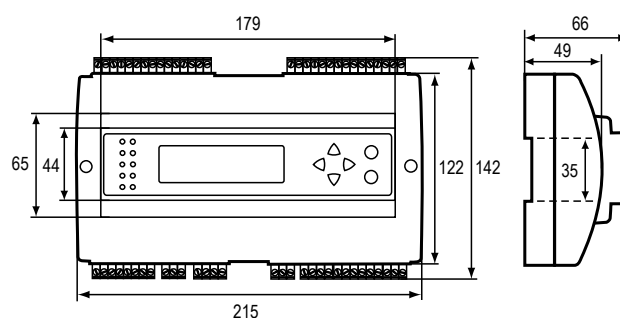


Facility Explorer Controllers Platform

FX15

Field Controller

The FX15 Field Controller (FX15 Classic) is a high performance field controller in the Facility Explorer system specifically designed for commercial Heating, Ventilating, and Air Conditioning (HVAC) and refrigeration applications such as chillers and rooftops, indoor packaged air conditioning units, Air Handling Units (AHUs), and close control units. The FX15 has 27 physical inputs and outputs and supports a wide range of temperature sensors and actuating devices. Up to 64 additional physical inputs and outputs may be achieved by adding the XT/XP expansion modules on the Local N2 Open bus. The FX15 is fully programmable or configurable, using the FX Tools software package, for a wide range of commercial HVAC and refrigeration applications. The FX15 controller can be fitted with an optional communication card for integration into an N2 Open or LonWORKS® compatible Building Automation System. The FX15 also includes an onboard Real Time Clock to support the start-stop scheduling of equipment and real-time based control sequences.



Dimensions in mm

Features

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

Standard Temperature Range Controllers

Ordering Codes	Description
LP-FX15D10-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 4 Relays + 5 Triacs, no communication card.
LP-FX15D11-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 4 Relays + 5 Triacs, N2 Open Card.
LP-FX15D12-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 4 Relays + 5 Triacs, LonWORKS® Card.
LP-FX15D60-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 4 Relays + 5 Triacs, Integral MUI.
LP-FX15D61-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 4 Relays + 5 Triacs, N2 Open Card and Integral MUI.
LP-FX15D62-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 4 Relays + 5 Triacs, LonWORKS® Card and Integral MUI.
LP-FX15D20-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 9 Relays, no communication card.
LP-FX15D21-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 9 Relays, N2 Open Card.
LP-FX15D22-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 9 Relays, LonWORKS® Card.
LP-FX15D70-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 9 Relays, Integral MUI, no communication card.
LP-FX15D71-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 9 Relays, N2 Open Card and Integral MUI.
LP-FX15D72-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 9 Relays, LonWORKS® Card and Integral MUI.

Extended Temperature Range Controllers

Ordering Codes	Description
LP-FX15X10-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 4 Relays + 5 Triacs, no communication card.
LP-FX15X11-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 4 Relays + 5 Triacs, N2 Open Card.
LP-FX15X12-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 4 Relays + 5 Triacs, LonWORKS® Card.
LP-FX15X20-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 9 Relays, no communication card.
LP-FX15X21-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 9 Relays, N2 Open Card.
LP-FX15X22-000C	6 Als, 8 DIs, 4 AOs, 9 DOs: 9 Relays, LonWORKS® Card.

FX15 Field Controller

Communications Cards

Ordering Codes	Description
LP-NET151-010C	N2 Open Communication Card
LP-NET152-010C	LONWORKS® Communication Card

User Interfaces

Ordering Codes	Description
LP-DIS60P20-0C	Medium User Interface (Panel Mount)
LP-DIS60P21-0C	Medium User Interface (Wall Mount)

Expansion I/O Modules

Ordering Codes	Description
LP-XT91D00-000C	Extension Module
LP-XP91D02-000C	Expansion Board: 6 AIs, 2 AOs
LP-XP91D03-000C	Expansion Board: 8 DOs (triacs)
LP-XP91D04-000C	Expansion Board: 4 DIs, 4 DOs (triacs)
LP-XP91D05-000C	Expansion Board: 8 DIs
LP-XP91D06-000C	Expansion Board: 4 DOs (relays) 230 VAC (Europe only)

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 Interface cable 3 m for the connection of the FX15 to the MUI user interfaces
LP-KIT015-000C	Kit of Female Screw Connectors
LP-KIT015-001C	Kit of Female Cage Clamp Connectors
LP-KIT100-000C	FX Programming Key

Technical Specifications - I/O details

Terminals (Cont.)	Channel	Type	Remark/Application
Analog Input (AI)			
TB1	AI1, AI2, AI3, AI4, AI5, AI6	See table below. 16-bit resolution	Freely software configurable. Application: temperature, humidity, or pressure
3, 8	EXT-VDC	+16 V, 80 mA	0 - 10 V Sensors or max no. 4 0/4 - 20 mA Sensors
13	AVPS/EXT-VDC	AVPS = +5 V, 20 mA EXT-VDC = +16 V, 80 mA	To power directly from the FX15 ratiometric sensors, with AVPS or 0 - 10 V, 0/4 - 20 mA Sensors with EXT-VDC. The selection between AVPS and EXT-VDC is done by jumpers.
Digital Input (DI)			
TB2	DI1, DI2, DI3, DI4, DI5, DI6, DI7, DI8	Potential free contacts	The insulation from the microprocessor is achieved if a different 24 VAC power supply from the one used to power the controller is used to power the digital inputs (through Terminals 34, 35). Transition counter function maximum 500 ms on and 500 ms off (1 Hz). For quicker counter function, use the LP-XP91D05 module.
Digital Output (DO)			
TB3	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.
TB4	DO4, DO5	SPST 5(3)A, 250 V power relays or 0.5 A, 24 VAC triacs	This group is double insulated from the other relays, but they share the same common between them; therefore, they have to be connected at the same voltage.
TB5	DO6, DO7, DO8	SPST 5(3)A, 250 V power relays or 0.5 A, 24 VAC triacs	This group is double insulated from the other relays, but they share the same common between them; therefore, they have to be connected at the same voltage.
TB6	FAIL	SPDT 8(3)A, 250 V power relay	Fail relay for enhanced security. The relay returns to its NC position not only at power fail, but also in case the microprocessor should fail: watch-dog, brown-out, etc.
Analog Output (AO)			
TB7	AO1, AO2	0...10 VDC, 3 mA 16 bit resolution	The insulation from the microprocessor is achieved if a different 24 VAC power supply from the one used to power the controller is used to power the analog outputs.
TB8	AO3, AO4	0...10 VDC, 3 mA 16 bit resolution	The insulation from the microprocessor is achieved if a different 24 VAC power supply from the one used to power the controller is used to power the analog outputs (through Terminals 79, 80).

FX15 Field Controller

Available Sensor Types

Sensor Type	Linearization Range	Accuracy @ 20 °C Ambient
Ni1000 JCI	-45 to 120 °C	±0.5 °C
Ni1000 JCI Extended	20 to 287 °C	
Ni1000 Siemens™	-50 to 160 °C	
Ni1000 DIN	-60 to 180 °C	
Pt1000	-50 to 160 °C	
A99	-50 to 100 °C	
NTC 2.2K	-40 to 150 °C	
0 to 5 VDC ratiometric	0.5 to 4.5 VDC (10 to 90% of Supply Voltage)	±0.05 V
0 to 10 VDC	0 to 10 Volts	
0 to 20 mA	0 to 20 mA	±0.1 mA

FX15 Standard and Extended Range Models (Extended Range Information in Bold)

Product Codes	LP-FX15Dxx-000C LP-FX15Xxx-000C
Power Supply Requirements	24 VAC ±15%, 50/60 Hz - Class 2 Power Supply - SELV in Europe
Power Consumption	15 VA at max load
Protection Class	IP20 controller IP40 integral MUI
Ambient Operating Conditions	STD controller: -20 to 50 °C, 10 to 95% RH (non condensing) Extended range controller: -40 to 60 °C, 10 to 95% RH (noncondensing) Note that the integral user interface does not operate below -20 °C
Ambient Storage Conditions	-40 to 70 °C, 10 to 95% RH (non condensing)
Dimensions (H x W x D)	142 mm x 215 mm x 49 mm With display: 142 mm x 215 mm x 66 mm
Weight (with package)	0.74 kg
Connection Terminals for Signals and Power Supply	Screw terminals for max 1 x 1.5 mm ² (AWG16) wires, included in the package.
LON/N2 Open Bus Connection Terminals	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 Extension Bus 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