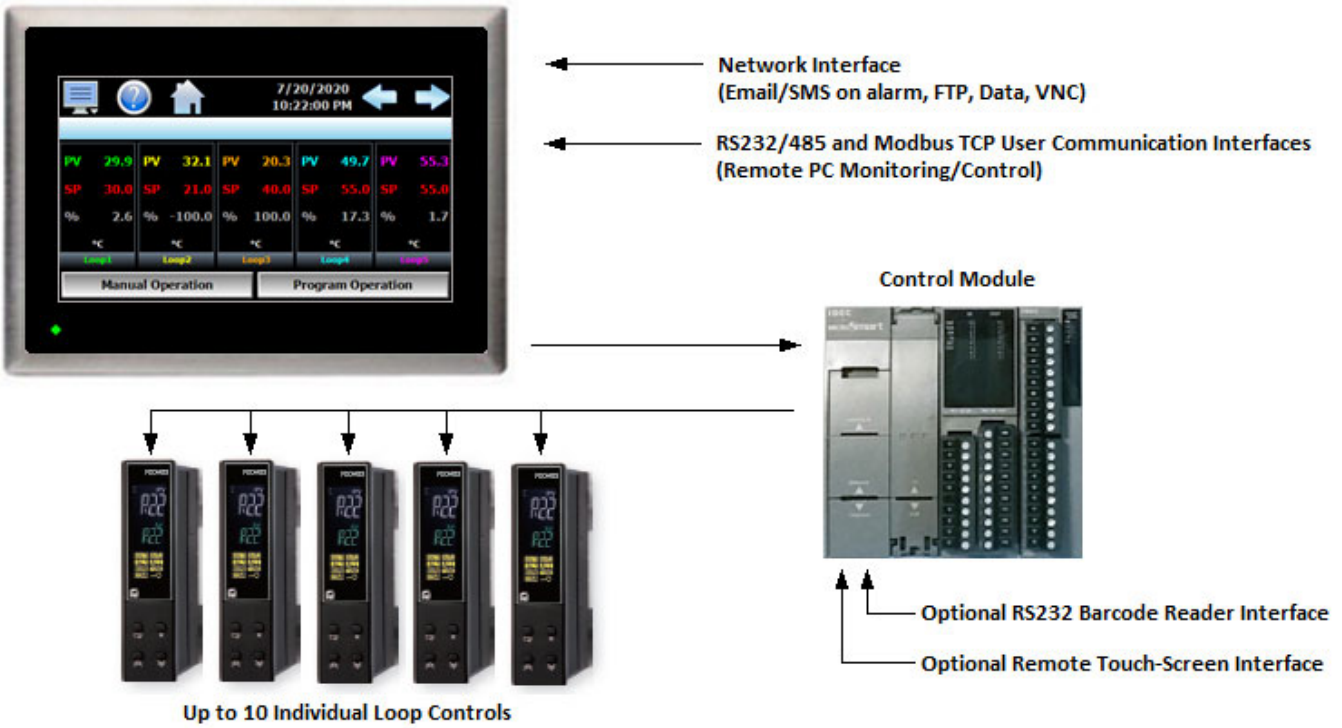
MCT-CM Multi-loop Control System
Part Number Matrix

The MCT-CM Multi-loop Control System combines all of the features of typical loop controls, video/chart recorders and data logging systems into a single, intuitive device. Email (supporting SSL/TLS), SMS (text messaging), FTP, FileWeb, DataWeb (file transfer protocols for automated data backup and web database interface) and remote viewing/control (via Web server/VNC server) are standard with the MCT-CM and can be accessed via LAN/WAN using a PC, tablet or smart phone device.

The MCT-CM is offered in 4.3" and 7" color touch screen interfaces with standard "Smart Device" user interface features for multi-loop OEM control applications (up to 10 loops). All loop configuration and runtime user access are configurable at the device with no PC software required. OEM's have the ability to configure runtime features (screen availability, menus, language, etc...) to easily customize the system to their requirements. These configurations can be imported/exported to any other MCT-CM device for setup within minutes by the touch of a button.

In addition to a maximum of ten loops of control, the MCT-CM can also provide up to an additional 15 inputs for process monitoring for a total of 25 process inputs. The base system is provided with eight 24Vdc digital inputs (DI) and 8 relay outputs. The MCT-CM can be expanded to a total of 16 digital inputs and 32 digital outputs. It also provides the capability of accepting up to 14 analog inputs for remote set point control as well providing 7 analog outputs capable of retransmitting system variables (PV, SP or %Out) to other devices. The 0-10Vdc or 4-20mA user selectable signals are provided through the addition of optional analog expander cards.

Individual process controls, one for each loop in the system, provide reliable, consistent and accurate control by distributing the process control requirements of the system among multiple processors. Each loop control provides full auto tune functionality with high resolution, universal process inputs. When coupled with the built-in ramping programmer, it allows for automatic, timed control of all processes and outputs of the system.



MCT-CM Multi-loop Control System
Part Number Matrix

The MCT-CM is ordered as three components: the color touch screen, firmware and the Control Module (CM) with its assorted options. The loop controls are ordered separately.

MCT-CM Sample Part Numbers

(minimum of 3 component part numbers is required; (1) Display, (2) Firmware and (3) Control Module)

Item #	Product	Sample Part Number	Description
1	Display	FDC-0450-1011-000BN	4.3" display, 11-36 VDC power input, SD slot, Ethernet
2	CM Firmware	SD-4CM	CM Control Module Firmware (inserted into display SD slot)
3	Control Module	CM6-0000-010	Base CM, no optional serial communications, DI, DO, AI or AO and (1) 8-chanel monitor card (T/C)
	Options		
	Power Supply	PS5R-SV24	100-240VAC power input, Output 24VDC 60W (2.5A)
	Cable	CA-232-8A	Cable from display to control module (DB9 connector (display), pigtail on CM, (8ft)
	Loop Controls	9300-413001	9300 1/16 DIN control, input #1 universal (T/C, RTD, mA &VDC) Input #2 linear (mA & VDC may be used as monitor input) Output #1 mA PID, RS485 communications

Item #1 — Model FDC-0450 (4.3") / FDC-0730 (7") Color Touch Screen

FDC – 0450 – / FDC – 0730 –	1	0	1	1	0	0	0	B	N
Order Matrix #	1	2	3	4	5	6	7	8	9

(1) Power Input
1: 11 to 36 VDC

(2) Sound Output
0: None

(3) SD Card Slot
1: Yes

(4) Ethernet
1: Yes

(5) Network
0: None

(6) Software
0: None

(7) Enclosure
0: Standard

(8) Overlay Color
B: Black Overlay

(9) Special Code
N: Neutral Overlay (no name/logo)

Item #2 — MCT-CM Control Software *(included with display)*

Order Matrix # SD - [ ] CM

(order #4 designates software for i4.3 display and #7 designates software for i7 display; (i.e. SD-4CM = SD for FDC-450 HMI)

MCT-CM Multi-loop Control System
Part Number Matrix and Pricing

Item #3 **Control Module** *(loop controls ordered separately)*

CM6 - ☐ ☐ ☐ ☐ ☐ ☐ ☐ (note 3)

Order Matrix # 1 2 3 4 5 6 7

1. Control Module (CM) Application Software (Note 3)

0: CM22: CM software for SIF52 to FDC C-Series R22 (note 1)

2: CM30: CM software for SIF52 to FDC 300 Series (note 1)

7: CM22: CM software for US2000B to FDC C-Series R22 (note 1)

8: CM30: CM software for US2000B to FDC 300 Series (note 1)

9: Special

Note: As specified above the CM includes the appropriate SD card to support dual communication to the HMI and loop control(s) via the FC6A-SIF52 or the separate component US2000B.

The USB2000B requires a Cat5 patch cable to connect to FC6A PLC and 9-pin null modem cable to the HMI Display; see page 4

2. Optional Serial Communications (Note 2)

0: None
1: FC6A-PC3 RS485 Modbus RTU port (slave)*
2: FC6A-PC1 RS232 port for Barcode Reader **
3: Both FC6A-PC3 and FC6A-PC1

Note: Order of any above communication option will also include the required FC6A-HPH1 cartridge adapter.

*RS485 Modbus RTU port allows installation of remote display.
**Bar Code Reader input is compatible for serial-based barcode readers.

3. Optional Digital Inputs (Note 2)

0: None
1: FC6A-N08B1 8-digital input card (24Vdc)
2: FC6A-N08A11 8-digital input card (120Vac)

Note: The above optional digital inputs (DI) are in addition to the eight 24Vdc digital inputs that are standard on the CM; system maximum of 16 digital inputs.

4. Optional Digital Outputs (Note 2)

0: None
1: FC6A-T08P1 8-digital output– TTL 24Vdc (source)
2: FC6A-R081 8-digital output - Relay (240Vac 2-amps)
3: FC6A-T16P1 16-digital output– TTL 24Vdc (source)
4: FC6A-R161 16-digital output - Relay (240Vac 2-amps)

Combination DO modules (maximum of 24 optional DO)

A: Item 1 / qty 2
B: Item 1 / qty 3
C: Item 2 / qty 2
D: Item 2 / qty 3
E: Item 1 qty 2 & Item 2 qty 1
F: Item 1 qty 1 & Item 2 qty 2
G: Items 1 & 3
H: Items 1 & 4
J: Items 2 & 3
K: Items 2 & 4

Note: The above optional digital outputs (DO) are in addition to the 8 DO that are standard on the CPU; maximum of 32 DO.

5. Optional Analog I/O (Note 2) (DIN Rail Mount – plug into CM)

0: None
1: 1 A-IO card **FC6A-L03CN1** (4-20mA or 0-10Vdc IO)
2: 2 A-IO cards **FC6A-L03CN1** (4-20mA or 0-10Vdc IO)
3: 3 A-IO cards **FC6A-L03CN1** (4-20mA or 0-10Vdc IO)
4: 4 A-IO cards **FC6A-L03CN1** (4-20mA or 0-10Vdc IO)
5: 5 A-IO cards **FC6A-L03CN1** (4-20mA or 0-10Vdc IO)
6: 6 A-IO cards **FC6A-L03CN1** (4-20mA or 0-10Vdc IO)
7: 7 A-IO cards **FC6A-L03CN1** (4-20mA or 0-10Vdc IO)

Note: Each I/O card has qty 2 Remote Setpoint input and quantity 1 Retransmission output configurable for PV, SP or %Out

6. Optional Monitor Inputs (Note 1) (serial connection to CM)

0: None **0: None**
1: IO-8TCS: **(8-thermocouple input module - isolated)**
2: IO-6RTD: **(6-RTD input module)**
3: IO-8AIIS: **(8- input module 0-20 / 4-20mA - isolated)**
4: IO-8AIVS: **(8-analog input 0-10 / 2-10Vdc—isolated)**

Combination Monitor Input Modules (maximum of 2 & 15 points)

A: Item 1 / qty 2
B: Item 2 / qty 2
C: Item 3 / qty 2
D: Item 4 / qty 2
E: Items 1 & 2
F: Items 1 & 3
G: Items 1 & 4
H: Items 2 & 3
I: Items 2 & 4
J: Items 3 & 4

7. Special

0: None

Note 1: Maximum of 2 monitor input cards monitoring a maximum of 15 monitor card inputs. With specific CM software (CM30), the loop control's input #2 may be configured as a monitor point. System maximum of 15 monitor points made up of loop control input #2, inputs of monitor cards or combination of both.

Note 2: CM will support up to 7 expansion modules (the monitor point input module is not a CM expansion module).

Note 3: CM6-XXXXXXX includes the following standard components:

Part #: FC6A-D16R1CEE
Control Module with 8 Digital Inputs (DI) and 8 Relay Outputs (DO)

Part #: FC6A-SD
SD Memory Card with specified loop control firmware and dual communication device.

All other CM (Control Module) options are packaged separately and like the FC6A-SIF52 must be plugged into the FC6A-D16R1CEE bus as described in the manual. The exception is the Monitor Card(s) and US2000B used in lieu of SIF52 communication card, which are not part of the FC6A-D16R1CEE bus and have separate power supply and RS485 communication wiring. The Monitor Card as well as any loop controls are wired to the serial RS485 FC6A-SIF52 card or US2000B dual communication devices.

MCT-CM Multi-loop Control System
Part Number Matrix

Control System Options *(ordered separately as needed)*

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

PS5R-VD24	60W power supply (2.5A)

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 8GB SD SLC Class 10 or better Memory Card

SD-4CM* SD Memory Card preloaded with MCT-CM i4.3 application software for FDC450 4.3" HMI
SD-7CM* SD Memory Card preloaded with MCT-CM i7 application software for FDC730 7" HMI
* Specify:
- Communication Module SIF52 or US2000B
- Loop Control Model 9300 or R22

Cable FC6A-SIF52 Communication Module: SIF52 to HMI Display

SIF52:	CA-RS232-8A	Cable (2.5 meters) from SIF52 (2-wire) to HMI Display (DB9 Female)

Cables US2000B Communication Module: US2000B to FC6A PLC and US2000B to HMI Display

US2000B:	CA-CAT5e-10ft	Cable (10ft.) Ethernet CAT5e patch cable; US2000B to FC6A PLC
US2000B:	DB9F-DB9F-10ft	Cable (10-ft.) DB9 Female - DB9 Female; US2000B to HMI Display

Cable Notes: Consult factory for different cable lengths, DB9 angle connectors, etc.

DIN Rail Mounting Adapter for 1/16DIN Controls

DRA-16	1/16 DIN Rail Mounting Adapter

FUTURE DESIGN CONTROLS
P.O. Box 1196
Bridgeview, IL 60455
888.751.5444
888.307.8014 Fax

www.futuredesigncontrols.com
csr@futuredesigncontrols.com