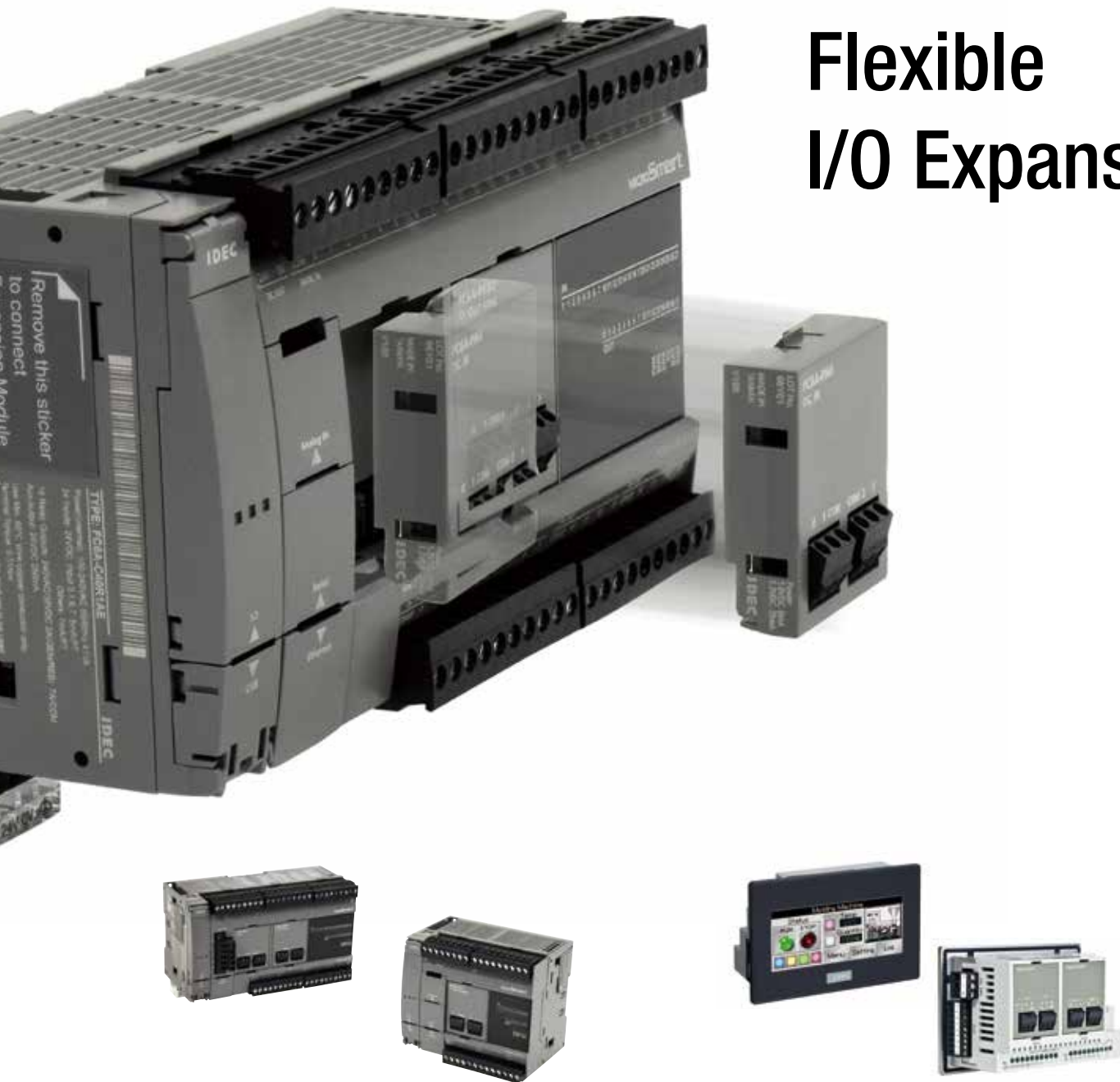




Think Automation and beyond...

## FC6A Digital I/O Cartridge

# Flexible I/O Expansion



**MICRO**Smart FC6A

**Smart**AXIS Series FT1A Touch  
14-point transistor output type

## Features



- Wiring can be easily completed by installing the cartridge in the existing system, providing a space-saving, wire-saving, quick and simple solution.
- Three types of cartridges available to combine a maximum of 8 digital I/Os to suit your needs.
- Approval pending for various standards.
- Supported by FC6A system software Ver. 1.30 or later included in Automation Organizer Ver. 3.60 or later, and FT1A Touch system software Ver. 4.05 or later included in Automation Organizer Ver. 3.50 or later.

## Ratings/Specifications

Type	I/O Points	Part No.
Digital Input	4-point digital input (4/1 common)	FC6A-PN4
Transistor Output	4-point transistor sink output (4/1 common)	FC6A-PTK4
	4-point transistor source output (4/1 common)	FC6A-PTS4

### Specifications

#### Input Cartridge Specifications

Part No.	FC6A-PN4	
Input Points	4 (4/1 common)	
Rated Input Voltage	12/24V DC sink/source input signal	
Input Voltage Range	0 to 28.8V DC	
Rated Input Current	2.5mA/point (12V DC) 5mA/point (24V DC)	
Input Impedance	4.4kΩ	
ON/OFF Level	OFF Voltage	5V maximum
	ON Voltage	8.5V minimum
	OFF Current	0.9mA maximum
	ON Current	1.7mA minimum (at 8.5V DC)
Input Delay Time (24V DC)	Turn ON: 0.5ms Turn OFF: 0.5ms	
Isolation	Between input terminals: Not isolated Internal circuit: Photocoupler-isolated	
External Load for I/O Interconnection	Not needed	
Signal Determination Method	Static	
Effect of Improper Input Connection	Both sink and source input signals can be connected. If any input exceeding the rated value is applied, permanent damage may be caused.	
Cable Length	3m in compliance with electromagnetic immunity	
Applicable Ferrule	1-wire: AI 0.5-6 (Phoenix Contact)	
Internal Current Draw	All Inputs ON	30mA (3.3V DC) 0mA (5V DC)
	All Inputs OFF	25mA (3.3V DC) 0mA (5V DC)
Internal Power Consumption (at 24V DC while all inputs ON)	0.10W	
Weight (approx.)	15g	

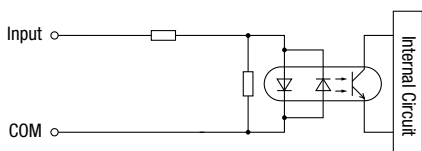
### Specifications

#### Output Cartridge Specifications

Part No.	FC6A-PTK4	FC6A-PTS4
Output Points	4 transistor sink output (4/1 common)	4 transistor source output (4/1 common)
Rated Load Voltage	12/24V DC	
Operating Load Voltage Range	10.2 to 28.8V DC	
Maximum Load Current	1 point	0.1A per point
	1 common	0.4A per common
Voltage Drop (ON Voltage)	1V maximum (voltage between COM and output terminals when output is on)	
Inrush Current	1A maximum	
Leakage Current	0.1mA maximum	
Clamping Voltage	Approx. 50V	
Maximum Lamp Load	2.4W	
Inductive Load	L/R = 10ms (28.8V DC 1Hz)	
External Current Draw	100 mA maximum, 24V DC (power voltage at the +V terminal)	100 mA maximum, 24V DC (power voltage at the -V terminal)
Overcurrent Protection	No	
Output Delay	Turn ON Time 450 μs maximum Turn OFF Time 450 μs maximum	
Isolation	Between output terminals: Not isolated Between output terminal and internal circuit: Photocoupler-isolated	
Applicable Ferrule	1-wire: AI 0.5-6 (Phoenix Contact)	
Internal Current Draw	All Outputs ON	35mA (3.3V DC) 0mA (5V DC)
	All Outputs OFF	30mA (3.3V DC) 0mA (5V DC)
Internal Power Consumption (at 24V DC while all outputs ON)	0.10W	0.10W
Weight (approx.)	15g	15g

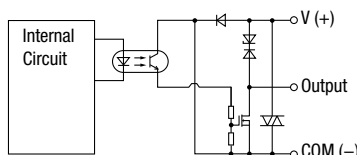
#### Input Internal Circuit

FC6A-PN4

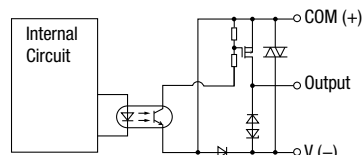


#### Output Internal Circuit

FC6A-PTK4



FC6A-PTS4



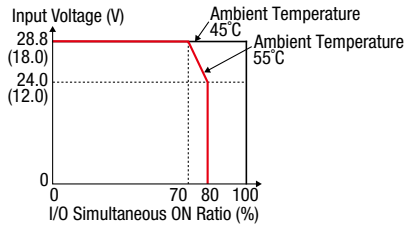
## Temperature Derating Curves

### Temperature derating curves when a digital I/O cartridge is installed

#### All-in-One FC6A CPU Modules

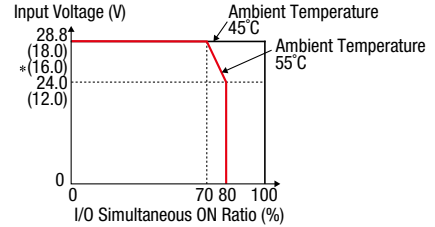
##### Input (with cartridge)

FC6A-C16K1CE  
 FC6A-C24K1CE  
 FC6A-C40K1CE  
 FC6A-C40K1DE  
 FC6A-C40K1CEJ  
 FC6A-C40K1DEJ



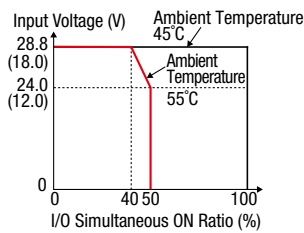
##### Output (with cartridge)

FC6A-C16K1CE  
 FC6A-C24K1CE  
 FC6A-C40K1CE  
 FC6A-C40K1DE  
 FC6A-C40K1CEJ  
 FC6A-C40K1DEJ



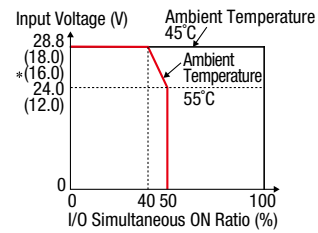
##### Input (with cartridge)

FC6A-C24P1CE  
 FC6A-C40P1CE  
 FC6A-C40P1DE  
 FC6A-C40P1CEJ  
 FC6A-C40P1DEJ



##### Output (with cartridge)

FC6A-C24P1CE  
 FC6A-C40P1CE  
 FC6A-C40P1DE  
 FC6A-C40P1CEJ  
 FC6A-C40P1DEJ

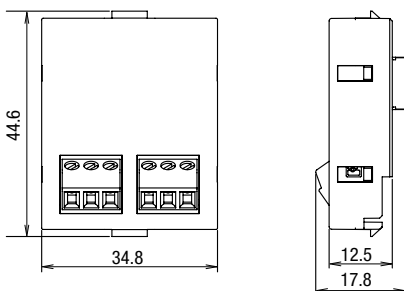


- Values in ( ) are for 12V DC model.
- Values shown in \* ( ) are for CAN J1939 all-in-one model.

#### FT1A Touch (FT1A-\*14KA/FT1A-\*14SA)

Temperature derating curve is the same with or without digital I/O cartridge.

## Dimensions



All dimensions in mm.

## MICROSmart FC6A Micro Programmable Logic Controller

**MICROSmart** FC6A Micro Programmable Logic Controller contributes to IoT in your production sites with its characteristics such as high performance, remote monitoring with Web Server Function, automatic E-mail notification, and user-friendly debug function to reduce designing processes.



See catalogs for details:

FC6A Micro Programmable Controller (features)  
(Cat No. EP1574)

FC6A Micro Programmable Controller (datasheet)  
(Cat No. EP1575)

- System configuration with a maximum of 528 I/Os is possible.
  - 40 I/O-point type CPU module
  - + expansion interface module
  - + 32-point digital I/O modules (15 units)
  - + 4-point digital cartridges (2 units)
- Cannot be expanded on FC6A-PH1 HMI module.
- Supported by FC6A system software Ver. 1.30 included in Automation Organizer Ver. 3.60 or later.
- See appendix B-1975 of FC6A All-in-One Type User's Manual (FC9Y-B1722) for details. Latest FC6A MicroSmart manuals can be downloaded from <http://www.idec.com/language/>.

## SmartAXIS Series FT1A Controller

**SmartAXIS** FT1A Touch provides space-saving, wire-saving, and user-friendliness with the 3.8-inch LCD display that features integrated control function, visibility and display function.



See catalogs for details:

FT1A Controller (Cat No. EP1527)

- Rear mount adapter available as an optional part for flexible system design



(Installation example)



FT9Z-1A01  
Rear mount adapter  
(optional)

- Expansion is possible on 14-point transistor output type.
- A maximum of 22-I/O system configuration possible. (when using one 14-I/O Touch + two 4-point digital cartridges)
- Supported by FT1A Touch system software Ver. 4.05 or later included in Automation Organizer Ver. 3.50 or later.
- See appendix B-1975 of FT1A Touch User's Manual FT9Y-B1390 for details. Latest FT1A Controller manuals can be downloaded from <http://www.idec.com/language/>.

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