81
120AP.1-6SDC	0.1-6	95F1618	67.34	62.57	60.35	57.81
120AP1-60SDC	1-60	95F1619	67.34	62.57	60.35	57.81
120AP5-300SDC	5-300	95F1620	67.34	62.57	60.35	57.81
12DP.1-6SDC	0.1-6	95F1621	67.34	62.57	60.35	57.81
12DP1-60SDC	1-60	95F1622	67.34	62.57	60.35	57.81
24DP.1-6SDC	0.1-6	95F1624	67.34	62.57	60.35	57.81

**SOCKETS**

Mfg. Part No.	Pins	Stock No.	Price Each			
			1-14	15-24	25-49	50-99
8-PIN-SM	8	66F4140	8.59	7.98	7.70	7.38
11-PIN-SM	11	66F6769	16.29	15.13	14.60	13.98

(3986)

**ST1D SERIES SOLID-STATE TIME-DELAY RELAYS**

- 100% solid-state circuitry - no moving parts
- CMOS digital circuitry
- Adjustable delay by means of a 10 position DIP switch
- 3A continuous load current (10A available; *go online or call*)
- Contact arrangement: SPST-NO

Maximum inrush: 20A. Voltage drop: 2.5V RMS or less @ 3A (10A load current available; *go online or call*). Maximum current rating for 110VDC is 2A (heat sink required). Timing adjustment by means of a 10 position DIP switch encoded in binary format (1, 2, 4, 8, etc.). Outline dimension: 2.00H x 2.00W x 0.75D inches. Voltage rating: 12-120V AC/DC.



Mfg. Part No.	Input Voltage	Delay (sec.)	Stock No.	Price Each			
				1-9	10-24	25-49	50-99
12D.2-102.3SST1D	12VDC	0.2 to 102.3	29K8889	59.65	58.28	56.37	54.45
12D1-1023SST1D	12VDC	1 to 1023	29K8892	59.65	58.28	56.37	54.45
24D.2-102.3SST1D	24VDC	0.2 to 102.3	29K8895	59.65	58.28	56.37	54.45
24D1-1023SST1D	24VDC	1 to 1023	29K8898	59.65	58.28	56.37	54.45
120A.2-102.3SST1D	120VAC	0.2 to 102.3	29K8893	59.65	58.28	56.37	54.45
120A1-1023SST1D	120VAC	1 to 1023	29K8894	59.65	58.28	56.37	54.45

(84687)



**Current Order Status & History**

Check the status of your current order or access past orders from our website under MY ACCOUNT eSuite. Log in or register today.

(148881)

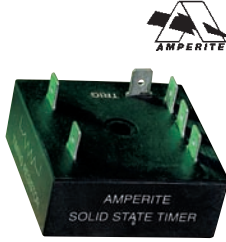


RELAYS – TIME-DELAY

STB SERIES SOLID-STATE TRIGGERED DELAY-ON-RELEASE TIMERS

- 100% solid-state circuitry
- CMOS digital timing circuitry
- Fixed- or field- adjustable delays from milliseconds to hours
- 2A continuous load current

Solid-state triggered delay-on-release timers are solid state switching devices with SPST; normally-open series connection. Epoxy-sealed, center mount, black plastic 2 x 2 x 3/4" enclosure, 4 or 6 1/4" quick-connect male terminals. Continuous current rating: 2A. Maximum inrush: 20A. Voltage drop: 2.5Vrms or less @ 2A. Timing: factory-fixed, or adjustable with range from milliseconds to hours. Other voltages and timing and custom voltages also available; go online or call.

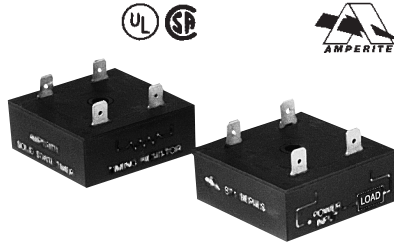


Mfg. Part No.	Delay (Sec.)	Input Voltage	Stock No.	Price Each			
				1-14	15-24	25-49	50-99
120A1-100SSTB	1-100	120VAC	16C1881	35.25	34.49	33.55	32.41
12D1-100SSTB	1-100	12VDC	28B692	35.25	34.49	33.55	32.41
24D.1-10SSTB	0.1-10	24VDC	16C1883	35.25	34.49	33.55	32.41
24D1-100SSTB	1-100	24VDC	98B9254	35.25	34.49	33.55	32.41

(55271)

ST1 SERIES SOLID-STATE DELAY-ON-MAKE TIMERS

100% solid-state circuitry - no moving parts. SPST contact arrangement. Two terminal series connections to load. Fixed or field adjustable delays from milliseconds to hours. Up to 1A continuous load current. CMOS digital circuitry. Applications include blower motors, compressors, burglar and intrusion alarms, ovens, and cooling fans. UL listed, CSA certified.



Mfg. Part No.	Input Voltage	Delay Secs./Min.	Stock No.	Price Each			
				1-9	10-24	25-49	50-99
120A.1-10MST1	120VAC	.1-10 Min.	93B0635	31.46	30.68	29.74	28.65
120A.1-10SST1	120VAC	.1-10 Sec.	93B0651	31.46	30.68	29.74	28.65
120A1-100MST1	120VAC	1-100 Min.	91B8267	31.46	30.68	29.74	28.65
120A1-100SST1	120VAC	1-100 Sec.	28B910	31.46	30.68	29.74	28.65
12D.1-10SST1	12VDC	.1-10 Sec.	28B466	31.46	30.68	29.74	28.65
24D.1-10SST1	24VDC	.1-10 Sec.	93B0659	31.46	30.68	29.74	28.65
12D1-100SST1	12VDC	1-100 Sec.	28B693	31.46	30.68	29.74	28.65
24D1-100SST1	24VDC	1-100 Sec.	28B1295	31.46	30.68	29.74	28.65

(47176)

ST1A AND SST1 SERIES SOLID-STATE DELAY-ON-MAKE TIMERS



ST1A

SST1 Adjustable

- 100% solid-state circuitry—no moving parts
- CMOS digital timing circuitry
- SPST-NO contacts
- 2 x 2 x 3/4" black plastic epoxy sealed enclosure

Maximum inrush: 20A. Voltage drop: 2.5Vrms or less @ 2A (10A load current available, go online or call). Maximum current rating for 110VDC is 2A (heat sink required).

ST1A SERIES TIME-DELAY RELAYS

Mfg. Part No.	Voltage	Delay	Stock No.	Price Each			
				1-4	5-9	10-24	25+
120A1-100SST1A	120VAC	1 sec. to 100 sec.	73C0546	36.67	34.91	32.82	31.06
12D.2-20SST1A	12VDC	0.2 sec. to 20 sec.	98H1016	36.67	34.91	32.82	31.06
24D.2-20SST1A	24VDC	0.2 sec. to 20 sec.	98H1019	36.67	34.91	32.82	31.06
120A.2-20SST1A	120VAC	0.2 sec. to 20 sec.	98H1017	36.67	34.91	32.82	31.06
120A1-100MST1A	120VAC	1 to 100 min.	98H1018	36.67	34.91	32.82	31.06

SST1 SERIES ADJUSTABLE TIME-DELAY RELAYS

Mfg. Part No.	Voltage	Delay	Stock No.	1-4	5-9	10-24	25+
SST1-1A288AD01	19-288 VAC/VDC	0.1 to 8 min.	29K8888	22.01	20.95	19.70	18.65

(78743)

SWDC SERIES DELAY-ON-MAKE TIMERS

Widely specified for use in power supply sequencing as well as in industrial and process control equipment. Ideally suited for any application where specific operations need be delayed or sustained for precise intervals. Feature 3 standard timing ranges that each covers a 1023:1 span, +/- 1% repeatability and rated 10A at 240VAC (resistive). Relay operating temperature range: -45°C to +70°C. Contact arrangement is DPDT, with 8-pin octal plug-in base. 11-pin spade terminals style available; go online or call.



Mfg. Part No.	Input Voltage	Delay (secs.)	Stock No.	Price Each			
				1-9	10-24	25-49	50-99
12D1-1023SSWDC	12VDC	1-1023	28B695	62.96	61.46	59.36	57.87
120A.1-1023SSWDC	120VAC	.1-102	28B826	62.96	61.46	59.36	57.87
120A1-1023SSWDC	120VAC	1-1023	28B911	62.96	61.46	59.36	57.87
12D.1-102SSWDC	12VDC	.1-102	28B467	62.96	61.46	59.36	57.87
24D.1-102SSWDC	24VDC	.1-102	28B1162	62.96	61.46	59.36	57.87
24D1-1023SSWDC	24VDC	1-1023	28B1297	62.96	61.46	59.36	57.87

(47177)

DIN MOUNT AND OCTAL PLUG-IN TIME-DELAY RELAYS

- Contact arrangement: SPDT
- Contact rating (resistive): 8A 250VAC, 8A 30VDC
- Solid-state CMOS digital circuitry
- Delay-on-operate timing mode
- 2 LED indicators: power on and output relay energized



Octal Plug-In

DIN Mount

The SWRDC has 16 overlapping timing ranges covering 0.10 seconds to 120 minutes. Timing is user selectable by means of a 16 position rotary switch and potentiometer allowing the time delay within the range to set precisely. M36 DIN rail mounting 22.5mm wide. Max. switching power: 2000VA, 240W, 0.5HP 250VAC. Termination: 8 wire receptacle type screw terminals, 14-26 AWG. Temperature range: -40°C to +85°C. Dimensions: DIN rail 3.60H x 0.90W x 2.10D", octal 2.86H x 2.4W x 1.76D".

Mfg. Part No.	Input Voltage (VDC)	Mounting Type	Stock No.	Price Each			
				1-9	10-24	25-49	50-99
12DSWRDC	12	Octal Plug In	29K8890	98.34	96.09	92.93	89.77
12DSWRDC-DIN	12	DIN Rail	29K8891	98.34	96.09	92.93	89.77
24DSWRDC	24	Octal Plug In	29K8896	98.34	96.09	92.93	89.77
24DSWRDC-DIN	24	DIN Rail	29K8897	98.34	96.09	92.93	89.77

(84688)

GLASS TUBE TIME-DELAY RELAYS

Standard octal or miniature 9-pin relays. Power consumption is 2.3 watts. Temperature operating range -55°C to +80°C. Contact rating: 3 amps @ 115VAC. Relays listed have a voltage of 115VAC/DC. UL recognized. Other time-delays and voltages are available; go online or call. Mfg. part no. Octal (chassis mount) and mfg. part no. 8-Pin SM (surface mount) sockets are available; go online or call. Mfg. part no. 9-Pin-SM (chassis mount) and mfg. part no. 9-Pin PC (PC mount) sockets are available; go online or call.



Mfg. Part No.	Contacts	Delay Time (sec)	Stock No.	Price Each			
				1-9	10-24	25-49	50-99
115N02	SPST-NO	1 - 2	28B254	152.62	148.77	144.91	141.06
115N05	SPST-NO	1 - 5	28B330	152.62	148.77	144.91	141.06
115N010	SPST-NO	1 - 10	28B208	152.62	148.77	144.91	141.06
115N015	SPST-NO	1 - 15	28B229	152.62	148.77	144.91	141.06
115N020	SPST-NO	1 - 20	28B264	152.62	148.77	144.91	141.06
115N020T	SPST-NO	1 - 20	28B271	152.62	148.77	144.91	141.06
115N030	SPST-NO	1 - 30	28B290	152.62	148.77	144.91	141.06
115N060	SPST-NO	1 - 60	28B345	152.62	148.77	144.91	141.06
115N060T	SPST-NO	1 - 60	28B349	152.62	148.77	144.91	141.06
115N0120	SPST-NO	1 - 120	28B224	152.62	148.77	144.91	141.06
115C2	SPST-NC	1 - 2	24F2342	152.62	148.77	144.91	141.06
115C2T	SPST-NC	1 - 2	24F2403	145.36	141.69	138.01	134.34
115C5	SPST-NC	1 - 5	24F2344	152.62	148.77	144.91	141.06
115C10	SPST-NC	1 - 10	24F2345	152.62	148.77	144.91	141.06
115C30	SPST-NC	1 - 30	24F2348	152.62	148.77	144.91	141.06
115C60	SPST-NC	1 - 60	24F2350	152.62	148.77	144.91	141.06
115C180	SPST-NC	1 - 180	24F2355	152.62	148.77	144.91	141.06

(4070)

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RELAYS – TIME-DELAY

4950 SERIES 7-DAY PROGRAMMABLE CONTROLLERS



4950PC



4950H

Mfg. part no. 4950 programmable 7-day controllers operating on 115/230VAC turn on and off 2 separate power relays on a 7-day, 24-hour basis for up to 56 times per week, with a maximum of 8 events per day. EEPROM program memory maintains the programmed schedule for up to 10 days without battery backup. Mfg. part no. 4950PC is an open printed circuit board with two SPDT sets of 15 amp contact. Mfg. part no. 4950B is a bell controller for factories and schools which features "on" time settable in seconds. Mfg. part no. 4950H is housed in a metal enclosure with 2 knockout holes for wiring. 2 SPDT sets of contacts rated for 20 amperes with keypad for programming and a red LED to display time of day. Mfg. part no. 4950PM can be front panel-mounted. Time of day maintained in a smart timepiece circuit that keeps time running for up to 5 days during a power failure without the use of external batteries. Other voltages available; go online or call.

Mfg. Part No.	Description	Stock No.	Price Each
4950PC	Open Printed Circuit Board	05H8319	198.99
4950B-115	Bell Controller for Factories and Schools	14M6770	568.95
4950H-115VAC	Housed in a Metal Enclosure w/ 2 Knockout Holes for Wiring	14M6771	528.09

(2839)

438 SERIES UNIVERSAL TIME CAPSULES



Fig. 1

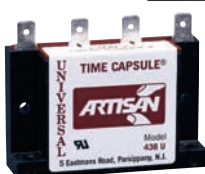


Fig. 2



Fig. 3



Fig. 4

438 series "Universal Voltage" in-line solid-state timers for delay-on-make and interval control of load devices such as motors, relays, solenoids up to 1A max. Mfg. part nos. 438USA, 438USA-4, 438U and 438UP operate from 19-288VAC/VDC. Mfg. part no. 438USA-1 operates from 18-50VAC/VDC. Mfg. part no. 438USA-3 operates from 100-288VAC/VDC, and the Mfg. part no. 438USA-INT interval timer operates from 24-240VAC. Operating temperature range: -20°C to +85°C. Mfg. type no. 438U is adjustable by putting a resistor across middle two terminals - 10K/second. Mfg. part nos. 438USA, 438USA-, -3, -4 and 438USA-INT are DIP switch adjustable. Mfg. part no. 438UP has an adjustable potentiometer. Mfg. part nos. 438USA, 438U and 438UP UL/cUL recognized.

Mfg. Part No.	Fig.	Time Range	Stock No.	Price Each	
				1-4	5-9
438USA	1	1 to 1024 sec	93K7646	39.08	36.96
438USA-1	1	0.1 to 102.4 sec	96B3851	33.27	32.92
438USA-3	1	0.1 to 102.4 sec	86K9983	32.31	31.95
438USA-4	1	2 to 2048 sec	88K1409	31.33	30.98
438U	2	1 to 1000 sec	88K2159	37.74	35.70
438A-115-1	2	0.1 to 30 sec	14M6762	38.24	37.70
438-USA-INT	4	1 to 1024 sec	93K7645	40.80	40.34

(2887)

MULTI-FUNCTION AND MULTI-RANGE TIMERS



DIN Rail



Plug-In

- Universal 24-240VAC/DC Supply Voltage
- 100mS to 100 hour range, split into several sub-ranges
- Each timer has multiple switch selectable delay functions
- 8A SPDT output
- For DIN-rail or 11-pin socket mounting

8A output. Universal power supply: 24VDC and 24-240VAC (DBB, PBB and all DPDT types can be powered by 24-240VAC/DC). Two LED indicators: output on and supply voltage applied. Multi-function models have 7 timing modes: delay-on-operate (on-delay), delay-on-release (off-delay), 3 interval modes and 2 symmetrical (repeat cycle) modes. The asymmetrical model (repeat cycle) has two separately adjustable timed outputs, one for on-time and one for off-time. Except where noted, timing range is 0.1 sec to 100 hrs. Dimensions in inches: DIN rail models: 3.6H x 0.9W x 3.7D; Plug-In models: 3.2H x 1.4W x 3.7D. Repeat accuracy: ≥0.2%. UL recognized, CSA certified, CE compliant.

Mfg. Part No.	Function	Mounting	Contacts	Stock No.	Price Each	
					1-5	6-14
DAA01CM24	On-Delay	DIN Rail	SPDT	05M4076	71.43	67.20
DAA01DM24	On-Delay	DIN Rail	DPDT	05M4077	90.40	85.05
DBB01CM24	True Off-Delay	DIN Rail	SPDT	05M4079	106.02	99.75
DBB01DM24	True Off-Delay	DIN Rail	DPDT	05M4080	121.65	114.45
DCB01DM24	Asymmetrical	DIN Rail	DPDT	05M4083	163.97	154.28
DMB01DM24	Asymmetrical	DIN Rail	DPDT	05M4091	110.49	103.95
PAA01CM24	On-Delay	11-Pin Plug-In	SPDT	05M4246	78.12	73.50
PAA01DM24	On-Delay	11-Pin Plug-In	DPDT	05M4247	90.40	85.05
PCB01DM24	Asymmetrical	11-Pin Plug-In	DPDT	93C3438	152.43	143.42
PMB01DM24	Multi-Function	11-Pin Plug-In	DPDT	05M4256	110.49	103.95

(90586)

PUMP SEAL FAILURE RELAYS

Just Added



MACROMATIC



- Sensitivity range: 4.7-100kΩ
- Monitors submersible pump seals for leakage
- Single or dual channel for monitoring 1 or 2 pumps
- Three adjustable sensitivity ranges
- Optional fixed sensitivity setting available
- Optional low-profile adjustment knob

Output: SFP120A100: DPDT 3A at 240VAC/30VDC, SFP120C100: (2)SPNO 5A at 240VAC/30VDC. Temperature: -28°C to +65°C. Dimensions [in (mm)]: 1.9x2.4x2.9 (48x60x74).

Mfg. Part No.	Function	Socket	Stock No.	Price Each	
				1-14	15-24
SFP120A100	Single Channel	70169-D	46P3260	70.09	66.96
SFP120C100	Dual Channel	70169-D	46P3261	85.66	81.84

(142120)

ANALOG SET MULTI-FUNCTION TIME DELAY RELAYS



Just Added

MACROMATIC



Fig. 1



Fig. 2

- 6 field-selectable functions in one unit
- Large dial for setting of time delay
- 50ms to 100 Hours programmable timing range
- Universal 24-240V AC/DC input voltage
- Panel, track or surface mounting
- 1/2 DIN style case (comes with panel-mounting adapter)

Output: DPDT 3A at 240VAC/DC, Temperature: -28°C to +65°C. Dimensions in (mm): 1.9"x2.4"x2.9" (48x60x74).

➔ CONTINUED ➔



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(148830)



RELAYS – TIME-DELAY

ANALOG SET MULTI-FUNCTION TIME DELAY RELAYS (CONT.)

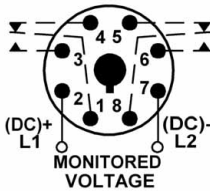
Mfg. Part No.	Fig.	Function	Socket	Stock No.	Price Each	
					1-14	15-24
● TAA1U	1	On Delay, Delayed Interval/Pulse, On Delay-Timed & Instantaneous, Flasher (OFF 1st), Flasher (ON 1st) & Interval On-Timed & Instantaneous	SR6P-M08G	46P3262	42.82	41.03
● TAA2U	2	On Delay-Triggered, Off Delay, On/Off Delay, Flasher (OFF 1st)-Triggered, Flasher (ON 1st)-Triggered & Watchdog	SR6P-M11G	46P3263	46.16	44.23

(142119)

DIGITAL-SET MULTI-FUNCTION TIME DELAY RELAYS



MACROMATIC



- 16 Function in One Unit
- DIP Switches for Digital-Set of Time Delay & Function Selection
- 0.1 sec. - 1023 Hours Timing Range

Output: DPDT 10A @ 240VAC/30VDC, Temperature: -28°C to +65°C. Dimensions: 1.7" x 2.4" x 3.0".

Mfg. Part No.	Control Voltage	Socket	Stock No.	Price Each	
				1-14	15-24
● TD-88122	120VAC/VDC	70169-D	01N5001	96.93	92.48
● TD-88128	120VAC/VDC	70169-D	01N5002	96.93	92.48

(144884)

TIME RANGER™ PROGRAMMABLE TIME-DELAY RELAYS



MACROMATIC



Single Time



Dual Time

- 16 timing ranges in a single time-delay relay
- User selects desired range by setting a rotary switch, no math required or DIP switches to set
- Adjust within selected range using potentiometer
- Covers 0.1S-2H (0.6S-24H on TR-631, TR-651 and TR-661 units)
- Repeat cycle and delayed interval units have independently selectable and adjustable ON and OFF times

Output: DPDT 10A resistive 240VAC/28VDC, 1/2hp @ 240VAC. Repeat accuracy: ±0.1%. Temperature: -28° to 65°C (-20° to 150°F). Power required: 3VA. Dimensions: 3.5" H x 1.7" D x 2.4" W. Order 8-pin and 11-pin sockets separately on page 1963

ON-DELAY (8-Pin)

Upon application of input voltage, a preset time begins. At the end of the preset time, the relay contacts transfer. Input voltage must be removed and reapplied to reset the time delay relay.

Mfg. Part No.	Control Voltage	Socket	Stock No.	Price Each		
				1-14	15-24	25-49
● TR-60222	120VAC/DC	70169-D	04M6606	58.94	56.25	54.09
● TR-60221	240VAC	70169-D	28B4847	78.02	74.46	71.61
● TR-60228	24VAC/DC	70169-D	04M6608	58.94	56.25	54.09
● TR-60226	12VAC/DC	70169-D	04M6607	58.94	56.25	54.09

INTERVAL-ON (8-Pin)

Upon application of input voltage, the relay contacts transfer and a preset time begins. At the end of the preset time, the contacts return to their normal condition. Input voltage must be removed and reapplied to reset the time delay relay.

● TR-60522	120VAC/DC	70169-D	04M6609	62.53	59.67	57.39
● TR-60528	24VAC/DC	70169-D	04M6610	62.53	59.67	57.39

OFF-DELAY (11-Pin)

Input voltage must first be applied. Upon closure of the control switch, the relay contacts transfer and hold. Upon opening of the control switch, a preset time begins. At the end of the preset time, the relay contacts will return to their normal condition. Any application of the control switch will reset the time. The time delay relay is reset by closing the control switch.

● TR-61622	120VAC/DC	70170-D	04M6614	63.73	60.71	58.59
● TR-61628	24VAC/DC	70170-D	04M6615	63.73	60.71	58.59
● TR-61621	240VAC	70170-D	28B4859	68.68	65.43	63.15

▶ CONTINUED ▶

TIME RANGER™ PROGRAMMABLE TIME-DELAY RELAYS (CONT.)

Mfg. Part No.	Control Voltage	Socket	Stock No.	Price Each		
				1-14	15-24	25-49
Action. Same as 616 series.						
● TR-61922	120VAC/DC	70170-D	04M6617	67.69	64.48	62.24
● TR-61928	24VAC/DC	70170-D	04M6618	67.69	64.48	62.24

MOMENTARY INTERVAL – SINGLE SHOT (11-Pin)

Input voltage must first be applied. Upon closure of the control switch, the relay contacts transfer and the preset time begins. During the time-out, the trigger input is ignored. The time delay relay is reset by applying the trigger when the relay is not energized.

● TR-61522	120VAC/DC	70170-D	04M6611	63.73	60.71	58.59
● TR-61528	24VAC/DC	70170-D	04M6613	63.73	60.71	58.59

WATCHDOG – POWER TRIGGER (11-Pin)

Input voltage must first be applied. Upon closure of the control switch, the relay contacts transfer and the preset time begins. At the end of the preset time, the relay contacts return to their normal condition unless the control switch is opened and closed before the preset time elapses. Continuous cycling of the trigger at a rate faster than the preset time will cause the relay contacts to remain closed.

● TR-61822	120VAC/DC	70170-D	04M6616	67.69	64.48	62.24
● TR-61828	24VAC/DC	70170-D	48F5939	67.69	64.48	62.24

TRUE OFF DELAY (8-Pin)

Upon application of input voltage, the relay is energized. When the input voltage is removed, the preset time begins. At the end of the preset time, the relay is de-energized. No external trigger switch is required.

● TR-60622	120 VAC/VDC	70169-D	01N5003	84.32	80.47	77.39
● TR-60628	24 VAC/VDC	70169-D	01N5004	84.32	80.47	77.39

REPEAT CYCLE – OFF FIRST (8-Pin)

Upon application of input voltage, OFF time begins. When the OFF time is completed, the ON time begins. The sequence repeats until the input voltage is removed. The OFF time and ON time are independently adjustable.

● TR-63122	120VAC/DC	70169-D	04M6619	78.35	74.64	72.04
● TR-63128	24VAC/DC	70169-D	04M6620	78.35	74.64	72.04

REPEAT CYCLE-ON FIRST (8-Pin)

Upon application of input voltage, ON time begins. When the ON time is completed, the OFF time begins. The sequence repeats until the input voltage is removed. The ON time and OFF time are independently adjustable.

● TR-65122	120VAC/DC	70169-D	04M6621	78.35	74.64	72.04
● TR-65128	24VAC/DC	70169-D	04M6622	76.68	73.05	70.50

DELAYED INTERVAL (8-Pin)

Upon application of input voltage, OFF time begins. When the OFF time is completed, the ON time begins. When ON time is completed, sequence stops. Input voltage must be removed and reapplied to initiate action again. The ON time and OFF time are independently adjustable.

● TR-66122	120VAC/DC	70169-D	04M6623	76.47	72.84	70.31
● TR-66128	24VAC/DC	70169-D	04M6624	76.68	73.05	70.50

(47371)

NON-PROGRAMMABLE PLUG-IN TIME DELAY RELAYS



MACROMATIC



- 10A DPDT @ 240VAC/28VDC output contacts
- Utilizes industry-standard 8-pin or 11-pin octal socket
- Pin-for-pin interchangeable with most plug-in time-delay relays
- Input voltages up to 120V are dual-rated AC & DC

Dimensions: 2.4"W x 1.7"D x 3.5"H. Mechanical life: 10,000,000 operations. Full load life: 100,000 operations. Operating temperature: -28°C to 65°C.

Mfg. Part No.	Timing Function	Control Voltage AC/DC	Time Range (Sec.)	Termination	Stock No.	Price Each	
						1-14	15-24
● TR-50222-05	On-Delay	120	0.1-10	8-Pin Octal	48F5942	41.07	38.83
● TR-50222-22	On-Delay	120	6-10*	8-Pin Octal	28B3492	41.07	38.83
● TR-50228-05	On-Delay	24	0.1-10	8-Pin Octal	10M5265	41.07	38.83
● TR-50228-22	On-Delay	24	0.1-10*	8-Pin Octal	28B3536	40.14	37.94
● TR-51622-05	Off-Delay	120	0.1-10	11-Pin Octal	04M6595	44.89	42.44
● TR-51622-22	Off-Delay	120	0.1-10*	11-Pin Octal	28B4102	43.87	41.47
● TR-51628-05	Off-Delay	24	0.1-10	11-Pin Octal	04M6597	43.87	41.47
● TR-51628-22	Off-Delay	24	0.1-10*	11-Pin Octal	28B4146	43.87	41.47

\* Time Range is in minutes (84523)



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(148833)



RELAYS – TIME-DELAY

COMPACT TIME-DELAY RELAYS

Compact, economical design. Timing is adjustable with low-profile knob. Output: 5A resistive @ 120VAC/28VDC, 1/2 hp @ 120VAC. Repeatable accuracy: ±2%. Temperature: 0°C to +60°C (32°F to +140°F) Power required: 2.5VA. Dimensions: 2.4" H x 1.4" D x 1.4" W. UL listed when used with mfg. part no. 70169-D sockets. Order separately on this page.



MACROMATIC



PLUG-IN TIME-DELAY RELAYS (CONT.)

TDRS0X/SRX Relays:

- Dual function
- Octal or square base
- Removable knob prevents tampering
- Dual LEDs
- Timing range: 0.1s to 10hrs
- Dimensions: 2.73"H x 1.4"W x 1.73"L
- UL recognized file no. E43641, CE compliant

TDR782 Relays:

- Single function
- Miniature size
- Dual LEDs
- Timing range: 0.1s to 100hrs
- Dimensions: 1"L x 0.8"W x 2.44"H
- UL recognized file no. E191122, CSA certified and CE compliant

ON-DELAY PLUG-IN

Mfg. Part No.	Control Voltage	Timing Range (sec.)	Stock No.	Price Each		
				1-14	15-24	25-49
● SS-6262-04	120VAC	0.2-5	31C7984	36.13	34.43	33.25
● SS-6262-06	120VAC	0.5-15	29M7944	36.83	35.10	33.89
● SS-6262-08	120VAC	2-60	29M7945	36.83	35.10	33.89
● SS-6266-06	12VAC/DC	0.5-15	29M7946	36.83	35.10	33.89
● SS-6268-04	24VAC/DC	0.2-5	28B3393	36.13	34.43	33.25
● SS-6268-06	24VAC/DC	0.5-15	29M7948	36.13	34.43	33.25

OFF-DELAY PLUG-IN

● SS-8562-06	120VAC	0.5-15	29M7949	45.97	43.81	42.30
● SS-8562-08	120VAC	2-60	29M7950	45.10	42.98	41.50
● SS-8568-04	24VAC/DC	0.2-5	28B3438	40.22	38.33	37.01
● SS-8568-06	24VAC/DC	0.5-15	29M7951	45.07	42.95	41.47
● SS-8568-08	24VAC/DC	2-60	29M7952	45.10	42.98	41.50

(4105)

SOCKETS



MACROMATIC



8-Pin



11-Pin

Units are made for use with all Macromatic plug-in products. Sockets feature pressure wire clamps and can be either DIN track or direct panel-mounted. UL recognized, CSA certified.

Mfg. Part No.	Termination	Operating Voltage (V)	Stock No.	Price Each		
				1-14	15-24	25-49
● 70169-D	8-Pin Octal	600	04M6767	6.65	6.38	6.10
● 70170-D	11-Pin Octal	300	04M6768	11.08	10.62	10.16

SOCKET ACCESSORY

Mfg. Part No.	Description	For Use With	Stock No.	Price Each	
				1-14	15-24
● 70166	Hold-down spring	All sockets	11J2112	4.91	4.71

(4088)

PLUG-IN TIME-DELAY RELAYS

Just Added



Magnecraft

Your Contact for Industrial Relays



TDRS Relay Square Base



TDRS Relay Octal Base



TDR782 Relay

➔ CONTINUED ➔

DIGITAL-SET PROGRAMMABLE TIME-DELAY RELAYS



MACROMATIC



Top View

- TD-7 series has five functions in one unit: on delay, off delay, interval, single shot and flasher
- TD-702 (on-delay) and TD-716 (off-delay) are single function
- Pushbutton thumbwheels for digitally setting time range and function
- 0.05 second to 999 hour timing range

Output: DPDT 10A @ 240VAC/28VDC. Repeat accuracy: ±1%. Temperature range: -28° to 65°C. Dimensions in inches: 3.0" H x 1.7" D x 2.4" W. UL listed when used with manufacturer's socket. Order separately on this page.

➔ CONTINUED ➔

RELAYS – TIME-DELAY

DIGITAL-SET PROGRAMMABLE TIME-DELAY RELAYS (CONT.)

Mfg. Part No.	Control Voltage	Function	Terminal Type	Socket	Stock No.	Price Each	
						1-14	15-24
● TD-78122	120VAC/VDC	5 Functions	11-Pin Octal	70170-D	30M2626	70.71	68.34
● TD-78128	24VAC/VDC	5 Functions	11-Pin Octal	70170-D	30M8002	70.71	68.34
● TD-70222	120VAC/VDC	On-delay	8-Pin Octal	70169-D	43K4120	56.17	54.29
● TD-70228	24VAC/VDC	On-delay	8-Pin Octal	70169-D	43K4121	56.17	54.29

(78683)

MINIATURE TIME-DELAY RELAYS



- AC or DC operation
- DPDT or 4PDT contacts
- 5A @ 120VAC / 28VDC
- On delay operation (slow operate)
- Recessed screw adjustment
- Socket or PC board mounting

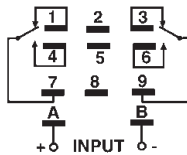


Operating temperature: -10°C to +55°C. Dimensions: 1.37L x 1.34W x 1.18"H. Plug-in style uses class 67 6-pole socket mfg. part no. 70-307 (solder terminals) or mfg. part no. 70-308 (PC board terminals); order separately. Go online or call. UL recognized File No. E43641, CSA certified. DPDT mates with socket part no. SK-REC22-PW; on page 1644 4PDT mates with socket part no. SK-REC28-PW. on page 1644

Mfg. Part No.	Timing Range (sec.)	Input Voltage	Contacts	Stock No.	Price Each			
					1-24	25-49	50-99	100-499
67CPSOX-1	0.1 - 30	12VDC	DPDT	89K1819	133.17	125.96	119.40	112.18
67CPSOX-2	0.1 - 30	24VDC	DPDT	89K1820	133.17	125.96	119.40	112.18
67CPSOX-10	0.1 - 30	12VDC	4PDT	81H2924	285.56	270.09	256.02	240.55
67CPSOX-11	1.0 - 180	120VAC	4PDT	81H2925	352.43	333.34	315.97	296.88

(4047)

CLASS 388 ADJUSTABLE TIME-DELAY RELAYS

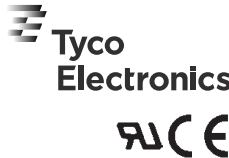


Feature ±0.1% repeatability. DPDT, 15A contacts. Field-adjustable timing and ON delay timing functions. Dimensions: 1.53L x 1.40W x 3.525"H. For use with mfg. part no. 70-463-1 socket and mfg. part no. 16-1239 spring clip, ordered separately; go online or call. UL recognized file no. E43641, CSA certified, CE compliant.

Mfg. Part No.	Timing Range	Input Voltage	Stock No.	Price Each	
				1-5	6-14
W388ACPSOX-42	0.1-10 sec.	120VAC	12F1013	167.12	155.24
W388ACPSOX-44	1-180 sec.	120VAC	12F1014	86.39	80.25

(12626)

AGASTAT INDUSTRIAL DISCRETE SOLID-STATE TIMING RELAYS



SSC series is knob adjustable and features excellent transient immunity. Repeat accuracy is better than ±1%. Power consumption: 3W. Output: DPDT relay, 10A resistive, 28VDC/120VAC; ½HP, 120/240VAC. Operating voltage: 120V 50/60Hz or 120VDC. Electrical life: 100,000 operations minimum at rated resistance load. UL recognized, CE compliant.

ON-DELAY, 10 AMP 8-PIN

Mfg. Part No.	Timing Range	Stock No.	Price Each		
			1-2	3-4	5+
SSC12AAA	0.1 to 3 sec.	50F3841	128.85	114.67	101.11
SSC12ALA	0.33 to 10 min.	50F3843	128.85	114.67	101.11

(2708)

AGASTAT INDUSTRIAL GRADE SOLID-STATE MINIATURE TIMING MODULES



VTM1

VTM2

Designed for demanding industrial applications. Repeat accuracy ±1% at constant temperature. 100,000,000 operations at rated load. VTM1/VTMA1 time-delay operation begins when operating voltage is applied. At the end of the preset time-delay, the output relay (load) is energized until operating voltage is removed. To reset, remove operating voltage. Operation for VTM2 off-delay models: operating voltage is applied continuously. The output relay (load) is energized when a normally-open control switch is closed (the load remains energized as long as the switch is closed). When the control switch is reopened, time delay begins. If the control state is reversed during time-delay period, the delay generating circuit automatically resets to zero. Dimensions: 2.00" x 2.00" x 1.25". UL recognized, CSA certified, CE compliant.

Mfg. Part No.	Time Range (sec.)	Voltage	Timing Function	Stock No.	Price Each	
					1-9	10-24
VTMA1ULA	24-480	24-240VAC/VDC	On-Delay with Integral Potentiometer	98F9869	49.14	46.86
VTM1ACD	0.5-10	120VAC/VDC	On-Delay	98F9870	36.48	34.78
VTM1EDD	3-60	24VAC/VDC	On-Delay	95F9876	41.63	36.43
VTMA1ADA	3-60	120VAC/VDC	On-Delay with Integral Potentiometer	27C8651	48.29	46.05
VTM2ADD	3-60	120VAC	Off-Delay	95F9878	43.69	41.67
VTM2ECD	0.5-10	24VAC/VDC	Off-Delay	95F9881	43.69	41.67

(4009)

AGASTAT UNIVERSAL ON-DELAY TIMING MODULES



- On-delay operating mode
- Timing from 1 to 1000 seconds
- 1A solid-state SPNO output
- Quick-connect ¼" terminals
- Universal voltage: 24 to 240VAC/DC or 12VDC available
- Rated to 10 million operations
- ±2% repeat accuracy
- Operating temperature: -22°F to +150°F (-30°C to +65°C)

Simple, encapsulated units, remarkably small in size and highly reliable. In-line timing module is wired in series with load circuit. Time delay is initiated when power is applied to the series network. Connecting a resistor across the center terminals provide tamper-proof setting of time delay from 1-1000 secs. UL recognized, CSA certified.

Mfg. Part No.	Description	Operating Voltage	Stock No.	Price Each		
				1-4	5-9	10-24
VTM-1	1-1000 Secs	24-240VAC/VDC	27C3921	142.80	130.20	118.30

(32879)

P&B 10A ON-DELAY TIME-DELAY RELAY



- DPDT contacts
- Plug-in or panel mount
- 0.1 sec to 9,990 hr. timing range
- Thumbwheel switches for programming delay time
- ½ DIN enclosure

Fixed input type (120VAC ±15%). Rated 10A @ 30VDC/277VAC resistive. UL recognized E22575, CSA certified LR15734. Dimensions: 2.83L x 1.88W x 1.88"H (71.90 x 47.80 x 47.80mm).

RELAY

Mfg. Part No.	Nominal Voltage	Power Consumption	Stock No.	Price Each		
				1-4	5-9	10-24
CN1	120VAC	3VA@120VAC	93F1050	117.41	107.62	99.35

8-PIN OCTAL SOCKETS

Mfg. Part No.	Mounting	Dimensions (in)	Stock No.	Price Each		
				1-24	25-49	50-99
● 27E122	Screw Terminal	2.385 x 1.572 x .925	57F3431	4.68	4.29	3.95
● 27E891	Screw Terminal, DIN mount	2.010 x 1.575 x .970	46F3587	5.52	5.03	4.61

ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Each
			1-24
● 24A110	DIN rail style extruded aluminum mounting rack 36" (914mm) long with holes on 6.0" (152.4mm) centers. Holes accept #8 screws.	46F3617	10.30

(2710)

**P&B 10A OUTPUT TIME-DELAY RELAYS**



Just Added



CL-41, CU-41 Plain Case



CL-42, CU-42 Bracket Mount Case



CL-51, CU-51 Plain Case w/Knob

- Contacts rated 10A
- Contact configuration: DPDT
- Power consumption: 3VA (AC relays), 3W (DC relays)
- 8-pin and 11-pin mounting configurations available

Dimensions: 2.937H x 1.781L x 2.406"W for CB, CD, CG, CH and CK models; 2.937H x 1.781L x 2.406"W for CR model; 2.156H x 1.531L x 1.406"W for CU and CL models. UL recognized, CSA certified.



CB, CD, CG, CH, CK



CR

**CMOS IC TIME-DELAY RELAY, FIXED OR KNOB ADJUSTABLE**

Mfg. Part No.	Input Voltage	Operation	Mtg.	Time Delay	Stock No.	Price Each 1-24
CB-1047D-20	12VDC	Delay-On-Make	8-pin	0.1-10 sec.	90F1212	109.54
CB-1038D-38	24VDC	Delay-On-Break	11-pin	0.1-10 sec.	90F1190	115.71
CB-1039D-38	24VDC	Delay-On-Break	11-pin	1.8-180 sec.	90F1191	106.81
CB-1046B-38	24VAC	Delay-On-Break	11-pin	1.8-180 sec.	90F1211	105.58
CB-1026D-30	24VDC	Delay-On-Make	8-pin	0.1-1 sec.	90F1207	115.71
CB-1028D-30	24VDC	Delay-On-Make	8-pin	0.1-10 sec.	44F1134	109.54
CB-1042B-30	24VAC	Delay-On-Make	8-pin	1.8-180 sec.	90F1193	115.71
CB-1041B-30	24VAC	Delay-On-Make	8-pin	0.1-10 sec.	70B1831	105.20
CB-1001B-70	120VAC	Delay-On-Make	8-pin	0.1-1 sec.	44F1128	109.54
CB-1003B-70	120VAC	Delay-On-Make	8-pin	0.1-10 sec.	44F1130	109.54
CB-1021B-78	120VAC	Delay-On-Break	11-pin	0.1-10 sec.	44F1136	110.92
CB-1022B-78	120VAC	Delay-On-Break	8-pin	0.1-10 sec.	44F1137	115.71
CB-1002B-70	120VAC	Delay-On-Make	8-pin	0.1-5 sec.	44F1129	114.79
CB-1004B-70	120VAC	Delay-On-Make	8-pin	0.6-60 sec.	44F1131	109.54
CB-1023B-78	120VAC	Delay-On-Break	11-pin	0.6-60 sec.	44F1138	97.11
CB-1006B-70	120VAC	Delay-On-Make	8-pin	0.1-10 min.	44F1133	106.81
CB-1007B-70	120VAC	Delay-On-Make	8-pin	10-100 min.	90F1195	109.54
CB-1005B-70	120VAC	Delay-On-Make	8-pin	1.8-180 sec.	44F1132	107.75
CB-1024B-78	120VAC	Delay-On-Break	11-pin	1.8-180 sec.	44F1139	115.71
CHD-38-30013	24VDC	Delay-On-Break	11-pin	1-180 sec.	24F2890	130.45
CHD-38-30001	24VDC	Delay-On-Make	8-pin	1-10 sec.	24F2885	132.29
CHD-38-30002	24VDC	Delay-On-Operate	8-pin	1-60 sec.	08H1256	143.49
CHD-38-30003	24VDC	Delay-On-Make	8-pin	1-180 sec.	24F2886	132.46
CHD-38-30021	24VDC	Interval	8-pin	1-10 sec.	67F1175	131.87
CHB-38-30001	24VAC	Delay-On-Make	8-pin	1-10 sec.	24F2881	135.83
CHB-38-30003	24VAC	Delay-On-Make	8-pin	1-180 sec.	24F2882	123.36
CHA-38-70001	120VAC	Delay-On-Make	8-pin	10 sec.	67F1138	137.79
CHB-38-70013	120VAC	Delay-On-Break	11-pin	1-180 sec.	24F2888	143.49
CHB-38-70001	120VAC	Delay-On-Make	8-pin	1-10 sec.	24F2883	123.37
CHB-38-70011	120VAC	Delay-On-Make	11-pin	1-10 sec.	24F2887	132.46
CHB-38-70003	120VAC	Delay-On-Make	8-pin	1-180 sec.	24F2884	119.38
CHB-38-70002	120VAC	Delay-On-Make	8-pin	1-60 sec.	67F1159	135.83
CHB-38-70012	120VAC	Delay-On-Break	11-pin	1-60 sec.	67F1166	143.49
CHB-38-80001	240VAC	Delay-On-Make	8-pin	1-10 sec.	67F1160	143.49
CHB-38-70021	120VAC	Interval	8-pin	1-10 sec.	67F1172	135.83
CHB-38-70022	120VAC	Interval	8-pin	1-60 sec.	67F1173	143.49
CHB-38-70023	120VAC	Interval	8-pin	1-180 sec.	67F1174	143.49

**CMOS IC TIME-DELAY RELAY, FIXED, KNOB, OR RESISTOR ADJUSTABLE, 1% REPEATABILITY**

Mfg. Part No.	Input Voltage	Operation	Mtg.	Time Delay	Stock No.	Price Each 1-24
CDD-38-30003	24VDC	Delay-On-Make	8-pin	0.1-10 sec.	24F1878	254.93
CDD-38-30014	24VDC	Delay-On-Break	11-pin	0.1-10 sec.	67F1167	254.93
CDD-38-30004	24VDC	Delay-On-Make	8-pin	0.6-60 sec.	24F1879	249.16
CDD-38-30012	24VDC	Delay-On-Break	8-pin	0.6-60 sec.	24F1888	235.31
CDD-38-30005	24VDC	Delay-On-Make	8-pin	1.8-180 sec.	24F1880	254.93
CDD-38-30008	24VDC	Delay-On-Break	8-pin	1.8-180 sec.	67F1168	200.02
CDA-38-70012	120VAC	Delay-On-Make	8-pin	1 sec.	67F1136	240.73

▶ CONTINUED ▶

**P&B 10A OUTPUT TIME-DELAY RELAYS (CONT.)**

**CMOS IC TIME-DELAY RELAY, FIXED, KNOB, OR RESISTOR ADJUSTABLE, 1% REPEATABILITY**

Mfg. Part No.	Input Voltage	Operation	Mtg.	Time Delay	Stock No.	Price Each 1-24
CDB-38-70001	120VAC	Delay-On-Make	8-pin	0.1-1 sec.	67F1156	227.30
CDB-38-70003	120VAC	Delay-On-Make	8-pin	0.1-10 sec.	24F1875	230.65
CDB-38-70014	120VAC	Delay-On-Break	11-pin	0.3-30 sec.	67F1164	219.14
CDB-38-70002	120VAC	Delay-On-Make	8-pin	0.1-5 sec.	67F1157	219.13
CDB-38-70006	120VAC	Delay-On-Make	8-pin	0.3-30 sec.	33F1664	235.31
CDB-38-70004	120VAC	Delay-On-Make	8-pin	0.6-60 sec.	24F1876	202.27
CDB-38-70012	120VAC	Delay-On-Make	8-pin	0.6-60 sec.	24F1887	235.31
CDB-38-70005	120VAC	Delay-On-Make	8-pin	1.8-180 sec.	24F1877	241.30
CDB-38-70015	120VAC	Delay-On-Break	8-pin	1.8-180 sec.	67F1165	235.31
CDB-38-70016	120VAC	Delay-On-Break	11-pin	0.1-1 sec.	95F9220	231.76
CDB-38-70091	120VAC	Delay-On-Break	11-pin	0.1-5 sec.	95F9223	231.76

**CMOS IC TIME-DELAY RELAY, KNOB ADJUSTABLE, .05% REPEATABILITY**

Mfg. Part No.	Input Voltage	Operation	Mtg.	Time Delay	Stock No.	Price Each 1-24
CGB-38-78010M*	120VAC	Delay-On-Make	11-pin	1-10 min.	95F9222	249.27
CGB-38-70010M	120VAC	Delay-On-Make	8-Pin	10-100 min.	94B8815	273.30
CGB-38-70050M	120VAC	Delay-On-Make	8-pin	5-50 min.	33F1598	296.07
CGB-38-79010M	120VAC	Interval	8-pin	1-10 min.	33F1603	296.07

**CMOS IC TIME-DELAY RELAY, KNOB OR RESISTOR ADJUSTABLE**

Mfg. Part No.	Input Voltage	Operation	Mtg.	Time Delay	Stock No.	Price Each 1-24
CKD-38-20010	12VDC	Delay-On-Make	8-pin	0.1-10 sec.	67F1161	132.46
CKB-38-77010	120VAC	Delay-On-Break	8-pin	0.1-10 sec.	70B8786	179.42
CKF-38-70010	120VAC	Delay-On-Make	11-pin	0.1-10 sec.	24F3361	125.12
CKB-38-70010	120VAC	Delay-On-Make	8-pin	0.1-10 sec.	24F3364	135.83
CKB-38-78010	120VAC	Delay-On-Break	11-pin	1-10 sec.	24F3260	132.46
CKF-38-78010	120VAC	Delay-On-Break	11-pin	0.1-10 sec.	66F3430	128.64
CKB-38-77060	120VAC	Delay-On-Break	8-pin	0.6-60 sec.	95F9232	151.34
CKB-38-70060	120VAC	Delay-On-Make	8-pin	0.6-60 sec.	67F1158	143.49
CKB-38-77120	120VAC	Delay-On-Break	8-pin	1.2-120 sec.	90F1215	194.37
CKB-38-70120	120VAC	Delay-On-Make	8-pin	1.2-120 sec.	24F3365	120.82

**COMPACT TIME-DELAY RELAY, FIXED, KNOB, OR RESISTOR ADJUSTABLE, NO TIMING CYCLE INTERRUPT**

Mfg. Part No.	Input Voltage	Operation	Mtg.	Time Delay	Stock No.	Price Each 1-24
CLC-41-30005	24VDC	Delay-On-Make	**Q.C.	**Q.C.	08H1262	140.11
CLH-41-30010	24VDC	Delay-On-Make	11-pin	0.1-10 sec.	24F3358	98.00
CLB-51-30010	24VAC	Delay-On-Make	8-pin	0.1-10 sec.	24F3354	106.45
CLF-41-70010	120VAC	Delay-On-Make	11-pin	0.1-10 sec.	24F3357	99.55
CLB-51-70030	120VAC	Delay-On-Make	8-pin	0.3-30 sec.	77B2871	98.80
CLB-51-70010	120VAC	Delay-On-Make	8-pin	0.1-10 sec.	24F3355	92.39
CLB-51-70120	120VAC	Delay-On-Make	8-pin	1.2-120 sec.	24F3356	107.62
CLF-42-70010	120VAC	Delay-On-Make	**Q.C.	0.1-10 sec.	67F1142	128.10
CUH-41-30010	24VDC	Delay-On-Make	11-pin	1-10 sec.	24F2939	159.71
CUH-42-30010	24VDC	Delay-On-Make	**Q.C.	1-10 sec.	24F2944	117.79
CUH-41-30120	24VDC	Delay-On-Make	11-pin	1-120 sec.	24F2940	141.65
CUA-41-70001	120VAC	Delay-On-Make	8-pin	1 sec.	67F1137	109.68
CUA-41-70005	120VAC	Delay-On-Make	8-pin	5 sec.	33F1665	117.79
CUB-51-70010	120VAC	Delay-On-Make	8-pin	1-10 sec.	24F3350	111.73
CUB-51-70120	120VAC	Delay-On-Make	8-pin	1-120 sec.	24F3351	111.73
CUF-41-70010	120VAC	Delay-On-Make	11-pin	1-10 sec.	24F2937	120.78
CUF-42-70010	120VAC	Delay-On-Make	11-pin	1-10 sec.	24F2942	117.79
CUF-41-70120	120VAC	Delay-On-Make	11-pin	1-120 sec.	24F2938	120.78
CUF-42-70120	120VAC	Delay-On-Make	11-pin	1-120 sec.	24F2943	117.79
CUF-41-70030	120VAC	Delay-On-Make	11-pin	1-30 sec.	67F1143	117.79
CUB-51-70060	120VAC	Delay-On-Make	**Q.C.	1-60 sec.	77B2875	109.08
CUA-41-70003	120VAC	Delay-On-Make	**Q.C.	3 sec.	95F9231	109.68
CUA-41-70010	120VAC	Delay-On-Make	**Q.C.	10 sec.	24F2927	117.79
CUA-41-71034	...	Delay-On-Make	...	...	91B3143	138.99
CUA-41-70010	120VAC	Delay-On-Make	...	10 sec.	24F2927	117.79

**RECYCLE TIME-DELAY RELAY, INTERVAL ON AND OFF TIME ADJUSTMENT KNOBS**

Mfg. Part No.	Input Voltage	Operation	Mtg.	Time Delay	Stock No.	Price Each 1-24
CRD-48-30180	24VDC	Repeat Cycle	8-pin	1.8-180 sec.	67F1171	281.07
CRB-48-70010	120VAC	Interval	8-pin	0.1-10 sec.	33F1668	266.03
CRB-48-70030	120VAC	Interval	8-pin	0.3-30 sec.	95F9227	281.07
CRB-48-70060	120VAC	Repeat Cycle	8-pin	0.6-60 sec.	77B2872	266.03

**SOCKETS**

Mfg. Part No.	For Use With Series Relays	No. of Pin/Blades	Terminal Type and Mounting	Hold-Down Spring	Stock No.	Price Each 1-24
● 27E122	CB, CD, CG, CH, CK, CN1, CNS, CR, CS	8	Screw	...	57F3431	4.68
● 27E123	CB, CD, CG, CH, CK, CNM5, CNS, CNT	11	Screw	...	57F3432	5.17
● 27E891	CB, CD, CG, CH, CK, CN1, CNS, CR, CS	8	Screw, DIN Rail Snap-Mount	...	46F3587	5.52
● 27E892	CB, CD, CG, CH, CK, CNM5, CNS, CNT	...	Screw, DIN Rail Snap-Mount	...	46F3588	7.55
● 27E043	CL-41, CL-44, CU-51, CU-51, CU-41, CU-44	11	Screw, Solder	20C228 20C254	57F3424	2.21
● 27E046	CL-41, CL-44, CU-51, CU-51, CU-41, CU-44	11	PC Board	20C228 20C254	57F3425	2.40

▶ CONTINUED ▶



RELAYS – TIME-DELAY • TIMERS

P&B 10A OUTPUT TIME-DELAY RELAYS (CONT.)

Mfg. Part No.	For Use With Series Relays	No. of Pin/Blades	Terminal Type and Mounting	Hold-Down Spring	Stock No.	Price Each
● 27E067	CL-41, CL-44, CL-51, CU-51, CU-41, CU-44	11	QC & Solder	20C228 20C254	57F3427	3.33
● 27E121	CL-41, CL-44, CL-51, CU-51, CU-41, CU-44	11	Screw	20C314	57F3430	6.67
● 27E396	CL-41, CL-44, CL-51, CU-51, CU-41, CU-44	11	QC & Solder	20C254	57F3466	2.08
● 27E893	CL-41, CL-44, CL-51, CU-51, CU-41, CU-44	11	Screw, DIN Rail Snap-Mount	20C318	46F3616	7.96

(2924)

MINIATURE SOLID-STATE TIME-DELAY RELAYS



**H3YN series** miniature solid-state time-delay relays combine 4 switch-selectable operation modes and time ranges into a single compact unit. Selectable operation modes include ON-delay, interval, or repeat cycle (ON-start or OFF-start). Choose long-range or short-range versions, each with 4 switch-selectable sub-ranges to meet your application requirements and improve accuracy (1% FS max.). Analog set dial lets users fine-tune timing for their specific applications. Dimensions: 1.10H x 0.85W x 2.50"D (28 x 21.5x 63). Requires mounting socket, *ordered separately*. UL recognized, CSA certified and CE compliant. Other supply voltages and DC models are available; *go online or call*.



Mfg. Part No.	Supply Voltage (VAC)	Range	Output Configuration	Stock No.	Price Each	
					1-9	10-24
● H3YN-2 AC100-120	100-120	Short: 0.1 sec. to 10 min.	DPDT (5A @ 250VAC)	88K1949	57.51	54.74
● H3YN-4 AC100-120	100-120	Long: 0.1 min. to 10 hr.	4PDT (3A @ 250VAC)	88K1109	57.51	54.74
● H3YN-21 100-120VAC	100-120		DPDT (5A @ 250VAC)	18M7367	56.10	53.40

(3037)

SOCKETS AND ACCESSORIES FOR TIMERS, COUNTERS, AND TOTALIZERS



Sockets and hold-down clips listed are for time-delay relays listed on this page.

Mfg. Part No.	Description	Stock No.	Price Each			
			1-49	50-99	100-249	250-499
● PYF08A-E	Track Mounting Socket w/Front Templates for <b>H3YN-2 series</b>	36K2031	4.87	4.56	4.36	4.18
● PYF08A-N	Track Mounting Socket w/Front Templates for <b>H3YN-2 series</b>	89C7783	5.83	5.25	4.67	4.20
● PY08	Connecting Socket w/Solder Terminals for <b>H3YN-2 series</b>	36K3464	1.19	1.12	1.07	1.02
● PYF14A-E	Track Mounting Socket w/Front Terminals for <b>H3YN-4 series</b>	52F3770	6.44	6.03	5.77	5.52
● PY14	Connecting Socket w/Solder Terminals for <b>H3YN-4 series</b>	35K3221	2.12	1.99	1.90	1.82

Brackets and sockets for timers and counters listed below.

Mfg. Part No.	Description	Stock No.	Price Each			
			1-4	5-14	15-24	25-49
● Y92F-30	Panel Mount Bracket for 1/16 DIN Timers and Counters	88K2030	9.47	9.24	8.81	8.39
● PF085A	8-pin Track or Surface Mount Socket w/ Top Terminals	88K1970	10.22	9.97	9.51	9.06
● P3G-08	8-pin Back Mount Socket w/ Bottom Terminals	88K1975	8.95	8.73	8.33	7.93
● P3GA-11	11-pin Back Mount Socket w/ Bottom Terminals	88K1976	10.56	10.30	9.83	9.36

(3038)

DFS SERIES SOLID-STATE FLASHERS



100% solid-state circuitry. Flash rates are fixed and available from 1 to 1,000fpm. All types below have flash rates of 60fpm. Duty cycle is 50%. Termination: 0.250" QC male terminals. Case material: black plastic, epoxy-sealed. Dimensions: 2H x 2W x 3/4"D. UL listed, CSA certified. Other flash rates and voltages are available; *go online or call*.



Mfg. Part No.	Input Voltage	Current Rating (A)	Stock No.	Price Each			
				1-14	15-24	25-49	50-99
DFS152-60	120VAC	3	83F4165	51.10	48.12	45.99	43.86
DFS154-60	120VAC	12	83F4166	57.79	53.26	51.93	49.27
DFS219-60	12VDC	3	83F4167	51.10	48.12	45.99	43.86
DFS220-60	12VDC	12	83F4168	57.79	53.26	51.93	49.27

▶ CONTINUED ▶

DFS SERIES SOLID-STATE FLASHERS (CONT.)

Mfg. Part No.	Input Voltage	Current Rating (A)	Stock No.	Price Each			
				1-14	15-24	25-49	50-99
DFS224-60	24VDC	3	83F4169	51.10	48.12	45.99	43.86
DFS225-60	24VDC	12	83F4170	57.79	53.26	51.93	49.27

(30771)

DF SERIES ENCAPSULATED FLASHERS

Solid state analog flasher circuitry encapsulated in black plastic case. Approximate 50% duty cycle. 2A load rating. 0.250" quick-connect terminals. 1 1/16L x 1 1/8W x 1 9/16"H. Temperature range: -23°C to +60°C. Units below are 24-120VAC/DC. Fixed voltage available. Other flash rates and voltages available; *go online or call*. UL recognized, CSA certified.



Mfg. Part No.	Flash Rate (FPM)	Stock No.	Price Each			
			1-9	10-24	25-49	50-99
24-120F30DF	30	95F1633	24.93	24.06	23.44	22.82
24-120F45DF	45	95F1634	24.93	24.06	23.44	22.82
24-120F60DF	60	95F1635	24.93	24.06	23.44	22.82
24-120F90DF	90	95F1636	24.93	24.06	23.44	22.82
24-120F120DF	120	95F1637	24.93	24.06	23.44	22.82

(3987)

DFA SERIES ADJUSTABLE RECYCLING TIMERS (FLASHERS)

Solid-state digital CMOS recycle (flasher) timer circuitry with 8-pin base. Off/on time user adjustable over a 100:1 span. DPDT (2 Form C) isolated 10A relay contacts. Adjustable recycling timers provide a continuously operating off/on cycle as long as power is applied to the input terminals. Two knob operated potentiometers provide user adjustment of both the flash rate and duty cycle. Mfg. part no. prefix denotes input voltage. Other time-delays and voltages available. Spade terminal style available; *go online or call*. UL recognized, CSA certified.



Mfg. Part No.	Delay (Seconds)	Stock No.	Price Each			
			1-9	10-24	25-49	50-99
12D A/A DFA	.1-10	92F3377	80.50	78.11	76.12	74.13
12D C/C DFA	.6-60	92F3380	80.50	78.11	76.12	74.13
12D E/E DFA	1.8-180	92F3383	80.50	78.11	76.12	74.13
120A A/A DFA	.1-10	92F3376	80.50	78.11	76.12	74.13
120A C/C DFA	.6-60	92F3379	80.50	78.11	76.12	74.13
120A F/F DFA	1-100min./6000 sec.	92F3391	80.50	78.11	76.12	74.13
24D B/B DFA	.6-60	92F3387	80.50	78.11	76.12	74.13

(4022)

DFV SERIES ADJUSTABLE FLASHERS

- Solid-state analog flasher circuitry
- DPDT isolated 10A relay contact
- Variable flash rate: standard flash rate range: 10-120 FPM
- Single-knob adjustment on top of unit
- 12V to 120V input voltage available — both AC and DC models

DFV series on/off recycling flashers have a flash rate that is adjustable from 10 - 120 flashes per minute (FPM) by means of a knob potentiometer on top of the unit. Custom rates are available within ranges between a minimum of 1 FPM and maximum of 240 FPM. Contact material: silver cadmium oxide. Termination: 8-pin octal-style plug. 11-pin spade terminals also available; *go online or call*. UL recognized, CSA certified.



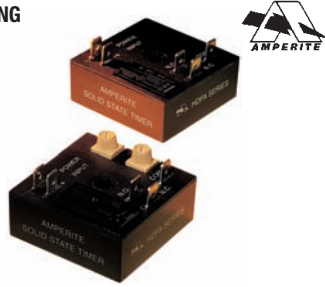
Mfg. Part No.	Flash Rate (FPM)	Input Voltage	Stock No.	Price Each			
				1-9	10-24	25-49	50-99
120AF10-120DFV	10-120	120AC	52F078	57.79	55.78	54.34	52.90
24DF10-120DFV	10-120	24DC	52F080	57.79	55.78	54.34	52.90

(5273)

**HDFA SERIES ADJUSTABLE RECYCLING TIME-DELAY FLASHER RELAYS**

- 10 ampere SPDT contacts circuitry
- CMOS digital timing circuitry
- Off- and on-time user-adjustable
- Timing from milliseconds to hours

HDFA series low cost adjustable recycling timers may be used for alternately switching one or two load circuits with both OFF-Time and ON-Time adjustable by means of two built-in potentiometers. An SPDT 10 ampere contact set alternates continuously as long as power is applied to the relay. Typical applications include OFF/ON cycling for equipment burn-in test, lighting controls, and automatic cycling of electrically operated devices. Other voltages and time delay available; go online or call.



Mfg. Part No.	Recycle Delay	Input Voltage	Stock No.	Price Each			
				1-14	15-24	25-49	50-99
120AA/AHDFA	.25-10S	120VAC	16C1878	53.04	50.13	47.74	45.62
120AC/CHDFA	0.6-60S	120VAC	16C1879	53.04	50.13	47.74	45.62
120AF/HDFFA	1-100M	120VAC	16C1880	53.04	50.13	47.74	45.62
120A/AHDFA	.25-10S	12VDC	28B472	53.04	50.13	47.74	45.62
120C/CHDFA	.6-60S	12VDC	16C1874	53.04	50.13	47.74	45.62
120F/HDFFA	1-100M	12VDC	16C1875	53.04	50.13	47.74	45.62
24DA/AHDFA	.25-10S	24VDC	16C1885	53.04	50.13	47.74	45.62
24DC/CHDFA	0.6-60S	24VDC	16C1886	53.04	50.13	47.74	45.62
24DF/HDFFA	1-100M	24VDC	16C1887	53.04	50.13	47.74	45.62

(55272)

**ST2 SERIES SOLID-STATE INTERVAL (ONE-SHOT) TIMERS**

- 100% solid-state circuitry — no moving parts
- CMOS digital timing circuitry
- Adjustable delays from milliseconds to hours
- 2A continuous load current

Timers have contacts with solid-state switching device SPST, normally-open series connections. Continuous current rating: 2A. Maximum inrush: 20A. Voltage drop: 2.5Vrms or less @ 2A. Timing: fixed or field-adjustable from, 0.1 seconds to 100 hours. Timers have epoxy sealed black plastic enclosures measuring 2 x 2 x 3/4". Available in 3 or 5/4" quick-connect male terminals.



Mfg. Part No.	Delay (Sec.)	Input Voltage	Stock No.	Price Each			
				1-9	10-24	25-49	50-99
120A-2-20SST2	0.2-20	120VAC	16C1877	32.18	31.38	30.58	29.78
120A1-100SST2	1-100	120VAC	16C1882	32.18	31.38	30.58	29.78
12D-2-20SST2	0.2-20	12VDC	28B470	32.18	31.38	30.58	29.78
12D1-100SST2	1-100	12VDC	16C1876	32.18	31.38	30.58	29.78
24D-2-20SST2	0.2-20	24VDC	16C1884	32.18	31.38	30.58	29.78

(55270)

**SOLID-STATE AC AND DC FLASHERS**

- Digital Timing Circuitry



For use in equipment which requires lamp, relay or solenoid to flash (pulse) at rate of 60 flashes per minute. Turn load on for 0.5 seconds every second. These flashers are available in various operating voltages and fixed-flash rates from the factory. Mfg. part no. 4210-115-60FPM UL/cUL recognized.

Mfg. Part No.	Ratings	Operating Temperature	Stock No.	Price Each	
				1-14	15-24
4210-115-60FPM	1A, 115VAC	-20°C to +85°C	88K2146	38.40	36.24
423-24-60FPM	1A, 24VDC	-20°C to +80°C	88K2147	35.34	33.35

(2893)

**438S SERIES TIMERS AND CONTROLLERS**



Fig. 1



Fig. 2



Fig. 3

Delay-on-make timers: connect in series with any 10mA to 1A load. When the operating voltage is applied, a small amount of current will flow through the load and the timer. At the end of the time delay period, the timer turns ON and full load current is permitted to flow. Mfg. part no. 438AS-115-1: Operates from 115VAC, time delay is set by an external resistor across terminals 4 and 5 for the 0.1 to 30 second range. Mfg. part no. 438UPS: Operates from 19 to 288VAC/DC. Time delay of 0.1 to 6 minutes adjusted with internal potentiometer. Mfg. part no. 438US: Operates from 19 to 288VAC/DC. Time delay of 1 to 1000 seconds set by an external resistor across terminals 4 and 5. Mfg. part no. 438USAS: Operates from 19 to 288VAC/DC. Time delay of 1 to 1024 seconds adjusted with internal DIP switch.



Fig. 4

Mfg. Part No.	Fig.	Timing Function	Time Range (sec.)	Operating Voltage (VAC/VDC)	Stock No.	Price Each	
						1-14	15-24
438AS-115-1	1	Delay-On-Make	0.1-30	115	86K9980	26.34	25.47
438UPS	2	Delay-On-Make	1-480	19-288	86K9981	30.59	29.58
438US	3	Delay-On-Make	1-1000	19-288	86K9982	27.10	26.20
438USAS	4	Delay-On-Make	1-1024	19-288	86K9984	28.08	27.15

(88995)

**INTERVAL/SINGLE-SHOT TIMERS**



4310 Series



4300 Series

4310 series can perform as an interval or single-shot timer with closure of a momentary or maintained switch. The load remains ON for the full time period upon closure of the switch. Offering zero voltage switching. Controls DC loads to 1 ampere and AC loads 1 amp and 5 amp units can be extended to 10 amps with additional heatsinking. 4300 series performs as an interval timer. Upon application of operating voltage the timer turns ON to a 1 amp load circuit for a preset time period. Operating voltage must be present for more than the preset time period. The 4310 and 4300 series are available in additional AC/DC voltages, output ratings and timing ranges. UL/cUL recognized.

**4310 SERIES INTERVAL/SINGLE SHOT TIMERS**

Mfg. Part No.	Supply Voltage	Output Load (A)	Time Range (Seconds)	Stock No.	Price Each	
					1-4	5-9
4310A-8-A-3	115VAC	1	2-1000	86K9979	59.87	57.22
4310A-8-B-1	115VAC	5	0.1-30	94F182	68.93	65.88
4310A-8-B-2	115VAC	5	1-300	93K7642	68.93	65.88

**4300 SERIES INTERVAL TIMERS**

4300A-8-2	115VAC	1	1-300	88K1400	39.53	37.78
4300A-2-1	12VDC	1	0.1-30	20C3340	39.53	37.78
4300A-3-1	24VDC	1	0.1-30	97B3140	39.53	37.78

(3085)

**Expert technical support**

Chat online to our team of engineers, or connect to them through your representative.

(148838)

TIMERS • SIGNAL CONDITIONERS

INTERVAL COUNTDOWN TIMERS



4972



4970-2

Series 4970, 4972 and EPC-13025-S-115VAC are microcontroller-based interval countdown timers offering a digital display of time. Feature four time base codes; tenths-of-seconds, seconds, minutes and seconds and hours and minutes. UP/DOWN buttons allow for setting the countdown time period. Preset time kept in non-volatile memory. **Mfg. part no. 4970** offers SPDT power contacts rated for 20A operating @ 115VAC. *Additional operating voltages available, call or go online.* **Mfg. part no. 4972** and **Mfg. part no. EPC-13025-S-115VAC** feature operation of a customer-supplied remote control switch for the start/stop and reset functions. **Mfg. part no. EPC-13025-S-115VAC** offers SPNO contacts rated 12A@115VAC. **Mfg. part no. 4972** offers a voltage switch selector of 115VAC or 230VAC with SPST power contacts rated 20A. **Mfg. part no. 4970** and **EPC-13025-S-115VAC** are UL/cUL approved.

Mfg. Part No.	Output Contacts	Output Current (A)	Operating Voltage	Stock No.	Price Each	
					1-4	5-9
● 4970-2	Relay	20	125VAC	88K2164	221.84	209.40
● 4972	Relay	20	115/230VAC	88K1413	205.48	201.87
● EPC-13025-S-115VAC	Relay	12	125VAC	86K9977	158.90	156.11

(2841)

ACTIONPAK® SIGNAL CONDITIONER AND LIMIT ALARMS



SPECIFICATIONS

	Signal Conditioner	Limit Alarm
Input Range	Selection by DIP Switch	Selection by DIP Switch
Output (Conditioners)	0-5V, 0-10V, 0-1mA, 4-20mA	...
Limit Alarms	None	1 DPDT Relay, 5A 2 SPDT Relays, 5A
Accuracy	± 0.35% of FS (<20mV / 2mA) ± 0.1% of FS (>20mV / 2mA)	± 0.01%
Supply Voltage	120 / 240VAC	120 / 240VAC
Isolation Voltage	1500VDC between input, output and power	1000VDC between contacts, input and power
Size (inches)	3.56H x 2.85W x 2.05D	3.50H x 2.85W x 2.05D
Mounting	DIN Rail	DIN Rail

Signal conditioner offers wide ranging input and output capability for scaling and transmitting analog DC signals. Will accept input voltage spans from 10mV up to 100V, as well as input current spans from 1-100mA. The 4-20mA output signal is a powerful 20VDC. Can be configured to accept bipolar input ranges and offer selectable normal or reverse acting operation. **Mfg. part no. 4380-2001-1** is a 3-port isolator -- the output is optically isolated from its input up to 1500VDC. The ASIC-based I/O channel is independently transformer isolated from the selectable 120/240VAC power supply. UL recognized, CSA certified.

Mfg. Part No.	Description	Limit Alarm	Stock No.	Price Each
4380-2001-1	Signal Conditioner	...	85K9272	431.00
1080-2000-1	Limit Alarm	1 Relay, DPDT	85K9234	265.00
1090-2000-1	Limit Alarm	2 Relay, SPDT	85K9235	329.00

ACCESSORIES

**Mfg. part no. MD08-0000** 8-pin DIN mount socket is used with 4380 series signal conditioner. **Mfg. part no. MD11-0000** 11-pin DIN mount socket is used with 1080 and 1090 series limit alarms.

Mfg. Part No.	Description	Stock No.	Price Each
M004-0000	4ft. Channel Track	85K9195	17.00
M801-0000	Retaining Spring	85K9197	17.00
MD08-0000	8-Pin DIN Mount Socket	85K9190	16.00
MD11-0000	11-Pin DIN Mount Socket	89K2092	18.00

(88628)

ULTRA SLIMPAK II™ ISOLATOR, SIGNAL CONDITIONER, LIMIT ALARMS



SPECIFICATIONS

Input Range	Selectable by DIP Switch
Output (Conditioners)	0-10V, 0-20mA or 4-20mA
Output (Limit Alarms)	2 SPDT relays, 5A at 120VAC
Input/Output Accuracy	± 0.01% of FS / ± 0.05% of FS
Supply Voltage	9 to 30V DC
Isolation Voltage	1800VDC or peak AC between input, output and power
Size	Conditioners: 0.5" (12.77mm) wide Limit Alarms: 0.69" (17.5mm) wide Communications Interface and Power Supply: 0.89" (22.5mm) wide
Mounting Type	DIN Rail

Ultra SlimPak II DC powered isolating signal conditioners feature "Smart Power" to reduce power consumption and temperature rise. Units are configured using DIP switches and feature pushbutton calibration. Power jumpers are used to distribute power to multiple units. Each module can be remotely configured using an Ethernet connection to the WVC16 and a remote PC-based web browser. **WV408** and **WV428** series isolators meet Class I, Div. 2 standards. UL recognized, CE compliant.

ISOLATORS AND SIGNAL CONDITIONERS

Mfg. Part No.	Signal Input	Stock No.	Price Each
WV408-2000.V1	DC Selectable Current or Voltage	46M5044	256.00
● WV418-2000.V1	DC Selectable Current or Voltage	45P4510	336.00
● WV428-2000.V1	Selectable Thermocouple	55M4371	282.00
● WV438-2000.V1	Selectable Potentiometer	07P8540	320.00
● WV448-2000.V1	DC Bridge Selectable Current or Voltage	45P4511	331.00
● WV468-2000.V1	AC Selectable Current or Voltage	88M8213	320.00
WV478-2000.V1	Selectable Frequency	57P8822	363.37

INPUT LIMIT ALARMS

WV108-2000.V1	DC Selectable Current or Voltage	01P5460	298.00
WV118-2000.V1	Selectable RTD	41P0331	288.00
WV128-2000.V1	Selectable Thermocouple	41P0332	298.00
WV168-2000.V1	AC Selectable Current or Voltage	41P0333	298.00

ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Each
WVC16-2000	Communications Interface	85K9211	295.00
C650-2000	Software CD and Serial Cable	85K9184	57.00
WV905-0000	24VDC (0.5A) Power Supply	85K9219	166.00

(88608)

ULTRA SLIMPAK™ SIGNAL CONDITIONERS AND LIMIT ALARMS



Just Added

- One of the most cost-effective products on the market, great for OEM applications
- Potentiometer based calibration, easy setup, user friendly
- DIP switch setting, ASIC technology, highly reliable, 3-way isolation

SPECIFICATIONS

Input Range	Selectable by DIP Switch
Output (Conditioners)	0-5V, 0-10V, -10 to 10V, 0-20mA or 4-20mA
Output (Limit Alarms)	2 SPDT relays, 5A at 120VAC
Input/Output Accuracy	± 0.015% of FS / ± 0.05% of FS
Supply Voltage	9 to 30 VDC (except G448, 18 to 30V DC)

▶ CONTINUED ▶



**ULTRA SLIMPAK™ SIGNAL CONDITIONERS AND LIMIT ALARMS (CONT.)**

Isolation Voltage	1800VDC or peak AC between input, output and power
Size	Conditioners: 12.6 or 17.5 mm wide Limit Alarms: 17.5mm wide
Mounting Type	DIN Rail

**SELECTION GUIDE**

Input Selection	Description	Model
DC Voltage or Current (V, mV, A, mA)	Field configuration DC input isolator	G408
	Field configuration DC input limit alarm	G108
Thermocouple (Types E, J, K, R, S, T, B)	Thermocouple input field configurable isolator	G428
	Thermocouple input field configurable limit alarm	G128
Potentiometer (0-100 ohm to 0-100k ohm)	Potentiometer input field configurable signal conditioner	G438
Strain Gauge (0.5, 1, 3, 5, 10, 20 50mV/V) 1 to 10V adjustable excitation	Bridge input field configurable isolator	G448
AC Voltage or Current (V, mV, A, mA)	AC input field configurable isolator	G468

The Ultra SlimPak **G4X8 Series** of Signal Conditioners accept a variety of process signals: DC voltage and current (**G408**), thermocouple (**G428**), potentiometer (**G438**), strain-gauge (**G448**), AC current or voltage (**G468**). Three port isolation — input to output to power — ensures that common ground faults are eliminated from any source. The Ultra SlimPak **G1X8 Series** of Limit Alarms accept the most popular process signals: DC voltage and current (**G108**), thermocouples (**G128**). Their output is a dual contact closure (2 - SPDT relays) which can be used to light hazard beacons, sound audible alarms or alert control systems of abnormalities. The Ultra SlimPak Series is a result of this effort and investment. It utilizes the latest ASIC and microprocessor based technologies to provide 1800VDC isolation and wide ranging adjustments for easy, accurate, discrete signal conditioning. The power supply of the Ultra SlimPak will accept source between 9 and 30VDC, typically a 12 or 24VDC supply is used.

**SIGNAL CONDITIONERS**

Mfg. Part No.	Description	Width (mm)	Stock No.	Price Each
<a href="#">G408-0001.V1</a>	DC Voltage/Current Input	12.6	<b>14N9940</b>	295.00
<a href="#">G408-1001.V1</a>	DC Voltage/Current Input-Bipolar Output 5V/10V	12.6	<b>41P0303</b>	295.00
<a href="#">G428-0001.V1</a>	Thermocouple Input: B, E, J, K, R/S, T	17.5	<b>41P0304</b>	339.00
<a href="#">G468-0001.V1</a>	AC Input: 50mV/50mA to 250V/100mA	12.6	<b>41P0306</b>	329.00
<a href="#">G448-0002.V1</a>	Bridge/Strain Gauge Input	17.5	<b>41P0305</b>	329.00
<a href="#">G438-0001.V1</a>	Potentiometer Input: 100 Ohms to 100K Ohms	12.6	<b>07P8538</b>	329.00

**LIMIT ALARMS-DUAL SPDT RELAY**

<a href="#">G108-0001.V1</a>	DC Voltage/Current Input Limit Alarm	17.5	<b>41P0301</b>	307.00
<a href="#">G128-0001.V1</a>	Thermocouple Input Limit Alarm	17.5	<b>41P0302</b>	307.00

(139126)

**ACTION I/Q SIGNAL CONDITIONERS AND LIMIT ALARMS**

Just Added



I/Q Model



Loop Powered

- AC, DC or Loop Powered, 3-way isolation
- Multi-Channel, TouchCal or Software based calibration
- Math Functions, can replace more than 1600 older plug-in models

**SPECIFICATIONS**

Input Range	Selectable by DIP Switch
Output (Conditioners)	0-10V, -10 to 10V, 0-20mA or 4-20mA
Output (Limit Alarms)	2 SPDT relays, 5A at 120VAC
Input/Output Accuracy	± 0.015% of FS / ± 0.05% of FS
DC Supply Voltage	9 to 30 VDC
AC Supply Voltage	85 to 264 VAC
Isolation Voltage	1800VDC or peak AC between input, output and power
Size	Conditioners: 22.29mm wide Limit Alarms: 22.29mm wide
Mounting Type	DIN Rail

▶ CONTINUED ▶

**ACTION I/Q SIGNAL CONDITIONERS AND LIMIT ALARMS (CONT.)**

**DC ACTION I/Q SELECTION GUIDE**

Input Selection	Description	Model
DC Voltage or Current (V, mV, A, mA)	DC input isolator (fast response time)	Q404
	Field configuration DC isolator, optional excitation supply and dual output	Q408
RTD (Pt100 Ohm, Ni110 Ohm, Cu 10 ohm) Thermocouple (Types B, C, E, J, K, N, R, S, T)	Thermocouple input field configurable isolator	Q488
DC Voltage or Current (V, mV, A, mA)	Field configuration DC isolator, math functions	Q498

**AC ACTION I/Q SELECTION GUIDE**

DC Voltage or Current (V, mV, A, mA)	DC limit alarm	Q106
	Field configuration DC isolator, optional excitation supply and dual outputs	Q406
Potentiometer (0-100 ohm up to 0-100k ohm)	Potentiometer input field configurable signal conditioner	Q436
AC Voltage or Current (V, mV, A, mA)	AC input field configurable isolator	Q466
Frequency (0-2Hz to 0-10kHz)	Field configuration frequency to DC isolator	Q476
RTD (Pt100 Ohm, Ni110 Ohm, Cu 10 ohm) Thermocouple (Types B, C, E, J, K, N, R, S, T)	Instant accuracy temperature to DC isolator, field configurable via DIP switch or PC	Q486

The **DC Action I/Q Series** is very similar to the AC Action I/Q product line. The main difference is that the DC Action I/Q line is DC powered, accepting 9 to 30V. The DC powered I/Q Rail is optional since the DC Action I/Qs have both DC power terminals as well as the power rail connector, unlike the AC Action I/Q. The **AC powered Action I/Q Series** of four-wire transmitters offers many of the most advanced microprocessor and ASIC based signal conditioning solutions available, requires the **IQRL-200X**. Field configurable and wide ranging, these modules are an off the shelf solution for most isolation, signal conditioning and limit alarm applications. The **Original Action I/Q Series Loop Powered**, two-wire and three wire transmitters for sensor signal inputs including DC Voltage, DC Current, Platinum 100 Ohm RTD and thermocouples. These DC powered, fixed ranged, multi channel signal conditioners and isolators offer stable 0.1% accuracy over operating ambient temperature range of 20° to 80°C. Their multi channel design ensures high density and low material cost. Plug in terminal sockets makes wiring quick and easy.

**DC POWERED SIGNAL CONDITIONERS**

Mfg. Part No.	Description	Stock No.	Price Each
Q488-0001	Universal Input Isolator: RTD/TC/Ohm/mV	<b>50M8346</b>	316.00
Q408-A004	DC Input Isolator: 20mV/2mA to 100V/100mA Input, 2CH	<b>41P0317</b>	461.00
Q408-A000	DC Input Isolator: 20mV/2mA to 100V/100mA Input, 1CH	<b>30M7876</b>	266.00
Q498-0000	Multi-Channel Math Module: DC, Hz, Relay Output	<b>12P8424</b>	396.00
Q404-4L00	Singal Splitter, 1CH In, 2CH Out	<b>41P0313</b>	435.00
<a href="#">Q404-2L08</a>	DC Input Isolator, 2CH, 4 to 20mA Output, 4mA I/O	<b>84M7619</b>	591.00
Q404-2L09	DC Input Isolator, 2CH, 0 to 10VDC Output, 0 to 10V Input	<b>41P0312</b>	591.00

**AC POWERED SIGNAL CONDITIONERS AND LIMIT ALARMS**

Q486-0001	Universal Input Isolator: RTD/TC/Ohm/mV	<b>41P0321</b>	358.00
Q406-A002	Singal Splitter, 1CH In, 2CH Out	<b>41P0315</b>	358.00
Q406-A004	DC Input Isolator, Dual Channel	<b>41P0316</b>	504.00
Q406-A000	DC Input Isolator, Single Channel	<b>41P0314</b>	342.00
Q476-0000	Frequency InputP: 2Hz to 10kHz	<b>41P0320</b>	342.00
Q436-0000	Potentiometer Input: 100 Ohms to 100K Ohms	<b>41P0318</b>	342.00
Q466-0000	AC Input: 50mV/5mA to 300V/100mA	<b>41P0319</b>	342.00
Q106-0000	DC Voltage/Current Input Limit Alarm, 2 SPDT	<b>14N8441</b>	299.00

**LOOP POWERED SIGNAL CONDITIONERS**

Q500-1B00	DC Input Loop Powered, 1CH: 0(4)-20mA IN, 0(4)-20mA OUT	<b>41P0322</b>	191.00
Q500-2B00	DC Input Loop Powered, 2CH: 0(4)-20mA IN, 0(4)-20mA OUT	<b>41P0323</b>	290.00
Q500-4B00	DC Input Loop Powered, 4CH: 0(4)-20mA IN, 0(4)-20mA OUT	<b>41P0324</b>	396.00
Q501-1B00	DC Output Loop Powered, 1CH: 4-20mA IN, 4-20mA OUT	<b>41P0325</b>	282.00
Q501-1B03	DC Output Loop Powered, 1CH: 0 to 10V IN, 4-20mA OUT	<b>41P0326</b>	282.00
Q501-2B00	DC Output Loop Powered, 2CH: 4-20mA IN, 4-20mA OUT	<b>41P0327</b>	396.00
Q510-0B02	DC Output Loop Powered, 2CH. RTD: 0-400 F IN, 4-20mA OUT	<b>41P0328</b>	282.00
Q510-0B10	DC Output Loop Powered, 2CH. RTD: 0-150 F IN, 4-20mA OUT	<b>41P0329</b>	282.00
Q510-4B08	DC Output Loop Powered, 4CH. RTD: 0-1000 F IN, 4-20mA OUT	<b>41P0330</b>	396.00

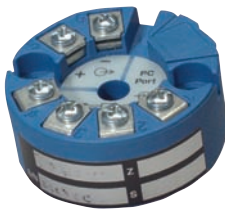
**ACCESSORIES**

C620-0000	Custom Calibration	<b>41P0299</b>	48.00
HS01-A	Heat sink for G series-vertical mounting	<b>41P0307</b>	12.00
IQRL-D002	DC Power Distribution Bus for IQ series-2 Modules	<b>41P0308</b>	43.00
IQRL-D004	DC Power Distribution Bus for IQ series-4 Modules	<b>41P0309</b>	83.00
IQRL-D008	DC Power Distribution Bus for IQ series-8 Modules	<b>41P0310</b>	103.00
IQRL-2002	AC Power Distribution Bus for IQ series-2 Modules	<b>01N4916</b>	29.00
IQRL-2004	AC Power Distribution Bus for IQ series-4 Modules	<b>11N7728</b>	76.00
IQRL-2008	AC Power Distribution Bus for IQ series-8 Modules	<b>41P0311</b>	103.00
C698-0000	Software and Serial Cable for Q498 Math Module	<b>12P8432</b>	71.00

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SIGNAL CONDITIONERS

TRANSPAK™ PROGRAMMABLE TRANSMITTER



SPECIFICATIONS

Input Type	Thermocouples, RTD (2-, 3- & 4-wire, Pt-100, Ni-110, Ni-120), DCmV, Potentiometers (0-20kΩ), Resistance (0-400Ω)
Output	4-20 mA
Accuracy	± 0.1% of span over 12 months
Supply Voltage	9-40VDC @ no load, reverse polarity protected
Isolation Voltage	2000VDC, input to output
Mounting Type	DIN Rail

Programmable two-wire transmitter that is configured to provide an isolated 4-20mA signal in proportion to the input signal. Supports either single or dual outputs. In the dual output mode, either input can be selected to control the output, or math functions can be applied in which both inputs have an effect on the output. Functions available are sum, difference, average, higher or lower of the two inputs. Typical applications include providing accurate, stable signals to distributed control systems (DCS), supervisory control and data acquisition systems (SCADA), environmental monitoring and control systems (EMCS), data acquisition and control systems (DACs) and custody transfer/pipeline systems. CE certified.

Mfg. Part No.	Signal Input	Stock No.	Price Each
T287-0000	2-wire Programmable	85K9210	266.00

ACCESSORIES

Communications kit includes: Isolated communications adapter, configuration and calibration software, and user's guide.

Mfg. Part No.	Description	Stock No.	Price Each
T25H-0000	Head Mount Enclosure	85K9209	33.00
C680-0001	Communications Kit	85K9185	229.00

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SENSOTEC MODEL GM SINGLE-CHANNEL SIGNAL CONDITIONERS

Features:

- Versatile full function signal conditioner, amplifier, and power supply
- Large 0.56" readout display size
- Short circuit protected
- 20,000 count resolution
- 14+ bit accuracy (20,000 steps)

Specifications:

- 4 1/2 digit LED display
- ±0.03% accuracy
- Supply voltage: 115VAC
- Operating temperature range: 32°F to 130°F
- Panel mount bracket included
- Bench mount bracket and NEMA 4 splash cover also available; order separately below



AE213 (shown with Bench Mount Bracket)

SIGNAL CONDITIONERS

Mfg. Part No.	Description	Input (mV/V)	Output (V)	Stock No.	Price 1-24
AE213	Model GM	0.5-5	±5	27M1753	757.50
AE213.58C	Model GM w/Peak Hold	0.5-5	±5	27M1754	1104.03

ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Each
AA923	NEMA-4 Splash proof front cover	29M9214	90.52
AA924	Bench mount bracket	29M9215	45.26

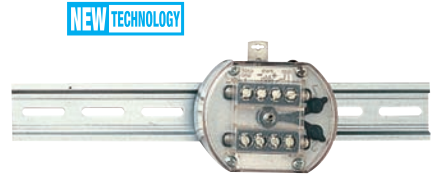
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Go online to find new technologies and proven solutions from world-class and specialist suppliers.

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ISOLATED 2-WIRE 4-20mA TRANSMITTERS



- Isolated to 1500 Vrms
- Two-Wire 4-20 mA Operation
- 9-50 V Compliance
- Turndown Ratio to 10:1
- NMV Protection to 120 Vac

- 40 to +85°C (-40 to 185°F) Operation
- Waterproof Case
- Explosion-proof Housing Options
- Field-Scalable

The Transmitter amplifies a low-level voltage signal to 4-20 mA current signal, which is immune to voltage noise pick-up. The isolation provided by the transmitter protects the receiving equipment and eliminates the possibility of ground loops between the remote signal ground and the ground of the control room. Power is obtained directly from the 4-20 mA loop, with no need for separate power input. This simplifies field wiring and eliminates the possibility of noise pickup from power lines.

Companion display for 500 Series Transmitters.

508B a 3 1/2 digit (±1.999 count) loop-powered indicator with an LCD display and a jumper-selectable dummy right-hand zero for display to ±19.990. An ideal companion product to 500 Series transmitters, with the same hockey-puck case and rugged environmental specs.

Mfg. Part No.	Input Thermocouple Signal	Stock No.	Price Each	
			1-2	
501	RTD (Pt100) or ohms (default cal. 0-850°C)	98F6954	402.00	
502A-J	Type J thermocouple (default cal. 0-500°C)	89F1803	390.00	
502A-K	Type K thermocouple (default cal. 0-800°C)	89F1804	390.00	
502A-T	Type T thermocouple (default cal. 0-400°C)	89F1805	325.00	
502A-E	Type T thermocouple (default cal. 0-400°C)	04R7974	325.00	
504	Millivolt input 5 to 10 mV span (scalable)	89F1806	390.00	
505	Current input (scalable) loop isolator	89F1807	390.00	
506-1	500 mV to 5 Vdc input span (default cal. 0-5V)	89F1794	325.00	
506-2	5 V to 50 Vdc input span (default cal. 0-50V)	89F1795	390.00	

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IDRN AND IDRX SERIES DIN RAIL MOUNT SIGNAL CONDITIONERS



Specifications:

- 10-32VDC Input Power Supply
- IDRN Output: 0-10VDC at 10mA Max.: 0-20mA or 4-20mA, 10V Compliance
- IDRX Output: 2-Wire (Half Duplex) RS-485 Output (ASCII Serial Protocol and MODBUS Serial Protocol)
- Isolation: Up to 1800VDC Peak
- Typical Response to 99%: 1 Second
- Operating Temperature: -5°C to +55°C (+23°F to +131°F)
- Storage Temperature: -40°C to +85°C (-40°F to +185°F)
- Mountable on a 35mm DIN Rail
- Dimensions: 3.55H x 0.99W x 4.88"D (91.2 x 25.1 x 124)

The new ID series signal conditioners combine the accuracy of laboratory instrumentation with the performance required by demanding industrial applications. Ideal for those applications in data acquisition, test and measurement, process control, and industrial automation where accuracy, performance and reliability are critically important. Feature 7 models designed for each of the most wide-measured signal inputs: process (DC) voltage and current, strain gauge, thermocouples, RTDs, AC voltage and current, and frequency/pulse. The IDRN series features 0-10VDC or 0-20mA (including 4-20mA) analog output signal that is typically scaled to be directly proportional to input signal. IDRX series provides highly accurate digital outputs. Each module provides an RS-485 serial output that can be transmitted directly to computer and other devices with serial communication capability or converted to Ethernet.

Mfg. Part No.	Description	Stock No.	Price Each
IDRN-RTD/N	Pt100, 500, 100Ω, 10Ω CUΩ	19C7488	375.24
IDRN-PR/N	Process-DC Millivolt and Volt	16F2353	403.00
IDRN-ST/N	Strain Gauge/ Load-Millivolt	16F2354	427.80
IDRN-FP/N	Frequency/Pulse Input	19C7491	311.82
IDRN-ACV/N	AC Voltage Input	19C7486	357.42
IDRN-ACC/N	AC Current Input	19C7483	312.57
IDRX-PR/N	Process-DC Millivolt and Volt	91F9159	341.00

ACCESSORIES

Mfg. Part No.	Description	Stock No.	Price Each
IDRN-PS-1000/N	Power Supply (Linear), 115VAC Input, 24VDC Output @ 750mA	91F9168	150.00
DB9-RJ12	DB9 to RJ12 Connector Adapter. Includes 7' RJ12 Cord	48F5067	39.90

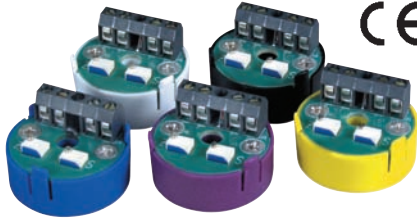
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**TX93A AND TX94A  
ULTRA-COMPACT  
TRANSMITTERS**

Just Added



- ±0.1% FS Accuracy
- 4-20 mA dc Output
- Only 1.40" (35.6mm) Diameter
- Upscale Break Protection
- J, K, T, or E Thermocoupl
- 100 ohm Platinum RTD Inputs

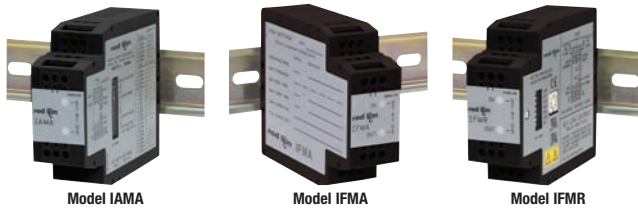


NEWPORT Ultra-Miniature temperature transmitters convert millivolt inputs from thermocouples or resistance from RTD's into 4-20mA outputs. Transmitters are available in color-coded enclosures covering the four most popular thermocouple types (J, K, T and E) as well as three-wire 100 Ohm platinum RTD's. Models TX93A and TX94A transmitters can eliminate long runs of costly field wiring in a variety of applications. A stable 4 to 20 mA output signal is provided proportional to the transmitter's specific input type and calibrated temperature range. Thermocouple Models output proportional to mV output of thermocouple. The output is not linearized to temperature. Non-Isolated output is for use with ungrounded probes.

Mfg. Part No.	Description	Stock No.	Price Each
TX93A-J1/N	Type J transmitter, with -40 to 120°F range	05R6091	74.00
TX93A-J4/N	Type J transmitter, with 0 to 500°F range	05R6092	74.00
TX93A-K2/N	Type J transmitter, with 0 to 200°F range	05R6093	74.00
TX93A-K4-P	Type K transmitter (Epoxy-potted), with 0 to 500°F range	05R6094	89.00
TX94-1	RTD transmitter (100 ohm Pt100, alpha = 0.00385), with -40 to 120°F	21M5457	139.65
TX94A-3	RTD transmitter (100 ohm Pt100, alpha = 0.00385), with 0 to 300°F	05R6095	90.00

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**DIN-RAIL SIGNAL  
CONDITIONERS**



**MODEL IAMA - UNIVERSAL SIGNAL CONDITIONING MODULE**

3-way isolation of analog signals. Universal conversion module, inputs and outputs selected via DIP switch settings. Over 100 input and output analog conversions combinations. Linear or square root extraction model available, go online or call.

Mfg. Part No.	Supply Voltage	Signal Input	Alarm Type	Stock No.	Price Each
● IAMA0353	24VAC/11-36VDC	Selectable Current or Voltage	...	84K7451	198.00

**MODEL IFMA - DIN-RAIL FREQUENCY TO ANALOG CONVERTERS**

On-line rating setting (using actual input signal or signal generator). User settable full scale frequency from 1Hz to 25KHz. Four output operating ranges (0-5V, 0-10V, 0-20mA and 4-20mA). Programmable input circuit accepts outputs from a variety of sensors. 3-way electrical isolation.

● IFMA0035	9-32VDC	Selectable Current or Voltage	...	84K7452	195.00
● IFMA0065	85-250VAC	Selectable Current or Voltage	...	84K7453	195.00

**MODEL IFMR - DIN-RAIL SPEED SWITCHES**

On-line trip frequency setting using actual input signal or frequency generator. User settable trip frequency from 0.1Hz to 25KHz. Over-speed, under-speed and zero-speed detection. Relay latching, alarm override and alarm reset functions. Programmable input circuit accepts outputs from a variety of sensors.

● IFMR0036	9-32VDC	Selectable Current or Voltage	Relay	84K7454	152.00
● IFMR0066	85-250VAC	Selectable Current or Voltage	Relay	84K7455	152.00

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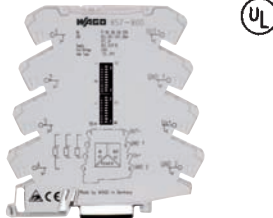
**857 SERIES JUMPFLEX  
SIGNAL CONDITIONERS**

Just Added



**Features:**

- 6mm wide housing to reduce panel space
- Flexible jumpering system eliminates redundant wiring
- Safe Operation with three-way isolation (2.5KV)
- Maintenance free wiring with CAGE CLAMP S
- Designed for extreme applications, with -25°C to +70°C temperature range



JUMPFLEX Signal Conditioning modules provide signal conversion, isolation, and amplification in a compact, DIN-rail mount package that features the Cage Clamp S spring pressure wiring technology. Additional module are available.

▶ CONTINUED ▶

**857 SERIES JUMPFLEX SIGNAL CONDITIONERS (CONT.)**

Mfg. Part No.	Description	Input Signal	Output Signal	Stock No.	Price Each
● 857-400	Configurable Isolation Amplifier	Configurable (V or I)	Configurable (V or I)	15N6552	265.54
● 857-411	Isolation Amplifier - current	0(4) - 20mA	0(4) - 20mA	79M7189	185.22
● 857-412	Isolation Amplifier - voltage	0(2) - 10V	0(2) - 10V	15N6553	185.22
● 857-420	Repeater Power Supply	0(4) - 20mA	Configurable (V or I)	15N6554	203.80
● 857-421	Repeater Power Supply	4 - 20mA	4 - 20mA	41M0018	271.66
● 857-423	Signal Splitter	Configurable (V or I)	2 x 0(4) - 20mA	15N6555	271.66
● 857-800	Signal Conditioner for RTD	Pt 100 - Pt 1000	Configurable (V or I)	15N6556	197.57
● 857-810	Signal Cond, for Thermocouples	Type J or K	Configurable (V or I)	61M2091	209.92
● 857-451	Passive Isolator 1-channel	0(4) - 20mA	0(4) - 20mA	72M6942	203.80
● 857-452	Passive Isolator 2-channel	0(4) - 20mA	0(4) - 20mA	72M6944	308.70

**INSULATED WHITE JUMPER COMB, 18A**

Mfg. Part No.	Description	Stock No.	Price Each
● 859-402	2 pole	29K5508	0.33
● 859-410	10 pole	29K5516	1.64

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**AC CURRENT AND  
VOLTAGE TRANSDUCERS,  
DC-DC ISOLATORS**



- Rugged metal case design for utility and industrial applications
- Accuracy: 0.5% (2469 series); 0.2% (2489 series)
- Response time: 400ms
- Exceeds IEEE472/ANSI C37.901 surge withstand capability test
- Maximum protection from line transients
- UL recognized

**AC CURRENT TRANSDUCERS**

**AC Current Transducer**

Mfg. Part No.	Function	Input Current (AC)	Input Voltage (AC)	Frequency (Hz)	Output Current (DC)	Stock No.	Price Each
2469-21-38-2-AFA-0	Average Current	0-5A	...	50/60	0-1mA	63K2349	75.00
2469-31-38-2-AHD-1	True RMS Current	0-5A	...	50/60	4-20mA	63K2350	195.00
2489-21-38-2-AFA-0	Current	0-5A	...	50/60	0-1mA	63K2362	85.00

**AC VOLTAGE TRANSDUCERS**

2469-32-33-2-AHD-1	True RMS Voltage	...	0-150V	50/60	4-20mA	63K2354	195.00
2489-32-33-2-AHD-1	True RMS Voltage	...	0-150V	50/60	4-20mA	63K2361	215.00
2489-22-33-2-AFA-0	Voltage	...	0-150V	50/60	0-1mA	63K2363	85.00
2489-32-36-2-AFA-1	True RMS Voltage	...	85-135V	50/60	0-1mA	63K2360	225.00

**DC-DC ISOLATORS**

Mfg. Part No.	Function	Input Current (DC)	Input Voltage (DC)	Output Current (DC)	Stock No.	Price Each
2469-11-001-AFA-1	DC Voltage Input	...	0-50mV	0-1mA	63K2346	205.00
2469-12-101-AHD-1	DC Current Input	0-1mA	...	4-20mA	63K2347	205.00

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