



# FlexXpand FX3 Conveying System Control

## FlexXpand FX3 Expandable Color Touch Screen PLC Controls

The powerful and reliable FlexXpand FX3 control system, featuring a wall-mounted color touch screen (7", 12", or 15"), sets a new standard for operational efficiency, expandability, and ease-of-use. With an advanced Siemens PLC, ultra-responsive HMIs, and a robust array of enhanced features, the FX3 not only elevates performance but also offers unprecedented versatility through FlexXpand FXM3 modules.



FlexXpand FX3-532-32-12C

### The Basic FlexXpand FX3 Control

Controls up to 5 vacuum pumps plus 2 backup pumps, 32 material receivers with optional blowback and proportioning capability and 32 purge valves. Includes auto-pump backup as standard.

### Expandable Touch Screen PLC Control

Intuitive operation with the ability to expand using economical FlexXpand FXM3 modules.

### Easiest to Use

No need for special training... the color, icon-driven, graphic display allows immediate understanding and efficient control over all conveying parameters.

### Ethernet Communications

Each FX3 control includes a built-in 3-Port Ethernet switch for connecting local HMI, remote HMI and FlexXpand modules. Expandable with optional multiport switches. Permits full control access from any PC, tablet, or smartphone.

### Customizable Station Status Screen

Configure per your plant's layout.

### NovaNet Central Control Portal

For remote control monitoring and control of other Novatec equipment such as Drying Systems, Railcar Unloaders, Silos, and Blenders.

### PLC Reliability

Leveraging 30+ years of collaboration with Siemens, our system features the latest, advanced Siemens PLC technology.

### Easiest, Simple Installation

FlexXpand FXM3 modules connect to the main control with a simple Ethernet communications cable - modules can be conveniently located to minimize wiring to system components.

### FlexXpand FXM3 Modules

Control additional receivers, (including blowback and proportioning) pumps, WSB blenders, purge valves or material selection stations where auto ID proofing is desired.

### Dynamic Throughput Control

Throughput limiting to ensure compliance with drying capacity.

### System Backup Pump

Quickly re-assign stations from any online pump to a backup pump with a single touch. Add optional pneumatic vacuum valves for fully automated backup operation.

### Multilevel Password Control

Offers customizable access controls for diverse components and parameters, ensuring secure and precise management of system settings.

### Preventative Maintenance & Pump Filter Clean Reminders

Can be modified from factory default settings.

### Instant Material Identification

Input material sources to activate LED-guided indicators on the Novatec Quick Select Manifold.

#### Plus

- › 24 VDC inputs and outputs standard
- › 115 VAC supply power standard (230/1/50-60) optional
- › Audible and visual alarms on the control face
- › 5-Year warranty

## The PLC-driven FlexXpand FX3 touch screen

...provides an extremely intuitive display of all conveying functions through the use of highly graphic and colorful interactive icons, personalized descriptive text and effective alarm messages.

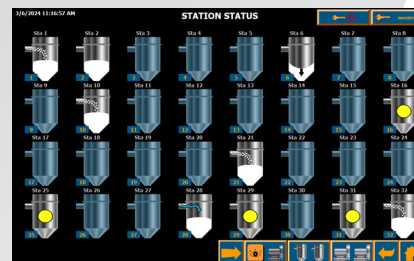
Changes to operating parameters can be made easily, with assignable levels of security, on intuitive input screens with instant feedback of accepted changes and ultra logical screen navigation.



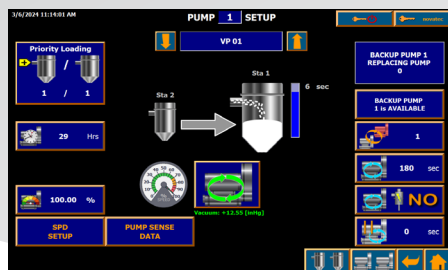
Home screen



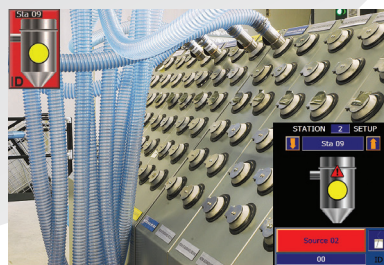
Station setup



Station status



Vacuum pump setup



ID Proofing with source/station mismatch

With the Ethernet capability of FlexXpand, all pages and all of the control's intuitive graphics can be accessed remotely on any PC. Monitor and make changes with the click of the mouse.

### System Component Capabilities

Component	Panel Input Voltage	Description	Pumps	Receivers	Purge Valves
FX3-516-16-7C	115/230 VAC	7" Diag. color touch screen PLC	5	16	16
FX3-516-16-12C	115/230 VAC	12" Diag. color touch screen PLC	5	16	16
FX3-516-16-15C	115/230 VAC	15" Diag. color touch screen PLC	5	16	16
FX3-532-32-7C	115/230 VAC	7" Diag. color touch screen PLC	5	32	32
FX3-532-32-12C	115/230 VAC	12" Diag. color touch screen PLC	5	32	32
FX3-532-32-15C	115/230 VAC	15" Diag. color touch screen PLC	5	32	32

### Ethernet connects your FlexXpand to the world

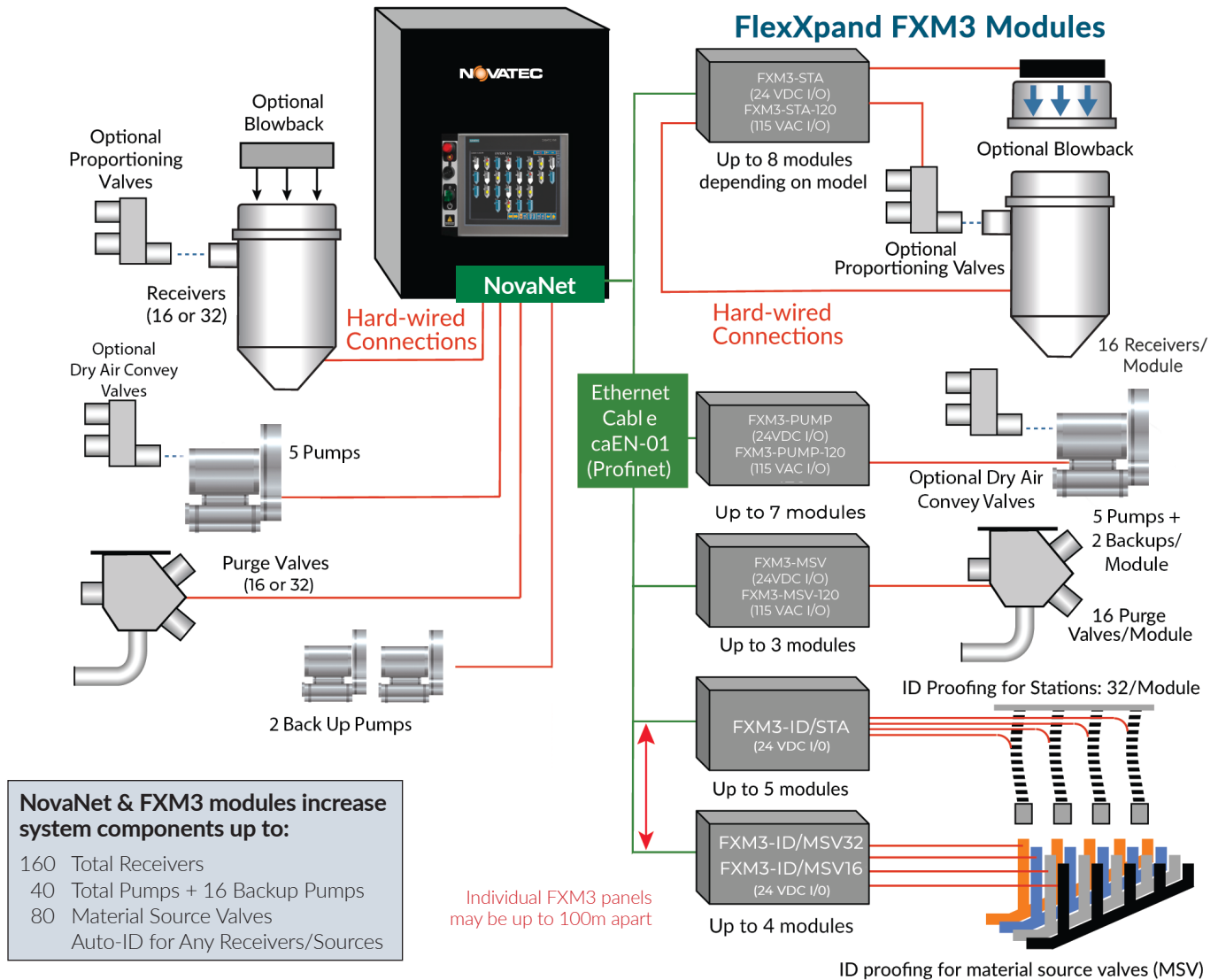
Every FlexXpand control can be accessed via VNC or web browser by any networked computer, or via VNC App by a networked Smartphone or Tablet. Actual FlexXpand screens are displayed remotely, and changes can be made easily with the click of a mouse.

Multiple security levels and access are pre-programmed with selectable passwords to prevent unauthorized viewing or changes. View alarm logs, program material changes, monitor pump run life... all remotely, and with the help of intuitive graphics and self-



## FlexXpand FX3 with FlexXpand FXM3 modules

The full-featured FlexXpand FX3 provides detailed control and monitoring of these conveying devices:



See FX3-NovaNet control to include other system components like: dryers, blenders, silos, railcar unloaders, etc.

**Receivers:** Load time, discharge time, proportioning<sup>1</sup> percentage, number of layers, blowback pulses, priority selection (standard and high), failed fill alarm. Receiver demands are serviced in the order they are received (FIFO = First In First Out) or priority. Purge time, open or closed loop conveying.

**Pumps:** Pump "ON" (starter), overload alarm, vacuum breaker valve function (NO or NC) and timer, dry air conveying closed loop valve, and run-time clock.

**Purge Valves:** Assign valves to any receiver and manifold sharing capability<sup>2</sup> (allows multiple pumps to work with common valves).

**Material Sources and Destinations:** Optional Auto-ID<sup>3</sup> and Auto-ID+ material source to receiver destination proofing prevents conveying through mismatched manifold connections.

<sup>1</sup> Blowback or proportioning can be added as an option to the main FX3 panel and the Xpand FX3-STA panels in groups of 16 consecutive stations. Blowback or proportioning can be added as a separate option in a similar manner.

<sup>2</sup> Novatec's unique manifold sharing capability provides 'traffic control' of multiple pump systems calling upon the same shared material source. The FX3 assigns the source to one pump and allows waiting pump(s) to continue loading other receivers until the source is available. The FX3 remembers 'skipped' receivers and ensures a limited wait time.

<sup>3</sup> Auto ID confirms the selected material source for each 'proofed' station matches the physical hose connection at the source selection manifold. If the correct connection is not confirmed through the (optional) manifold proofing connections, an alarm is generated and loading is not permitted.

## Specifications:

Component	Description	Dimensions W x H x D		Amps Required		I/O Voltage
		in	mm	115V	230V	
FX3-516...(-120)	Central Control Panels	30 x 24 x 8	762 x 610 x 203	6	3	24 VDC or 115 VAC
FX3-532...	Central Control Panels	30 x 24 x 8	762 x 610 x 203	6	3	24 VDC
FX3-532...(-120)	Central Control Panels	36 x 36 x 8	914 x 914 x 203	6	N/A	115 VAC
FXM3-STA(-120)	Station Expansion	18 x 18 x 8	457 x 457 x 203	3	1.5	24 VDC (115 VAC)
FXM3-PUMP(-120)	Pump Expansion	18 x 18 x 8	457 x 457 x 203	3	1.5	
FXM3-MSV(-120)	Purge Valves	18 x 18 x 8	457 x 457 x 203	3	1.5	
FXM3-AG16 or 32	Alarm Groups	18 x 18 x 8	457 x 457 x 203	3	1.5	24VDC or 115VAC
FXM3-ID/STA	ID Manifold	18 x 18 x 8	457 x 457 x 203	3	1.5	24 VDC Only
FXM3-ID/MSV16	ID Manifold	18 x 18 x 8	457 x 457 x 203	3	1.5	
FXM3-ID/MSV32	ID Manifold	18 x 18 x 8	457 x 457 x 203	3	1.5	
FXM3-SID-212 or 211-PS	Silo Proofing	24 x 20 x 8	600 x 500 x 210	3	1.5	

Note: add -120 to FX3 models and FXM3 modules for 115 VAC inputs/outputs (Where available)

See FX3-NovaNet Control to include other system components like, dryers, blenders, silos, railcar unloaders, etc.

### Options:

#### Blowback and proportioning output cards for

**16 receivers:** Up to 2 cards (1 each of proportioning and blowback) can be factory installed and wired into FX3 control. For 24 VDC or 115 VAC.

**Ethernet Switch, 5-port, or 8-port:** Adds networking ports to main panel, Xpand, and RHI'S.

**230 VAC Panel Input Power:** All models, 24 VDC I/O only.

**Alarm strobe:** (24 VDC)  
For 24 VDC or 115 VAC I/O.

**Wireless Router:** Seamlessly manage the FX3 from your tablet or mobile phone via wireless network.

**Alarm Groups:** Allows assignment of any station to a specific alarm group.

### Accessories:

**Receiver Xpand Module:** Up to 8 modules can be added (16 stations per module). Add optional outputs for using blowback and/or proportioning with receivers.

**Pump Xpand Module:** Up to 7 modules can be added (5 pumps +2 backups per module). Add optional output for using automatic backup valves, air speed control, backup pump, SmartPump, and more.

**Purge Valve Xpand Module:** Up to 3 modules can be added (16 purge valves per module).

**Auto ID-Source Xpand Module:** Up to 4 modules can be added (16 or 32 sources per module).

**Auto ID-Destination Xpand Module:** Up to 5 modules can be added (32 destinations per module).

**Station Alarm Groups:** Easily manage and organize groups of machines for streamlined monitoring and quicker response time.

**Silo Truck Fill Auto ID:** Ensure precise material allocation from bulk trucks to silos, preventing misconnections and optimizing inventory management.

**Remote Touch-Screen HMI:** (7", 12" or 15") Extending Ethernet through an RHI panel requires (optional) Ethernet switch.