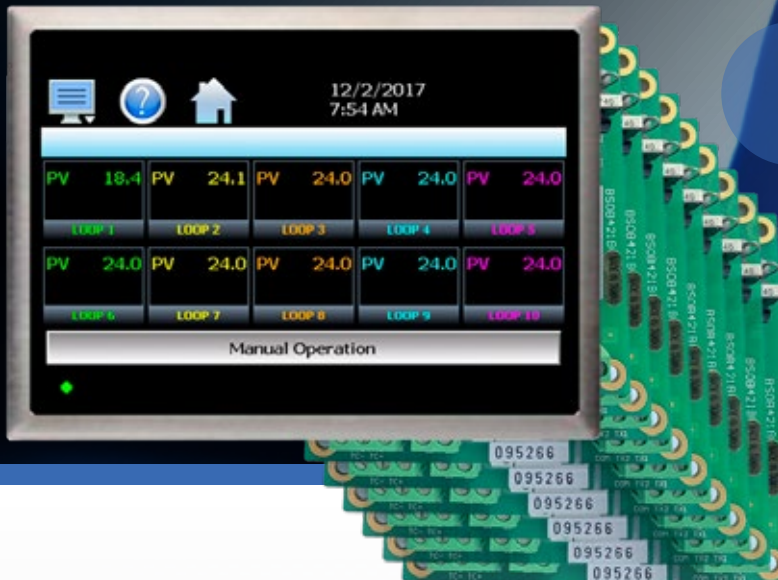


MCT-MC - 1 to 10 Zone Multi-Loop Controller

A multi-loop controller that operates like your favorite smartphone or tablet



EASY TO USE
TOUCH SCREEN
INTERFACE

Combines multiple control components into a easy to use, low cost system that requires ultra-slim display mounting solutions.



Touch screen-programmable
right out of the box!

+ PC software is NOT required

+ LAN/USB/Cloud import/export configuration

+ One button return to OEM configuration

- 1 to 10 PID loops - Remote control boards allow for easy mounting for “minimum” depth display requirements.
- Paperless recorder/data logger
- Trend viewer/data viewer
- File transfer/backup via LAN/WAN/Cloud. Configure via USB memory stick or cloud.
- Email/SMS on alarm
- Remote access

Simplicity

- + Touch screen, Slide Nav, menu, touch list user interface with Help on every view
- + Enable only those features required for the application; i.e. Program, Data Log, Security, Connectivity, etc.
- + 64 step profiler with 8GB storage. “One Touch” program entry with touch scroll lists and dynamic icon menus to eliminate costly learning curves.
- + Multi-lingual interface supports 11 languages – selectable by the touch of a button.

MCT-MC - Multi-Loop Controller

All the functionality of multiple devices in an easy to use low cost controller

The MCT-MC system combines 1 to 10 loops of control and monitor components utilizing an ultra slim display device that can be mounted in doors or areas where a 1/4 DIN controller is too deep. The color touch (4.3"/7") screen allows users to select PC type menu or smartdevice slide-nav icon navigation to match familiar personal preferences for operation. Secure email (SSL/TLS), SMS (text messaging), FTP, FileWeb and DataWeb/Cloud protocols allow the MCT-MC to interface and backup data to LAN/WAN/Cloud based systems and data bases, eliminating the need for additional data acquisition equipment.

The MCT-MC is equipped with a Web server and remote control via VNC from any smart device (smartphone/tablet/PC, etc.). Single touch notification provides loop, alarm, profile and system information in a simple touch scroll list from any screen location. All software functions are standard, no options to pay extra for!

Flexibility

- + From 1 to 10 loops of control, supports static control, program control, relay alarms, soft alarms and profile/manual events.
- + Up to 40 programmable alarms (30 relays, 10 soft) for flexible control management.
- + 4 level security with digitally signed audit trails and data files.
- + User configurable datalogging and historical data viewer.

Connectivity

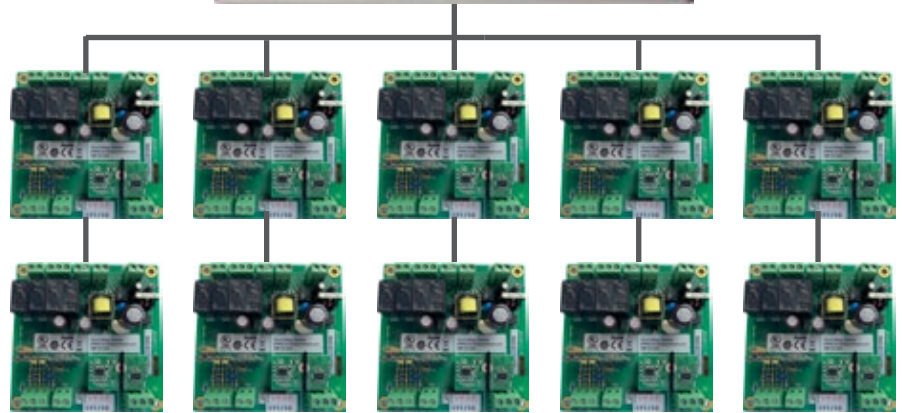
- + Email (SSL/TLS), SMS, FTP, FileWeb, DataWeb (SQL compatible) , VNC, NTS and Web page are all standard.
- + Remote View/Control using PC, Tablet or Smartphone via VNC.
- + Email/SMS on alarm, email files or send an email.
- + National Time Server (NTS) eliminates setting time/date manually.
- + Serial and TCP/IP Modbus RTU.

System Overview

The MCT-MC provides 1 to 10 remote board mounted loop controllers which include static or automatic program control. Run independent programs on each loop board or configure for master/slave operation (time and setpoint equal for all control loops w/master loop selectable).

This design allows for mounting of the display module in area's where a minimum depth is available.

The MCT-MC's multi-processor design provides a "no wait" response for instantaneous screen and control operations. Multi-Zone furnace, stress relieving and glass applications are made simpler and more cost effective as ever!



MCT-MC - Display Specifications

POWER

11-36VAC/VDC, 10W

DISPLAY

Display Type: TFT color touch display
Display Size: 4.3"/7"

Display Colors: 65,536

Resolution: 480 X 272 (4.3")
800 X 480 (7")

Display lifetime hours (nominal):
30,000 (for 4.3"), 50,000 (for 7")

Type: Resistive Analog - IP65

DISPLAY PROCESSOR

Type: PV210 CPU/1GHZ

DIMENSIONS/PANEL CUTOUT

4.3" Dimensions: 140(W) x 116(H) x 57(D)
4.3" mm Panel Cutout: 123(W) x 99(H) mm
7" Dimensions: 212(W) x 156(H) x 57(D)
7" mm Panel Cutout: 197(W) x 141(H) mm

RS-485 CONTROL MODULES

Loop Control Module (B42)

**See Order Matrix for Details*

DATA STORAGE

256MB Internal Flash
8GB SD (SLC) for file storage

CONNECTIVITY

Serial: Com2 (RS232/485), Com1 (RS232)
Ethernet: 10\100 baseT - USB: 1 host
Modbus Slave Protocol

(Serial and Ethernet TCP/IP Modbus slave protocols available simultaneously)

ENVIRONMENTAL AND PHYSICAL

Storage Temperature: -20 to 60 C

Operating Temperature: 0 to 50 C

Humidity: 10% to 90%, no condensation

Shock: 3 shocks per direction 11ms 10g

Vibration: 10 to 25.7 Hz: 0.75mm amplitude

25.7 to 150Hz: 1g 1oct/min. 10 sweeps

Insulation: 20M ohms minimum (500VDC)

Dielectric Strength: 2300Vac 50/60 Hz for 1 minute between power terminal and earth

Approval Standards: IP65

UL, CE, RoHS

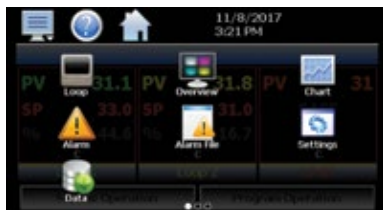
Touch Screen User Interface

The 4.3"/7" touch screen operates like your favorite smart phone or tablet. Menu or slide-navigation allows the user to treat screens, options and functionality like "apps" on their PC or favorite smart device. Familiar gestures like touch scroll lists (text or text with buttons) and notifications provide instant access to all system data from any screen for quick entry and selection of control functions. Standard toolbar provides common access to menus, help, home, alarms and notifications from all screens.

Menu Navigation



Icon/Page Navigation



Notification/Touch Lists



Content Sensitive Help on every view



Loop Control Modules

(LOOP CONTROL)

From 1 to 10 loops of control, with up to 4 outputs per loop control module. Control logic includes static (single setpoint), program (programmed time/setpoint generation for each independent loop or master/slave operation for all loops) including adaptive fuzzy logic and full PID control for each control loop module. Event (relay) control to replace manual push-buttons on panel or controlled by automatic program parameters. Multi-processor design provides immediate response for control and touch screen operations.

Side by side, stackable or "DIN" rail mounting solutions make installation a simple task. A single "two wire" interface connects the control boards to the display module so all "high voltage" control connections remain in the sub panel area to reduce wiring and maintenance. All connections from the control boards to display module are low voltage.



“ONE TOUCH” Profile Program Entry

PROGRAM ENTRY IS QUICK AND EASY

The MCT-MC provides program entry operations on a single screen. Touch scroll lists and menu icons provide dynamic operations based on user selections. Simple on/off buttons within the scroll lists eliminates navigating through multiple screens to complete program entry tasks.

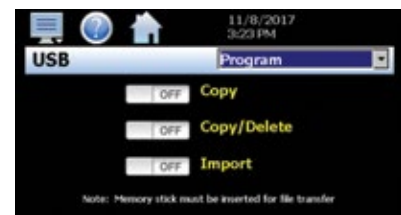
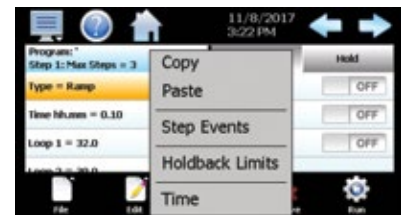
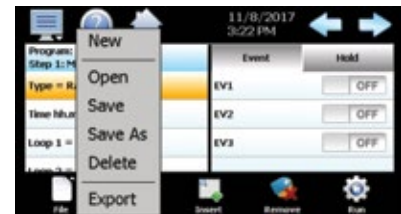
64 programmable steps include ramp, soak, jump and jump cycles. Loop setpoints, step events, step hold and repeat functions provide advanced program functionality with unlimited program storage (limited only by 8GB of memory).

Copy and paste functions allow quick entry of step data as well as copying step events to all remaining program steps to reduce complex program tasks.

Slide out numeric keypads and program control windows allow the user to maintain view of the background window to reduce screen clutter. Transparent dialogs and pop-up menus provide quick operations for all profile functions without leaving the main profile entry screen.

Profile run status is available in detail or from loop and overview screens as well as notification drop down touch lists which are available on all of the MCT-MC runtime screens.

The help icon in the command bar provides context sensitive information for all views including Profile Program Entry.

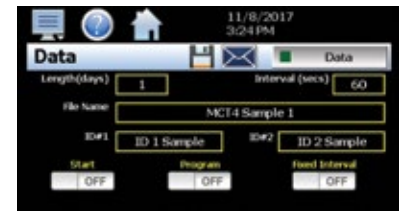


USB
import/export
of profiles

Data Logging

The MCT-MC supports data logging of all process variables with 8GB of storage standard. Filename, lot number, batch number, log interval and days to log are all configurable from the front touch screen. Program log control allows the user to start/stop logging using the automated programmer with the program name used as the datalog name. “Always Logging” startup option provides the ability to enable the MCT-MC to log at all times to maintain 24/7 logging operation. The “Days To Log” option allows the user set the time in days before a new file is started to sync data files to match product cycles as well as keeping data file size manageable.

Configurable Datalog



Historical Data Viewer

MCT-MC includes a historical data viewer that allows trend chart viewing of data files stored on the device (8GB max). Selection of data points, data start/end time along with drag and zoom trend options (with legends) provide a quick and easy view of any batch run for any date and time.

Historical Viewer



Digital Signatures

MCT-MC data files and audit trails are digitally signed to maintain data integrity and meet regulatory requirements for digital (vs. paper) operation. This is different from data file encryption since the digital signature protects the file from being altered in any way. Additional signatures (unlimited) can be added by authorized users along with text to describe the signature (i.e. batch passed, setpoint change, etc.).

Digital Signatures

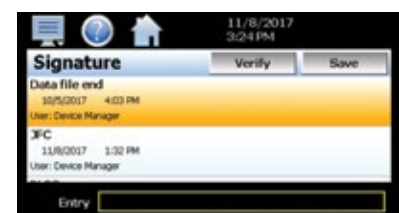


Chart Trend View

Four real time charts configurable to display process variable, setpoint and percentage output of each control loop (up to 6 values per view) over a selectable time period of 4-minutes to 24 hours. With configurable left and right axis, automatic or defined chart scales and finger pinch on the fly zoom, the 4 configurable charts allow an operator a 1-button touch to view recent process history without opening a data log file.

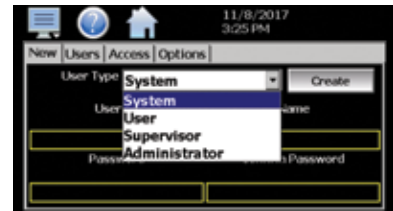
Chart Trend View



User-Based Security

MCT-MC includes an easy to configure, full user based/user rights security for system, user, supervisor and administrative levels. Up to 30 users supported with each user having the option of type assignment (user, supervisor, etc.). Each function in the MCT can be enabled or disabled for each user type. The user decides which options each user type has access to rather than a “number” based system which can include functions not desired for most “process secure” operations.

User-Based Security



Password Aging and Verification

Password aging may be enabled starting from the day a user is entered from 1 to 365 days. With verification enabled users must login anytime an action is attempted.

Password Aging and Verification



Audit Trail Entries

MCT-MC includes full audit trail entries for all user activity. Any process change must pass the security check and is written to the audit trail. Audit trail includes date, time, user name and user action. (example: Loop1 setpoint change from 21.0 to 23).

Audit Trails



Full user based and
user rights security
for up to 30 users

Loop Control and Monitor Only Operation

Any of the MCT-MC input modules can be configured for loop control or monitor only. This provides the ability to easily add a monitor point while the MCT-MC dynamically configures it's setup for "monitor only" view and operation; setpoint & percent output are not shown. Monitor loops support process alarms.

Dynamic Screens/Options Configuration

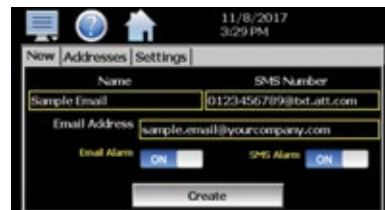
The MCT-MC includes all software features as standard. No options to purchase. All functionality can be enabled or disabled right from the configurator application from the front touch screen. This allows users to configure the MCT-MC to meet their specific requirements without external PC's, cables, routers or additional software to learn, minimizing service and support costs.

Profile Program Entry And Control

The MCT-MC includes an advanced profiler with ramp, soak, jump, cycle, hold and event functions for each step. Up to 64 steps per profile with a virtually unlimited number of profiles included as standard (8GB max). "One Touch" program entry provides all functions on a single screen using familiar touch scroll lists for setpoint entry and option settings. Program slide out windows allow the user to select and operate programs without losing focus on the background window which reduces screen clutter and learning curves.

Email/SMS

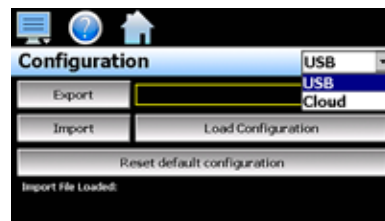
MCT-MC supports secure email client functionality (Secure Socket Layer/Transport Layer Security/None). Alarms can be automatically configured to be sent as an email or text notification as well as end of automated program notices. Send alarm, audit and data files as attachments.



Import/Export Configurations

MCT-MC includes full import and export of complete controller configurations using a standard USB memory device or via cloud transfer (free service at fdUtil.com). Saved configurations can be imported to any MCT-MC for complete setup in minutes. This eliminates searching for manuals or long configuration setups for new installations or maintenance situations. Cloud configurations are encrypted and digitally signed to provide enhanced security for industrial applications.

An OEM may set their configuration as the MCT-MC "Default Configuration". When so configured this provides an end user a 1-button touch to reset the unit to an OEM's configuration saving both the user and OEM downtime and support costs.



File Management

LAN/WAN/CLOUD PROTOCOLS

MCT-MC includes FTP (File Transfer Protocol) and FileWeb transfer (https:// encrypted communications) of all file data from the controller. DataWeb protocols allow the MCT-MC to transfer real time/historical process information to secure data bases via LAN, WAN or Cloud based manufacturing systems using standard SQL (Structured Query Language) data interfaces . This eliminates the need for additional data acquisition or network hardware.

USB/CLOUD BACKUP AND CONFIGURATION

File transfer utilities allow export of all data to a standard USB memory device or Cloud storage (configurations free at fdcUtil.com). Internal memory can be cleared after export to provide "maintenance free" storage operation.

Mechanical and Soft Alarms

The MCT-MC provides up to 10 soft alarms. Each B42 supports up to 3 mechanical alarms and 1 soft event input alarm. Alarm types include process high/low, deviation high/low, deviation band, end of program and digital input.

11 Languages Supported For Global Usage

MCT-MC provides instant selection of 11 languages providing global usage for shipment anywhere in the world (no reboot or special order codes required). Chinese Simplified, Chinese Traditional, English, French, German, Italian, Japanese, Korean, Portuguese, Russian and Spanish supported with a single touch.

Remote Control/Monitor from PC/SmartPhone/Tablet

MCT-MC includes a remote VNC server for remote monitor or control and a monitor only web server from any smart device anywhere, anytime.

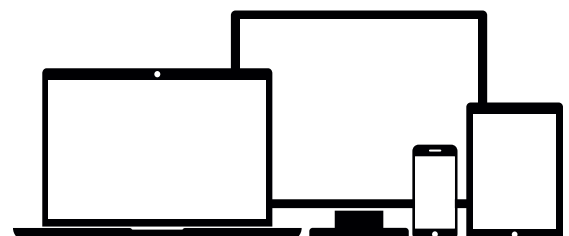
FTP | FileWeb | DataWeb



File Management



Languages



B42 Module Specification

INPUT SPECIFICATIONS*

Type	Range	Accuracy @ 24 C	Input Impedance
J	-120 C 1000 C (-184 F 1832 F)	+/-2 C	2.2 Mohms
K	-200 C 1370 C (-328 F 2498 F)	+/-2 C	2.2 Mohms
T	-250 C 400 C (-418 F 752 F)	+/-2 C	2.2 Mohms
E	-100 C 900 C (-148 F 1652 F)	+/-2 C	2.2 Mohms
B	0 C 1820 C (-32 F 3308 F)	+/-2 C (200-1820 c)	2.2 Mohms
R	0 C 1767.8 C (-32 F 3214 F)	+/-2 C	2.2 Mohms
S	0 C 1767.8 C (-32 F 3214 F)	+/-2 C	2.2 Mohms
N	-250 C 1300 C (-418 F 2372 F)	+/-2 C	2.2 Mohms
L	-200 C 900 C (-328 F 1652 F)	+/-2 C	2.2 Mohms
C	0 C 2315 C (32 F 4199 F)	+/-2 C	2.2 Mohms
P	0 C 1395 C (32 F 2543 F)	+/-2 C	2.2 Mohms
PT100 (DIN)	-210 C 700 C (-346 F 1292 F)	+/-0.4 C	1.3 Kohms
PT100 (JIS)	-200 C 600 C (-328 F 1112 F)	+/-0.4 C	1.3 Kohms
MV	-8mV 70mV	+/-0.05%	2.2 Mohms
MA	-3mV 27mA	+/-0.05%	70.5 Ohms
V	-1.3V 11.5V	+/-0.05%	302 Kohms

*When subject to the necessary field calibration, the MCT-MC is suitable for use in Nadcap applications in all furnace classes as defined in AMS2750F clause 3.3.1.

- Resolution:** 18 bits
- Sampling Rate:** 5 times / second
- Maximum Rating:** -2VDC minimum, 12VDC maximum
(1 minute for mA input)
- Temperature Effect:** A1.5uV/ C for all inputs except mA input
A3.0uV/ C for mA input
- Sensor Lead Resistance Effect:**
T/C: 0.2uV/ohm
3-wire RTD: 2.6 C/ohm of resistance difference of two leads
2-wire RTD: 2.6 C/ohm of resistance sum of two leads
- Sensor Break Responding Time:**
Within 4 seconds for TC, RTD and mV inputs,
0.1 second for 4-20 mA and 1 - 5VDC inputs.
- Burn-out Current:** 200 nA
- Common Mode Rejection Ratio (CMRR):** 120dB
- Normal Mode Rejection Ratio (NMRR):** 55dB
- Sensor Break Detection:** Sensor open for TC, RTD and mV inputs,
Sensor short for RTD input
below 1 mA for 4-20 mA input,
below 0.25VDC for 1 - 5VDC input,
unavailable for other inputs.
- Electrical Isolation:** Optical isolation; 1500V~ (ac) minimum, between input signals and power supply circuit.

OUTPUT SPECIFICATIONS:

- Relay Rating:** 2A/240 VAC, life cycles 200,000 for resistive load
- Pulsed Voltage:** Source Voltage 5V @30mA, current limiting resistance 66 ohms
Source Voltage 14V@40mA, current limited at 70mA

Linear Output (B42):

- Resolution: 15 bits
- Output Regulation: 0.02% for full load change
- Output Settling Time: 0.1 sec. (stable to 99.9%) Isolation
- Breakdown Voltage: 1000 VAC
- Temperature Effect: +/- 0.01% of span per degree C

Triac (SSR) Output:

- Rating: 1A/240 VAC
- Inrush Current: 20A for 1 cycle
- Min. Load Current: 50 mA rms
- Max. Off-state Leakage: 2 mA rms
- Insulation Resistance: 1000 Mohms min. at 500 VDC
- Dielectric Stength: 2500 VAC for 1 minute

Analog Retransmission (B42):

- Output Signal: 4-20 mA, 0-20 mA,
0 - 5VDC, 1 - 5VDC, 0 - 10VDC
- Resolution: 15 bits
- Accuracy: +/-0.05% of span +/-0.0025%/ C Load
- Resistance: 0 - 500 ohms (for current output)
10K ohms minimum (for voltage output)
- Output Regulation: 0.01% for full load change
- Output Settling Time: 0.1 sec. (stable to 99.9%)
- Isolation Breakdown Voltage: 1000 VAC min. Integral
- Linearity Error: +/-0.005% of span
- Temperature Effect: +/-0.0025% of span per degree C
- Saturation Low: 0 mA (or 0 VDC)
- Saturation High: 22.2 mA (or 5.55VDC, 11.1VDC min)
- Linear Output Range: 0-22.2mA (0-20mA or 4-20mA)
- Volts DC: 0 - 5.55VDC (0 - 5VDC, 1 - 5VDC)
0 - 11.1VDC (0 - 10VDC)

CONTROL FUNCTION (B42):

- Control Action:** Direct and reverse
- Proportional Band:**
Temperature: 0.1 to 500C (0.1 to 900F)
Linear Input: 0.1 to 900.0
- Reset (Auto):** 0 to 3600 seconds
- Rate (Derivative):** 0 to 900.0 seconds
- PB Offset:** 0 to 100%
- Dual PID Heat/Cool (bimodal):**
Cool Proportional Band: 50 to 300% of heat PB
Proportional Deadband: -36.0% to +36.0% of heat PB
- Time Proportioning Cycle Time:** 0.1 to 90 seconds
- On-Off / Alarm Hysteresis (B42):** 0.1 to 50C (0.1 to 90.0F)

EVENT INPUT SPECIFICATIONS:

- Logic Low: -10V minimum, 0.8V maximum
- Logic High: 2V minimum, 10V maximum

APPROVAL STANDARDS:

- UL / cUL: UL 61010C-1
- EN: EN 61010-1 (IRC-1010-1)
- EMC: EMC 61326
- RoHS: RoHS 2.0 Compliant, W.E.E.E.

SPECIFICATION AND FEATURE REVIEW

COMMAND BAR ICONS NAVIGATION, HELP & HOME

The Main Command Bar located on the top of the display provides easy & intuitive 1-touch access from anywhere in the system to System Navigation, Help and configured Home view

Home brings the user back to the system "Home View". The Home icon can be configured for the following standard views;

- Loop view: includes PV & SP digital display, PV min/max, PID % Output, Auto-Manual, event & profile access and more.
- Overview: all loops, profile and event status
- Chart View (trend up to the last 24 hours from system RAM) supporting 4 Trend View charts with up to 6 values per chart
- Alarm View or Alarm File.

Help offers content sensitive text for every view /page in the user configured language.

Navigation provides access to the configured menu system, traditional drop down or icon.

SECURITY AND AUDIT TRAIL:

- Supports up to 30 users over four user groups with access to 40+ functions restricted by user group.
- Supports password aging and verification.
- Operator Audit Trail provides history for all user activity that includes date, time, user name and action; i.e. Loop SP change from 55.2 to 103.5.

PROFILE RAMP/SOAK:

- Each loop can run an independent program or operate in master retransmit mode (same set point/time for all loops).
- Program Operation: Via touch screen or event input
- Profile Name: Free form 16 character naming convention.
- Global Profile Configuration:
 - Start from PV or static SP
 - Guaranteed Soak & Ramp band
 - Power Fail / Recovery: Continue from last SP value, PV or static mode.
- Profile Segments: (maximum of 64)
- Guaranteed Soak & Ramp per step
- Events: up to 3 per step (based on loop config).
- Jump-To Step: configurable per step
- Profile End Alarm
- Configurable Profile End Logic:
 - Current (Static) Control SP: the Set Point & Event status prior to Profile Start is loaded at end of the Profile.
 - Final SP of Profile with all Events off

ALARMS

- Up to 30 alarms, 10 soft configurable, up to 3 alarm outputs per B42.
- Loop* Alarm Types: Process High & Low, Deviation High & Low, Deviation Band, Event Input and End of Profile.

* B42 configured as Monitor Input (no PID control configurable only with Process alarms.

Alarm Mode:

- Normal or Hold (on start-up Hold mode will not activate if in alarm condition and arm once out of alarm condition).
- Silent Alarm, activation does not indicate alarm or write to alarm log file.

Alarm outputs configurable as latching or nonlatching.

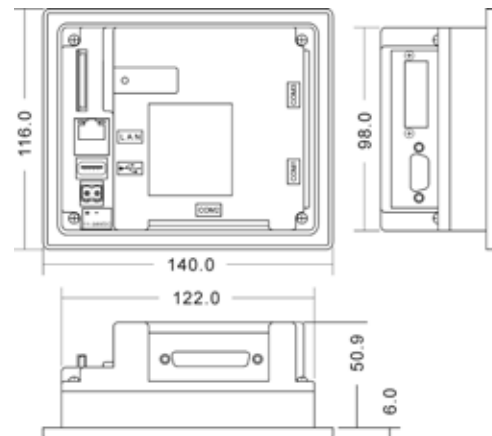
DATA ACQUISITION:

- Data log PV, SP and PID percent output.
- File name: Free form 16 character appended by time/date or the profile name if started with a profile.
- File Start/Stop: user on-demand, on system boot or profile ramp-soak start/end.
- Data Log interval: configurable 1-second to 31-minutes.
- File Interval: configurable to set time in days (1 to 31) to end and start a new file. This allows syncing files to match product cycles as well as keeping file size manageable.
- ID#1 and ID#2 fields allow user to enter specific information such as a Batch/Lot/Cloud ID information that is associated with the data file.
- Operator Comments/Events: Unlimited operator comments/events linked to each file
- File Type: Data Log files are saved in .csv format.
- Digital Signatures: Automatic system as well as user entered signatures.
- Historical Data Viewer: View data log files on the display. Chart is auto-scaled on an X & Y axis for time and units.

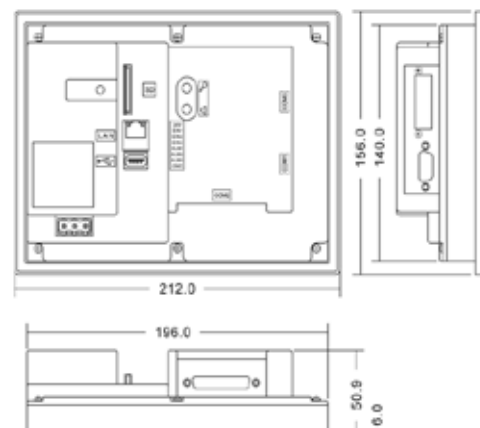
EVENT INPUTS

- B42: 1 event input configurable for one of the following functions.
- B42: Profile Run, Hold, Run/Hold, Abort, Step Advance, Failure Transfer (Outputs), Alarm Input (indication only) and Loop Status Input

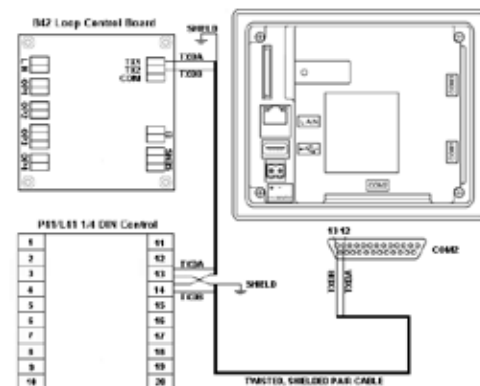
DISPLAY DIMENSIONS 4.3"



DISPLAY DIMENSIONS 7"



DISPLAY CONNECTIONS TO B42 BOARDS



Note: Only two loop control boards shown, up to 10 loop control boards (B42) can be connected via two-wire, RS-485 parallel wiring.

Enter a number in each box which corresponds to the specifications you want for the display module when ordering the MCT-MC system.



DISPLAY/SOFTWARE

4ML: FDC-0450-1011-000BN 4.3" display, with (SD-4ML) software 11-36VAC/VDC

7ML: FDC-0450-1011-000BN 7" display, with (SD-7ML) software 11-36VAC/VDC

XX: Special Order Code

DOCUMENTATION

0: None (available at www.futuredesigncontrols.com)

C: CD

U: USB Stick

SPECIAL ORDER CODE

00: None

XX: Special Order Code

MCT-MC Sample Part Numbers

The MCT-MC consists from 2 to 11 individual part numbers. These include the display (Item 1) and loops #1 through #10 (items 2 through 11)

(Three loop shown below)

Item #	Product	Sample Part Number	Description
1	Display	MCT-4ML-01U00	FDC-0450-1011-000BN 4.3" display, 11-36 VDC power input, with MCT-MC (SD-4MB) software and documentation on USB memory stick.
2	Loop #1	B42-416611D0CA	B42 with 90-250VAC power input, T/C or RTD input, output #1 1A Triac, output #2 1A Triac, output #3 relay, output #4 relay, RS485, no display and default communication address of 1.
3	Loop #2	B42-436611D0CB	B42 with 90-250VAC power input, mA input, output #1 1A Triac, output #2 1A Triac, output #3 relay, output #4 relay, RS485, no display and default communication address of 2.
.	Loop #3	B42-416611D0CC	Same as item 2 (loop 1) with Modbus address 3
.	Loop #4	B42-416611D0CD	Same as item 2 (loop 1) with Modbus address 4
.	Loop #5	B42-416611D0CE	Same as item 2 (loop 1) with Modbus address 5
.	Loop #6	B42-416611D0CF	Same as item 2 (loop 1) with Modbus address 6
.	Loop #7	B42-416611D0CG	Same as item 2 (loop 1) with Modbus address 7
.	Loop #8	B42-416611D0CH	Same as item 2 (loop 1) with Modbus address 8
.	Loop #9	B42-416611D0CI	Same as item 2 (loop 1) with Modbus address 9
11	Loop #10	B42-436611D0CJ	B42 with 90-250VAC power input, mA input, output #1 1A Triac, output #2 1A Triac, output #3 relay, output #4 relay, RS485, no display and default communication address of 10.
	Options		
	Power Supply	PS5R-VB24	DIN rail mount, 85-264VAC power input, Output 24VDC 15W (0.6A)
	Cable	CA2011-3D	Cable from display to loop control (DB25 connector (display), twisted pair leads, shielded, 10ft).

ORDERING INFORMATION

B42 Enter a number in each box which corresponds to the hardware MATRIX required when ordering the B42 control module.



POWER INPUT

- 4: 90-250 VAC, 47-63 HZ
- 5: 11-26 VAC or VDC

SIGNAL INPUT

- 1: Standard Input
 - Thermocouple: J, K, T, E, B, R, S, N, L, C, P
 - RTD: PT100 DI, PT100 JIS
 - Voltage: 0-60mV
- 5: 0-10V, 0-1V, 0-5V, 1-5V
- 6: 0-20/4-20mA
- 9: Special Order

OUTPUT 1

- 0: None
- 1: Relay rated 2A/240VAC (SPST)
- 2: SSR Driver 5 VDC @ 30 Ma
- 3: 4-20mA / 0-20mA Isolated
- 4: 1-5V / 0-5V/0 - 10V Isolated
- 6: Triac output 1A / 240VAC,SSR
- C: SSR Driver 14 VDC @ 40 Ma

OUTPUT 2

- 0: None
- 1: Relay rated 2A/240VAC (SPST)
- 2: SSR Driver 5 VDC @ 30 Ma
- 3: 4-20mA / 0-20mA Isolated
- 4: 1-5V / 0-5V/0-10V Isolated
- 6: Triac output 1A / 240VAC,SSR
- 7: Transmitter power supply 20 VDC/25 ma Isolated
- 8: Transmitter power supply 12 VDC/40 ma Isolated
- A: Transmitter power supply 5 VDC/80 ma Isolated
- C: SSR Driver 14 VDC @ 40 Ma

MODBUS ADDRESSING

- CA: Modbus Communication Address #1
- CB: Modbus Communication Address #2
- CC: Modbus Communication Address #3

DISPLAY BOARD AND CABLE

- 0: None
- 3: Display Board with 300mm connection cable
- 4: Display Board with 1000mm connection cable

Note: If "0", default factory address is Modbus address #1.

OUTPUT 5

- D: RS-485 Modbus RTU interface Isolated

OUTPUT 4

- 0: None
- 1: Relay rated 2A/240VAC (SPST)
- 2: SSR Driver 5 VDC @ 30 Ma
- 3: Retransmission 4-20 / 0-20mA, isolated
- 4: Retransmission 1-5 / 0-5 / 0-10VDC, isolated
- 6: Triac output 1A / 240VAC,SSR
- 7: Transmitter power supply 20 VDC/25 ma Isolated
- 8: Transmitter power supply 12VDC/40 ma Isolated
- A: Transmitter power supply 5VDC/80 ma Isolated
- C: SSR Driver 14 VDC @ 40 Ma

OUTPUT 3

- 0: None
- 1: Form C relay rated 2A/240VAC (SPDT)
- 2: SSR Driver 5 VDC @ 30 Ma
- 6: Triac output 1A / 240VAC,SSR
- 7: Transmitter power supply 20 VDC/25 ma Isolated
- 8: Transmitter power supply 12VDC/40 ma Isolated
- A: Transmitter power supply 5VDC/80 ma Isolated
- C: SSR Driver 14 VDC @ 40 Ma

CONTROL SYSTEM OPTIONS (ordered seperately as needed)

Display Power Supply (input 100-240VAC / Output 24VDC)

DIN Rail Mount: PS5R-VB24 15W power supply (0.65A)
 DIN Rail Mount: PS5R-VD24 60W power supply (2.5A)

Note: See manual for HMI and control board power supply requirements.

System Reset Timer

GE1A-C10HA110/SR2P-06 Reset Timer and socket (DIN RAIL)

Note: Timer is recommended for proper system restart due to momentary power interruptions (<500ms) which can cause erroneous operation.

USB Memory Stick

UDF115-8GB 8GB High Capacity USB Memory Stick (3VDC)

Replacement SD Memory Card

SD-4ML 8GB High Capacity SD Memory Card (preloaded with MCT-MC application software)

Printed Operators Manual

(MCT-MC_4.3/7_User_Manual.pdf) MCT-MC 4.3/7 User Manual

USB Cables & Accessories

WPUS-BAX-05M USB panel mount adapter
 WPCVR-USB USB waterproof IP67 cover (for above)
 DG9025MF3 25 pin 90° adapter
 DG909MF2 9 pin 90° adapter

Cable: Touch Screen Display to B42 Control Board

CA2011-3D: Cable (3 meters) from Display to B42 control.

Note: Consult factory for other lengths & options

B42 Programming Display Board

B42 Display Board 300 mm cable: 3020B42-00300A-00/300
 B42 Display Board 1000 mm cable: 3020B42-00300A-00/1K



FUTURE DESIGN CONTROLS

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