

Facility Explorer Controllers Platform

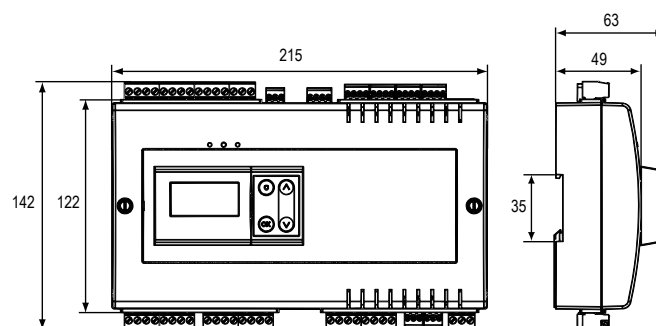
FX14

Field Controller

The FX14 is an equipment field controller in the Facility Explorer range of products. The controller is designed specifically for commercial Heating, Ventilating, and Air Conditioning (HVAC) and Refrigeration applications. The controller has 29 physical inputs & outputs and supports a wide range of temperature sensors and actuating devices. Parameters in the control application can be displayed and modified from the optional LCD Displays. The FX14 has a state-of-the-art integral LCD display including a set of graphic status icons used in the most common HVAC/R applications and/or remote (MUI) user interfaces. The FX14 field controller can be fitted with an optional communication modules for integration into an N2 Open, LonWORKS® or Bacnet® compatible Building Automation System. The FX14 also features communications services to transmit event notification messages via Short Messaging Service (SMS). The FX14 field controller is fully configurable or programmable, using the FX Tools software package, for a wide range of commercial HVACR applications. The FX14 also includes an on-board Real Time Clock to support the start-stop scheduling of equipment and real time based control sequences.

Features

- Modular Network communication options
- On-Board Real Time Clock
- Communication services
- Freely programmable or configurable using FX Tools software package
- Software selectable analog inputs
- User interfaces, integral or remote



Dimensions in mm

Ordering Codes	Description
LP-FX14D10-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - no communication card
LP-FX14D11-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - N2 Open Card
LP-FX14D12-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - LonWORKS® Card
LP-FX14D13-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - RS232C Card
LP-FX14D14-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - BACnet® Communications Card
LP-FX14D60-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - Integral User Interface, no communication card
LP-FX14D61-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - N2 Open Card and Integral User Interface
LP-FX14D62-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - LonWORKS® Card and Integral User Interface
LP-FX14D63-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - RS232C Card and Integral User Interface
LP-FX14D64-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (5 Relays + 4 Triacs) - BACnet® Card and Integral User Interface
LP-FX14D20-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - no communication card
LP-FX14D21-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - N2 Open Card
LP-FX14D22-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - LonWORKS® Card
LP-FX14D23-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - RS232C Card
LP-FX14D24-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - BACnet® Card
LP-FX14D70-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - Integral User Interface, no communication card
LP-FX14D71-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - N2 Open Card and Integral User Interface
LP-FX14D72-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - LonWORKS® Card and Integral User Interface
LP-FX14D73-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - RS232C Card and Integral User Interface
LP-FX14D74-000C	6 AIs, 12 BIs, 2 AOs (0-10 V or PWM), 9 BOs (9 Relays) - BACnet® Card and Integral User Interface

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Communication Cards

Ordering Codes	Description
LP-NET151-010C	N2 Open Communication Card
LP-NET142-000C	LONWORKS® Communication Card
LP-NET163-000C	RS-232C Communication Card
LP-NET164-000C	BACnet® Card for FX14 RevB

User Interfaces

Ordering Codes	Description
LP-DIS60P20-0C	Medium User Interface (MUI) - Panel Mount
LP-DIS60P21-0C	Medium User Interface (MUI) - Wall Mount
LP-KIT007-000C	Link cable for the connection of the FX07 to the Panel Mount MUI display - 3 m

Software

Ordering Codes	Description
LP-FXTPRO-0	FX Tools Pro CD-Rom (FX Builder, FX Builder Express, FX CommPro N2, FX CommPro LON, FX CommPro BACnet) New User
LP-FXTPRO-6	FX Tools Pro CD-Rom (FX Builder, FX Builder Express, FX CommPro N2, FX CommPro LON, FX CommPro BACnet) Upgrade

Accessories

Ordering Codes	Description
LP-KIT007-000C	Link cable for the connection of the FX14 to the Panel Mount MUI display - 3 m
LP-KIT014-000C	Kit of female screw connectors
LP-KIT100-000C	FX Programming Key
DT-9100-8901	Power Supply Adapter for Programming Key: 230 VAC/12 VDC

Room Command Modules

Room Sensor Modules - 80 mm x 80 mm, °C (TM Series without Display)

Ordering Codes	Description
TM-2140-0000	Room Sensor Module, temperature sensor only
TM-2150-0000	Room Sensor Module, occupancy button and LED
TM-2160-0000	Room Sensor Module, 12-28 °C setpoint dial, occupancy button and LED
TM-2160-0002	Room Sensor Module, 12-28 °C setpoint dial, occupancy button and LED, fan speed override
TM-2160-0005	Room Sensor Module, +/- setpoint dial, occupancy button and LED
TM-2160-0007	Room Sensor Module, +/- setpoint dial, occupancy button and LED, fan speed override
TM-2190-0000	Room Sensor Module, 12-28 °C setpoint dial
TM-2190-0005	Room Sensor Module, +/- setpoint dial

Room Command Modules

Network Room Modules with Serial Bus Connection to FX14 - 80 mm x 80 mm, °C

Ordering Codes	Description
LP-NRM001-000C	Network Room Module, temperature sensor only, no display, no setpoint dial
LP-NRM002-000C	Network Room Module with LCD display, temperature sensor, setpoint dial, occupancy function
LP-NRM003-000C	Network Room Module with LCD display, temperature sensor, setpoint dial, fan speed override button, occupancy function

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Channel	Type	Remark/Application
Analog Input (AI)		
AI1, AI2, AI3, AI4, AI5, AI6	See table below 16-bit resolution	Freely software configurable. Application: temperature, humidity, or pressure
AI V Ref	+16 V, 20 mA max or +5 V, 20 mA max	To power directly from the FX14 Active 0..10 V Sensors or to power directly from the FX14 Active Ratiometric Sensors. The selection between the two configuration is done by jumpers
Digital Input (DI)		
DI1, DI2, DI3, DI4, DI5, DI6, DI7, DI8, DI9,DI10, DI11,DI12	Potential free contacts	Transition counter function, Maximum 10 ms on and 10 ms off (@ 50 Hz)
Digital Output (DO)		
DO1, DO2, DO3	SPST 8(3)A, 250 V power relays	There is double insulation between the relays, and they can be used at different voltages from one another
DO4, DO5	SPST 8(3)A, 250 V power relays	
DO6	SPST 8(3)A, 250 V power relays or 0.5A, 24Vac triacs	
DO7, DO8, DO9	SPST 8(3)A, 250 V power relays or 0.5A, 24Vac triacs	
Analog Output (AO)		
AO V Ref	15 VDC 10 mA max	Voltage Reference signal used for PWM inputs of frequency drives, fan speed controllers
AO1	0...10 VDC, 3 mA or PWM, 100 Hz	Used to drive motor actuator, power triacs, frequency drivers or fan speed controller. 16 bit resolution
AO V Ref	15 VDC 10 mA max	Voltage Reference signal used for PWM inputs of frequency drives, fan speed controllers
AO2	0...10 VDC, 3 mA or PWM, 100 Hz	Used to drive motor actuator, power triacs, frequency drivers or fan speed controller. 16 bit resolution

Available Sensor Types

Sensor Type	Linearization Range	Accuracy @ 20°C Controller Ambient
Ni1000 JCI	-40°C to 120°C	±0.5 °C
Pt1000	-50°C to 160°C	±0.5 °C
A99	-50°C to 100°C	±0.5 °C
NTC K10	-20°C to 70°C	±0.5 °C
0 to 5 VDC ratiometric	0.5 to 4.5 VDC (10 to 90% of supply voltage)	±0.05 VDC
0 to 10 VDC	0 to 10 VDC	±0.05 VDC

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Technical Specifications

Product Codes	LP-FX14Dxx-000C
Power Supply Requirements	24 VAC $\pm 15\%$, 50/60 Hz - Class 2 Power Supply - SELV in Europe
Power Consumption	19.5 VA at max load
Protection Class	IP20 controller / IP55 integral LCD display
Ambient Operating Conditions	-40 °C to +60 °C, 10 to 95% RH (noncondensing) Note that the integral user interface does not operate below -20 °C
Ambient Storage Conditions	-40 °C to +70 °C, 10 to 95% RH (noncondensing)
Dimensions (H x W x D)	142 mm x 215 mm x 49 mm With display: 142 mm x 215 mm x 63 mm
Weight (with package)	0.74 kg
Integral LCD Display Resolution	-999 to 999 or -99.9 to 99.9 (4 digits for each row)
Connection Terminals for AIs, DOs and Power Supply	Screw terminals for max 1 x 1.5 mm ² (AWG16) wires, included in the package.
Connection Terminals for LON/N2 Open Bus	Screw terminals, cable size up to 1.5 mm ² , AWG24 to AWG16, included in the package. Belden cable, 2-core twisted pair with shield ≥ 0.8 mm (AWG20)
Connection Terminals for AOs, DIs and Remote Display	Screw terminals, cable size up to 1.5 mm ² , AWG24 to AWG16, included in the package.
CE Compliance	2004/108/EC: EN 61000-6-2:2007, EN 61000-6-3:2007 - 2006/95/EC: EN 60730-1:2001
UL Compliance	UL916