



IronHorse ACN Series Accessories

Accessories Available for ACN Drives

ACN Drives Available Software and Accessories	
Accessory	Reference
Ethernet Module: ACN-ETH	ACN Extension I/O and Ethernet Module on page tN4X-15
Extension I/O: ACN-EIO	
Remote Keypad: ACN-LCD	Remote Keypad on page tN4X-16
Remote Keypad Mount Kit w/Cable: ACN-3MRC	
Remote Keypad NEMA4X Mount Kit w/Cable: ACN-LCDKM	
Fuses/Circuit Breakers	Fuses/Circuit Breakers on page tN4X-17
EMI Filters	High Performance EMI Input Filters on page tN4X-18
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Line Reactors/Voltage Time Filters	Line Reactors/Voltage Time Filters on page tN4X-19
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USB to RJ45 Port Cable: ACN-232C	Communication Cable on page tN4X-21

ACN Extension I/O and Ethernet Module

The ACN-EIO Extension IO option card provides additional discrete and analog IO points for any ACN(ND) series drives. The ACN-ETH is an option module for connecting any ACN series drive to an ethernet network. The module supports both the EtherNet/IP and Modbus TCP protocols.

ACN Extension I/O and Ethernet Module		
Part Number	Price	Description
ACN-EIO	\$205.00	IronHorse ACN series relay/analog combo module, Analog Input: 2-channel, current/voltage, Analog Output: 1-channel, current/voltage, Discrete Input: 3-point, sinking/sourcing, Discrete Output: 2-point, relay, (2) Form C (SPDT) relays.
ACN-ETH	\$113.00	IronHorse ACN series communication module, EtherNet/IP and Modbus TCP, 1 port, (1) Ethernet (RJ45) and (1) RS-232 (RJ45) port(s). For use with IronHorse ACN series drives. Mounting hardware included.



[ACN-EIO](#)



[ACN-ETH](#)



IronHorse ACN Series Accessories

Remote Keypad

The Remote LCD keypad provides advanced functionality for use with the ACN series drives. The unit provides enhanced text descriptions of each parameter and enhanced failure status monitoring. The unit allows backup and download of drive parameters.

ACN Remote Keypad			
Part Number	Price	Description	Drawing Links
ACN-LCD	\$65.00	IronHorse ACN series remote keypad, for use with IronHorse ACN series drives.	PDF
ACN-3MRC	\$23.50	IronHorse ACN series keypad mount, for use with ACN-LCD remote keypad. (1) 9.8ft/3m Ethernet patch cable included.	PDF
ACN-LCDKM	\$109.00	IronHorse ACN series keypad mount, NEMA 4X. For use with ACN-LCD remote keypad. (1) 9.8ft/3m Ethernet patch cable included.	PDF



[ACN-3MRC](#)



[ACN-LCD](#)



[ACN-LCDKM](#)



IronHorse ACN Series Accessories

Fuses/Circuit Breakers

Protection devices are essential to prevent damage to your ACN drive and application equipment. Please use the fuse specification chart below to select fuses that are applicable to your ACN drive. Only use UL-certified 600V fuses which comply with your local regulations.

Drive	Drive Voltage	HP (CT)	Fuse Amps (Class H or RK5)	Suggested ADC Class RK5 Fuses	Circuit Breaker	
					Size	Model*
ACN(ND)-20P5	200-240	0.5	10	ECSR10	5	UTE10033C
ACN(ND)-21P0	200-240	1	10	ECSR10	10	
ACN(ND)-22P0	200-240	2	15	ECSR15	15	
ACN(ND)-23P0	200-240	3	20	ECSR20	20	
ACN(ND)-25P0	200-240	5	50	ECSR50	30	
ACN(ND)-27P5	200-240	7.5	50	ECSR50	50	UTE10053C
ACN(ND)-2010	200-240	10	63	ECSR60	60	UTE10063C
ACN(ND)-2015	200-240	15	80	ECSR80	100	UTE100103C
ACN(ND)-2020	200-240	20	100	ECSR100	125	
ACN(ND)-40P5	380-480	0.5	10	ECSR10	3	
ACN(ND)-41P0	380-480	1	10	ECSR10	5	UTE10033C
ACN(ND)-42P0	380-480	2	10	ECSR10	10	
ACN(ND)-43P0	380-480	3	15	ECSR15	10	
ACN(ND)-45P0	380-480	5	32	ECSR30	20	
ACN(ND)-47P5	380-480	7.5	32	ECSR30	30	
ACN(ND)-4010	380-480	10	35	ECSR35	30	
ACN(ND)-4015	380-480	15	50	ECSR50	50	
ACN(ND)-4020	380-480	20	63	ECSR60	60	UTE10063C
ACN(ND)-4025	380-480	25	70	ECSR70	75	UTE100103C
ACN(ND)-4030	380-480	30	100	ECSR100	100	

* Manufactured by LS Electric. Not available at AutomationDirect.com



CAUTION: ONLY USE 600V CLASS H OR RK5, UL LISTED INPUT FUSES AND UL LISTED CIRCUIT BREAKERS. SEE THE TABLE ABOVE FOR THE CURRENT RATINGS FOR FUSES AND CIRCUIT BREAKERS.

MAXIMUM ALLOWED PROSPECTIVE SHORT-CIRCUIT CURRENT AT THE INPUT POWER CONNECTION IS DEFINED IN IEC 60439-1 AS 100 KA. DEPENDING ON THE SELECTED MCCB, THE ACN SERIES IS SUITABLE FOR USE IN CIRCUITS CAPABLE OF DELIVERING A MAXIMUM OF 100 KA RMS SYMMETRICAL AMPERES AT THE DRIVE'S MAXIMUM RATED VOLTAGE. THE FOLLOWING TABLE SHOWS THE RECOMMENDED MCCB FOR RMS SYMMETRICAL AMPERES.



IronHorse ACN Series Accessories

High Performance EMI Input Filters

The optional accessories below are available for use with the ACN drive. Selection of these accessories is application specific and may improve drive performance. Additional information regarding filter installation and operation is available in the AutomationDirect white paper, "Applied EMI/RFI Techniques."

Drive	Drive Voltage	HP (CT)	Roxburgh Filters Chassis Type 1ph *1	Roxburgh High Performance Filters *2	Roxburgh Max Performance Filters *3
ACN(ND)-20P5	200-240	0.5	RES90F03	KMF306A	MIF310
ACN(ND)-21P0	200-240	1	RES90F10	KMF310A	MIF310
ACN(ND)-22P0	200-240	2	RES90F16	KMF318A	MIF316
ACN(ND)-23P0	200-240	3	RES90F16	KMF318A	MIF316
ACN(ND)-25P0	200-240	5	RES90S20	KMF325A	MIF323
ACN(ND)-27P5	200-240	7.5	–	KMF336A	MIF350
ACN(ND)-2010	200-240	10	–	KMF350A	MIF350
ACN(ND)-2015	200-240	15	–	KMF370A	MIF375
ACN(ND)-2020	200-240	20	–	KMF3100A	MIF3100
ACN(ND)-40P5	380-480	0.5	–	KMF306A	MIF310
ACN(ND)-41P0	380-480	1	–	KMF306A	MIF310
ACN(ND)-42P0	380-480	2	–	KMF306A	MIF310
ACN(ND)-43P0	380-480	3	–	KMF310A	MIF310
ACN(ND)-45P0	380-480	5	–	KMF318A	MIF316
ACN(ND)-47P5	380-480	7.5	–	KMF318A	MIF323
ACN(ND)-4010	380-480	10	–	KMF336A	MIF330B
ACN(ND)-4015	380-480	15	–	KMF336A	MIF350
ACN(ND)-4020	380-480	20	–	KMF350A	MIF350
ACN(ND)-4025	380-480	25	–	KMF350A	MIF350
ACN(ND)-4030	380-480	30	–	KMF370A	MIF375

*1 -EMI rating for motor cable length: C2 to 75Ft, C1 to 30ft

*2 -EMI rating for motor cable length: C2 to 150Ft, C1 to 75ft

*3 -EMI rating for motor cable length: C2 to 300Ft, C1 to 150ft



IronHorse ACN Series Accessories

Line Reactors/Voltage Time Filters

Installing an AC Line Reactor on the input side of an AC motor drive can increase line impedance, improve the power factor, reduce input current, increase system capacity, and reduce interference generated from the motor drive.

Installing a load reactor or voltage time filter on the drive's output side can increase the high-frequency impedance to reduce the dV/dT and terminal voltage to protect the motor. Use output filters if the motor cable length exceeds 100ft

Line/Load Reactors & AC Output Filters											
Drive	Voltage	HP	Input (Amps)	Output FLA 3ph (Amps)	AC Input Line Reactor		AC Output Load Reactor		AC dVdT Output Filter		DC reactor values Induct./Current
					3ph	1ph	3ph	1ph	3ph	1ph	
ACN(ND)-20P5	200-240	0.5	2.2	5	LR2-20P5	LR2-20P2	LR2-20P5	LR2-20P2	VTF-246-CFG	VTF-46-DE	4/8.67
ACN(ND)-21P0		1	4.9	8	LR2-21P0	LR2-21P0	LR2-21P0	LR2-20P5	VTF-24-FH	VTF-246-CFG	
ACN(ND)-22P0		2	8.4	11	LR-23P0	LR-25P0	LR2-22P0	LR2-22P0	VTF-246-GJJ	VTF-24-FH	3/13.05
ACN(ND)-23P0		3	11.8	17	LR-23P0	LR-23P0	LR2-22P0	LR2-22P0	VTF-4-M	VTF-246-GJJ	1.33/18.45
ACN(ND)-25P0		5	18.5	24	LR-25P0	LR-2010	LR-25P0	LR2-22P0	VTF-46-LM	VTF-246-HKL	1.33/26.35
ACN(ND)-27P5		7.5	25.8	32	LR-2010	LR-2015	LR-27P5	LR-25P0	VTF-246-KMN	VTF-24-JL	1.60/32
ACN(ND)-2010		10	34.9	46	LR-2015	LR-2020	LR-2010	LR-25P0	VTF-246-LPQ	VTF-46-LM	1.25/43
ACN(ND)-2015		15	50.8	60	LR-2020	LR-2030	LR-2015	LR-2010	VTF-246-NRS	VTF-46-NP	0.95/61
ACN(ND)-2020		20	66.7	1.3	LR-2025	LR-2040	LR-2020	LR-2010	VTF-246-PSU	VTF-246-LPQ	0.70/75
ACN(ND)-40P5		380-480	0.5	1.1	2.5	LR2-40P5				VTF-46-DE	
ACN(ND)-41P0	1		2.4	4	LR2-41P0				VTF-246-CFG		
ACN(ND)-42P0	2		4.2	5.5	LR2-42P0				VTF-246-DGH		12/6.41
ACN(ND)-43P0	3		5.9	9	LR2-43P0				VTF-24-FH		8/8.9
ACN(ND)-45P0	5		9.8	12	LR2-45P0				VTF-46-DE		5.4/13.2
ACN(ND)-47P5	7.5		12.9	16	LR2-47P5				VTF-46-DE		3.20/17
ACN(ND)-4010	10		17.5	24	LR-4010				VTF-24-JL		2.50/25
ACN(ND)-4015	15		26.5	30	LR-4015				VTF-246-KMN		1.90/32
ACN(ND)-4020	20		33.4	39	LR-4020				VTF-246-LPQ		1.40/41
ACN(ND)-4025	25		43.6	45	LR-4025				VTF-246-MQR		1.00/49
ACN(ND)-4030	30		50.7	27	LR-4030				VTF-246-MQR		0.70/64



IronHorse ACN Series Accessories

Braking Resistors

Dynamic braking absorbs the motor regeneration energy when the motor is decelerated faster than it would if it was allowed to coast to a stop. The regeneration energy is dissipated by braking resistors. GS series brake resistors can be used with ACN drives. All drives have the braking function built-in and do not require a separate dynamic braking unit

Brake Resistors							
Drive	Voltage	HP (CT)	KW (CT)	150% @ 5% Duty Cycle*		ADC Brake Resistor +	
				Optimal Brake Resistor Sizing			
				Watt	Ohm	Qty	ADC part Number
ACN(ND)-20P5	230	0.5	0.4	100	300	1	GS-BR-300W250
ACN(ND)-21P0	230	1	0.75	150	150	1	GS-BR-400W150
ACN(ND)-22P0	230	2	1.5	300	60	1	GS-BR-300W070
ACN(ND)-23P0	230	3	2.2	400	50	1	GS-BR-1K5W043
ACN(ND)-25P0	230	5	4.0	600	33	2 series	GS-BR-1K2W015
ACN(ND)-27P5	230	7.5	5.5	800	20	1	GS-BR-1K0W020
ACN(ND)-2010	230	10	7.5	1200	15	1	GS-BR-1K2W015
ACN(ND)-2015	230	15	11	2400	10	1	GS-BR-1K5W012
ACN(ND)-2020	230	20	15	2400	8	2 parallel	GS-BR-1K2W015
ACN(ND)-40P5	460	0.5	0.4	100	1200	1	GS-BR-300W400
ACN(ND)-41P0	460	1	0.75	150	600	1	
ACN(ND)-42P0	460	2	1.5	300	300	1	
ACN(ND)-43P0	460	3	2.2	400	200	2 parallel	GS-BR-200W360
ACN(ND)-45P0	460	5	4.0	600	130	2 parallel	GS-BR-300W250
ACN(ND)-47P5	460	7.5	5.5	1000	85	1	GS-BR-1K0W075
ACN(ND)-4010	460	10	7.5	1200	60	1	GS-BR-1K5W043
ACN(ND)-4015	460	15	11	2000	40	1	
ACN(ND)-4020	460	20	15	2400	30	2 parallel	
ACN(ND)-4025	460	25	18.5	3600	20	2 parallel	
ACN(ND)-4030	460	30	22	3600	20	2 parallel	

*If the working rate is 10%, the rated capacity for braking resistance must be calculated at twice the standard.

+Resistor values are the closest available from ADC to the optimal values.



IronHorse ACN Series Accessories

VFD Suite

VFD Suite is the configuration software for the Automation Direct Ironhorse ACN variable frequency drive. It is designed to allow connection of a personal computer to the drives and perform a variety of functions:

- Create new drive configurations
- Upload/Download drive configurations
- Edit/Compare drive configurations
- Utilize Parameter Wizard for easy configuration
- Archive/Store multiple drive configurations on your PC
- Trend drive operation parameters
- Tune the drive PID loop
- View real time key operating parameters
- Start/Stop drive and switch directions, provided drive is set up for remote operation
- View drive faults
- Program Function blocks for simple control applications (18 steps maximum)

VFD Suite includes the ACN manual for complete instructions and parameter explanations. VFD Suite can be downloaded for free or from Automationdirect.com.

System Requirements

Category	Requirement
Windows	Windows 8/10*
Processor	1 GHz or higher
RAM	1 GB (32-bit) or 2 GB (64-bit)
HDD	16 GB (32-bit) or 20 GB (64-bit)
Graphics	Graphic card supporting MS DirectX 9
* Not compatible with Windows 11. Use USB-485M with Windows 11.	



Communication Cable



ACN-232C

Communication Cable		
Part Number	Price	Description
ACN-232C	\$91.00	IronHorse programming/communication cable, 3.2ft/1m cable length, RS-232 (RJ45 8P8C) to USB A. Not compatible with Windows 11 software. Instead use USB-485M PC adapter.