FlexXpand FX2 Conveying System Control

FlexXpand FX2 Expandable Color Touch Screen PLC Controls

The powerful FlexXpand FX2 control system provides a single, wall mounted, (7" or 12") color touch screen PLC control with a wide range of built-in capabilities which can be easily expanded with the addition of FlexXpand FXM2 modules.

– 5 –
YEAR
warranty

FlexXpand FX2-532-25-12C

The Basic FlexXpand FX2 Control
Controls up to 5 vacuum pumps plus a backup pump, 32 material receivers with proportioning capability and 25 purge valves.

Expandable Touch Screen PLC Control
Intuitive operation with the ability to expand using economical FlexXpand FXM2 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 FX2 control includes a built-in 3-Port Ethernet switch for connecting local HMI, remote HMI and FlexXpand modules. Permits full control access from any PC.

NovaNet Central Control Portal
For remote control monitoring and control capabilities.

PLC Reliability
A powerful PLC is the heart of the system, supported by NovaNet communications expansion modules.

Lower Cost Installation
FlexXpand FXM2 modules connect to the main control with a simple Ethernet communications cable - modules can be conveniently located to minimize wiring to system components.

FlexXpand FXM2 Modules
Control additional receivers, (including blowback and proportioning) pumps, WSB blenders, purge valves or material selection stations where auto ID proofing is desired .

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.

User Access Codes
Are changeable for various components and parameters.

Preventative Maintenance Reminders
Can be modified from factory default settings.

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

FlexXpand FXM2 expansion modules can be wall mounted near the components being controlled.

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The PLC-driven FlexXpand FX2 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.
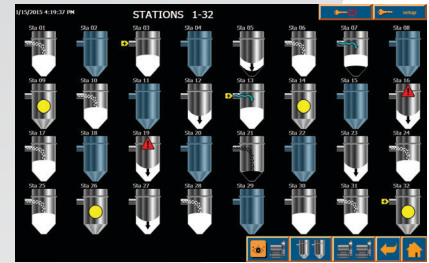
Changes to operating parameters can be made easily, with assignable levels of security, on intuitive input screens with instant feedback of accepted changes and ultra logical screen navigation.
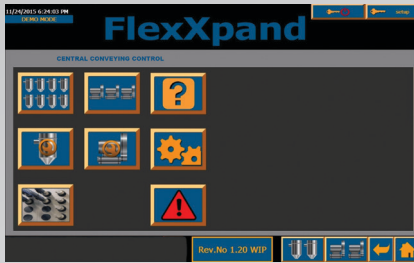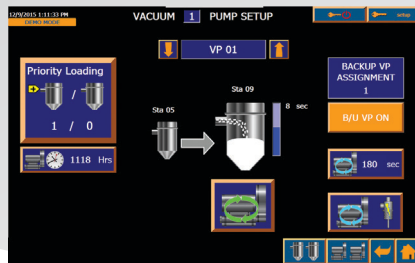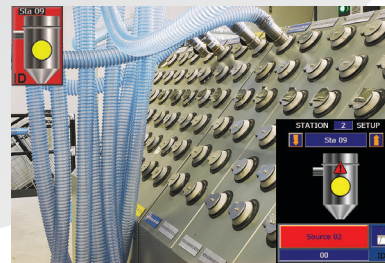

System setup

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 or Blowback	Proofing Lines
FX2-516-10-7C	115/230 VAC	7" Diag. color touch screen PLC	5	16	10	0
FX2-516-10-12C	115/230 VAC	12" Diag. color touch screen PLC	5	16	10	0
FX2-532-25-7C	115/230 VAC	7 " Diag. color touch screen PLC	5	32	25	0
FX2-532-25-12C	115/230 VAC	12" Diag. color touch screen PLC	5	32	25	0

Ethernet connects your FlexXpand to the world

Every FlexXpand control can be accessed via web browser by any networked computer, or via VCN 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-explanatory icons.

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FlexXpand FX2 with FlexXpand FXM2 modules

The full-featured FlexXpand FX2 provides detailed control and monitoring of these conveying devices:

FlexXpand FXM2 Modules

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NovaNet

Optional Proportioning Valves

Optional Blowbacks

Receivers (16 or 32)

Hard-wired Connections

Purge Valves (10 or 25)

Ethernet Cable caEN-01 (Profinet)

FXM2-ST A (24 VDC I/O)
FXM2-ST A-12 (115VAC I/O)
Up to 8 modules depending on model

Optional Blowbacks

Optional Proportioning Valves

Hard-wired Connections

16 Receivers/ Module

FXM2-PUMP (24 VDC I/O)
FXM2-PUMP-12 (115 VAC I/O)
Up to 3 modules

Dry Air Convey

5 Pumps/ Module

FXM2-MSV (24 VDC I/O)
FXM2-MSV-12 (115 VAC I/O)
Up to 3 modules

16 Purge Valves/Module

FXM2-ID/STA (24 VDC I/O)
Up to 5 modules

ID Proofing for Stations: 32/Module

Individual FXM2 panels may be up to 100m apart

FXM2-ID/MSV32
FXM2-ID/MSV16 (24 VDC I/O)
Up to 4 modules

ID proofing for material source valves (MSV):
Sources 1-32 (32 in first module)
Sources 33-73 (16 in modules 2-4)

NovaNet & FXM2 modules increase system components up to:

- 160 Total Receivers
- 20 Total Pumps + 1 Backup Pump
- 73 Material Source Valves
- Auto-ID for Any Receivers/Sources

See FX2-NovaNet control to include other system components like, dryers, blenders, silos, railcar unloaders, etc.

Receivers: Load time, discharge time, proportioning [1] 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). 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 [2] (allows multiple pumps to work with common valves).

Material Sources and Destinations: Optional Auto ID [3] material source to receiver destination proofing prevents conveying through mismatched manifold connections.

[1] Proportioning can be added as an option to the main FX2 panel and the Xpand FX2-STA panels in groups of 16 consecutive stations. Blowback can be added as a separate option in a similar manner.

[2] Novatec's unique manifold sharing capability provides 'traffic control' of multiple pump systems calling upon the same shared material source. The FX2 assigns the source to one pump and allows waiting pump(s) to continue loading other receivers until the source is available. The FX2 remembers 'skipped' receivers and ensures a limited wait time.

[3] 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.

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Specifications:

Component	Dimensions W x H x D		Amps Required		I/O Voltage
	in	mm	115V	230V	
FX2-516 & FX2-532	30 x 24 x 8	762 x 610 x 203	6	3	24 VDC
FX2-516 & FX2-532	30 x 24 x 8	762 x 610 x 203	6	3	115 VAC
FXM2-STA	18 x 18 x 8	457 x 457 x 203	3	1.5	24 VDC or **115 VAC**
FXM2-PUMP	18 x 18 x 8	457 x 457 x 203	3	1.5	
FXM2-MSV	18 x 18 x 8	457 x 457 x 203	3	1.5	
FXM2-ID/STA	18 x 18 x 8	457 x 457 x 203	3	1.5	24 VDC ONLY
FXM2-ID/ MSV32&16	18 x 18 x 8	457 x 457 x 203	3	1.5	

Note: add -12 to FX2 models and FXM2 modules for 115 VAC inputs/outputs (Where available)

See FX2-NovaNet Control to include other system components like, dryers, blenders, silos, railcar unloaders, etc.

Options:

Blowback and proportioning output cards for up to 16 receivers: Up to 4 cards (2 each of proportioning and blowback) can be factory installed and wired into FX2 control. For 24 VDC or 115 VAC.

Ethernet Switch, 5-port: Adds networking ports to main panel and RHI'S 115 V I/O for existing systems

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

Alarm strobe: (must match panel I/O voltage)
For 24 VDC
or 115 VAC.

Accessories:

Receiver Xpand Module: Up to 8 may be added. 16 Inputs /16 Outputs expansion panel for 16 receivers. (add optional outputs for using blowback and/or proportioning with receivers).

Pump Xpand Module: Up to 3 may be added. 8 Inputs / 16 Outputs expansion panel for 5 pumps (add optional output for using automatic backup valves - backup pump required).

Purge Valve Xpand Module: Up to 3 may be added for material sources. 0 Inputs / 16 Outputs expansion panel for 16 purge valves.

Auto ID: (source) Xpand Module: Up to 4 may be added. 32 or 16 Inputs / 0 Outputs expansion panel for 32 or 16 Auto ID sources 24 VDC outputs only

Auto ID: (destination) Xpand Module: Up to 5 may be added. 0 Inputs / 32 Outputs expansion panel for 32 Auto ID destinations 24 VDC inputs only

Ethernet Communication Cable

Ethernet Cable Connector

Ethernet Repeater Switch: 5 port or 8 port – Stand alone installation 115 VAC input power required. (Required to extend a single network cable segment greater than 300 feet).

Cables For Receivers: 18/6 or 16/6 with drain wire and PVC jacket.

Remote Touch-Screen HMI: (12" color) Extending Ethernet through an RHI panel requires (optional) Ethernet switch.

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