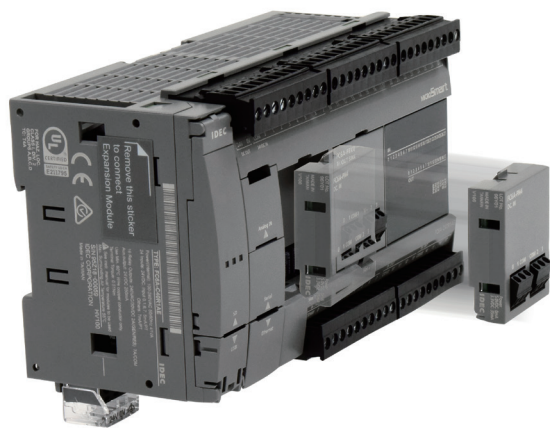


# FC6A and FT1A Series Digital I/O Cartridge



## PRODUCT DESCRIPTION

The FC6A digital I/O cartridge can easily be installed in the SmartAXIS Touch FT1A-\*14 and FC6A base units, providing a space-saving, wire-saving, quick and simple solution. With three types of cartridges available, these cost effective digital I/O cartridges can be added to suit the needs of many applications.

## KEY FEATURES

- Space-saving solution
- Three types of cartridges available
- Up to 2 cartridges can be added to SmartAXIS Touch FT1A-\*14 or FC6A base units
- Supported by FC6A firmware version 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

## SPECIFICATIONS/RATINGS

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

## 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 input exceeding the rated value is applied, permanent damage may be caused.	
Cable Length	3m in compliance with electromagnetic immunity	
Applicable Ferrule	1-wire: Al 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 (CON'T)

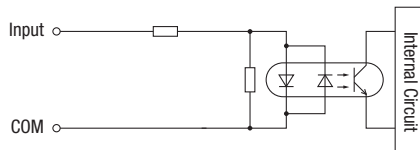
### Output Cartridge Specifications

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 $\mu$ s maximum Turn OFF Time 450 $\mu$ s 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	
Weight (approx.)	15g	

## CIRCUIT DIAGRAMS

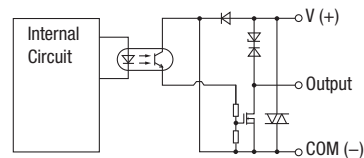
### Input Internal Circuit

FC6A-PN4

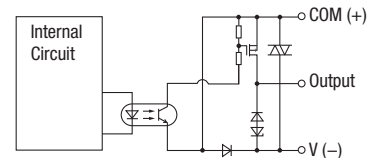


### Output Internal Circuit

FC6A-PTK4



FC6A-PTS4



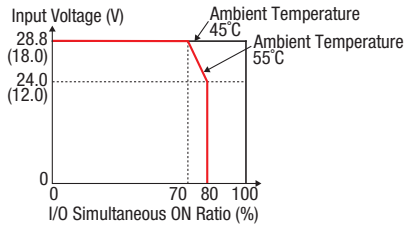
## TEMPERATURE DERATING CURVES

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

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

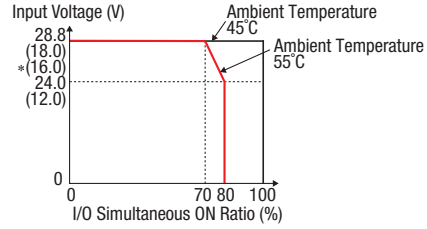
##### Input (with cartridge)

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



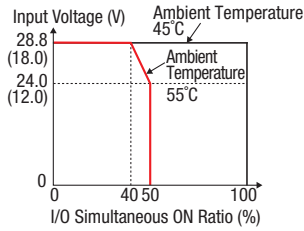
##### Output (with cartridge)

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



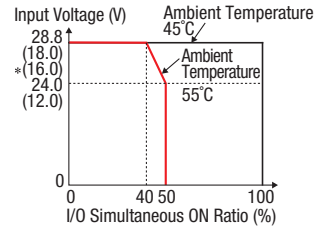
##### Input (with cartridge)

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



##### Output (with cartridge)

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

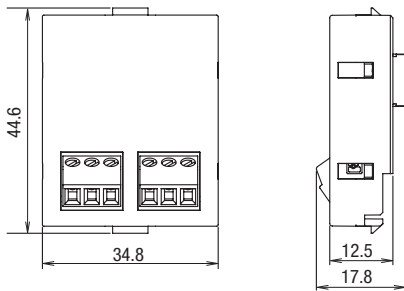


- Values in ( ) are for 12V DC model.
- Values shown in \*( ) are for CAN J1939 all-in-one model.

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

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

## DIMENSIONS



All dimensions in mm.

