FireConnect™

Installation and Operating Instructions

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GRUNDFOS

Installation and Operation Manual

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> ⚠ **Warning**
> Prior to installation, read these installation and operating instructions. Installation and operation must comply with local regulations and accepted codes of good practice.

1. Symbols used in this document

> ⚠ **Warning** If these safety instructions are not observed, it may result in personal injury.

> ⚡ **Warning** If these instructions are not observed, it may lead to electric shock with consequent risk of serious personal injury or death.

> **Caution** If these safety instructions are not observed, it may result in malfunction or damage to the equipment.
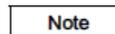
> **Note** Notes or instructions that make the job easier and ensure safe operation.

2. General Information

These instructions should be retained for reference regarding maintenance and operation near the pump. Additional copies can be found at www.grundfos.com.

These are general instructions and may not take into account local regulations. The user should ensure such regulations are observed by all parties.

Information in this manual is believed to be reliable. In spite of all the efforts to provide sound and all necessary information, the content of this manual may appear insufficient and is not guaranteed to be compete or accurate in all instances.

2.1 Product Description

The FireConnect™ system is a Grundfos proprietary hardware and software package that provides real-time fire pump monitoring through cloud networking. FireConnect™ interprets data from on-site peripherals - such as the fire pump and jockey pump controllers (via Modbus communication), a suction pressure transducer, a magnetic induction flowmeter, and other sensors as supplied and connected – and relays that data to the cloud via cellular communication. The system can then be monitored using the online Grundfos FireConnect™ application. Through the application, the user can view real-time fire system information, such as alarms, pump pressure and flow, and system event logs. **See Figure 1** for a typical FireConnect™ installation.

Figure 1 Typical Installation P&ID
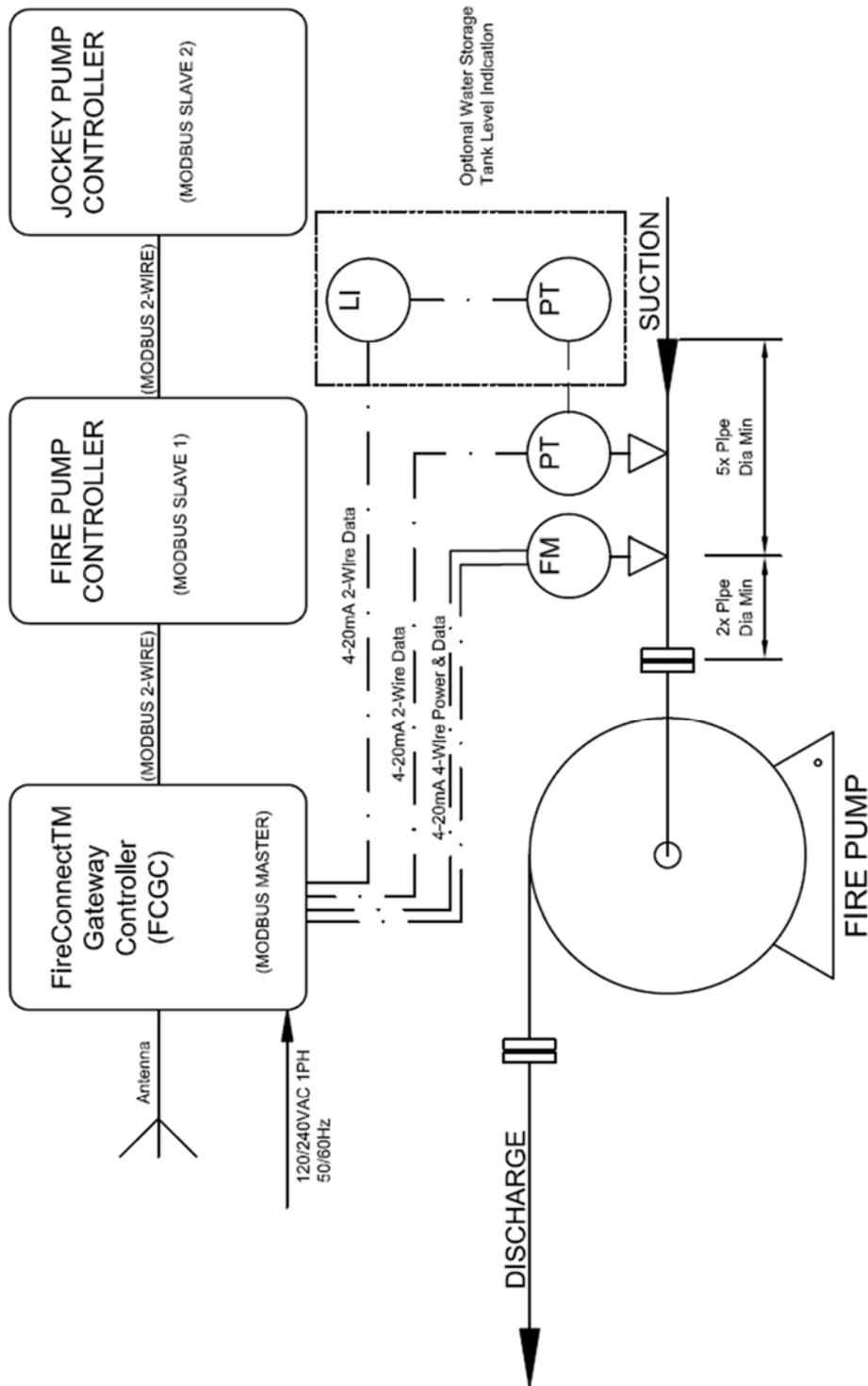
2.2 Warranty

This unit is manufactured under a quality management system standard as certified and audited by external quality assurance organizations. Genuine parts and accessories have been designed, tested and incorporated into the products to help ensure their continued product quality and performance in use.

Damage or failure caused by misuse, abuse or failure to follow these instructions are not covered by our warranty.

Any modification of our products or removal of original components may impair the safety of these products in their use.

Standard warranty conditions can be found at www.grundfos.com.

2.3 Personnel qualification

All operations must be carried out by qualified personnel.

2.4 Warnings

	Warning Do not remove or paint over any safety labels. If labels are lost or damaged, contact the Grundfos representative for replacement.
	Warning Never do maintenance work when the unit is connected to power. Use only qualified electricians for electrical installation and maintenance.

3. Transport and storage

3.1 Transport and handling requirements

The FireConnect™ system has been prepared for shipment at the factory in such a way as to minimize potential damage due to handling and transport.

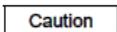|	
	The equipment should not be subjected to excessive g-forces during the handling or transport.

3.2 Receipt and inspection

Receiver should report any shortage or damage to the transport company handling the shipment and to Grundfos.

Prior to installation, take inventory of the shipment to ensure that the parts received match the list of parts on the order.

Note the extent of damage or shortage on the freight bill and bill of lading. Failure to note damage or missing parts may result in declined warranty or replacement of parts.

It is important that all the components for FireConnect™ system be identified and properly stored until installation is to be done. There may be many small parts that are best left in their shipping container until installation.

Do not unpack any more than required to verify that the equipment is complete and undamaged unless installation is to be done immediately. Check all packaging material that is to be discarded to verify that no parts or instructions are being accidentally discarded. **In some shipments, small boxes containing additional parts are bound to pump skids.** Leave small parts in their shipping container until installation so they don't get lost. Upon unpacking make certain that system components are clearly marked showing which pump unit they are to be used with.

3.3 Storage

Standard factory packaging is suitable for protection during shipment and during covered storage at jobsite for a short period between installation and startup. The preservatives applied at the factory have an effective life of two to three months from date of shipment from factory, depending on the severity of the environment in which the equipment is exposed. For international destination, this will vary depending on the seaworthiness of export boxing.

3.3.1 Controlled storage

Storage facilities should be maintained at an even temperature of at least 10 °F (5.5 °C) above the dew point with relative humidity lower than 50 % and little or no dust. The equipment is to be inspected weekly to ensure that all preservatives are intact and internals are protected.

	Protect the equipment from flooding or from harmful chemical vapors.
	Storage should be free from ambient vibration. Excessive vibration can cause bearing damage.
	Precautions should be taken to prevent rodents, snakes, birds or insect from nesting inside the equipment.

3.3.2 Uncontrolled storage

For uncontrolled storage periods of three months or less, the equipment is to be inspected weekly to ensure internals are protected.

Provide a roof or shed shelter to protect from direct exposure to the elements.

3.3.3 Standard short-term storage

The FireConnect™ system, as shipped, has adequate protection for short-term (two to three months) storage in a covered, dry, and ventilated location at the job site prior to installation.

See section 3.3.4 Long-term storage when the startup of equipment is made over three months from the date of shipment from the factory.

3.3.4 Long-term storage

Long-term storage protection from the factory does not extend the warranty in any manner. Warranty policy is twelve months from startup or eighteen months from time of shipment, whichever occurs first. This warranty is valid only if equipment has been properly handled and stored as per the stated requirements.

Should the equipment be stored or handled improperly, then the warranty is invalid and may be reinstated only after a factory representative is allowed to inspect the equipment

prior to startup. Expenses for the representative will be billed in accordance with the latest schedule for field service engineer.

Any repairs or repair parts needed will be billed to the customer at prices in effect at time of shipment of these repairs/parts.

At the time of specification and/or order placement Grundfos should be advised about the extended storage duration so that special long-term storage protection can be provided for the equipment prior to shipping to the job site. Inspection of the equipment by a factory representative prior to startup is normally required to ensure equipment integrity and compliance with warranty requirements.

In addition to complying with the standard short-term and storage atmosphere conditions, the following considerations are required:
The FireConnect™ system should be inspected at regular periods, not to exceed three months.

3.4 Disposal of packaging materials

See Section 10 Disposal

4. Identification

4.1 Identification Tag

Each FireConnect™ Gateway Controller has a five digit identification number displayed on the front of the FCGC enclosure. This number is a unique identifier and is needed when contacting Grundfos with questions and/or service request. See Figure 2.

Figure 2 Ex. Identification Number
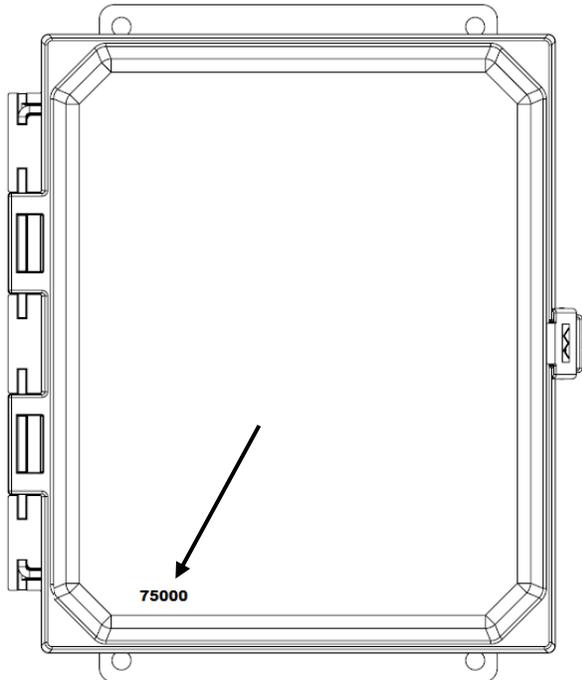
4.1.1 Certifications

If the product carries an industry certification (UL Fire, FM, or other), it will be noted on the panel. Contact Grundfos for additional information.

4.2 Type key for FireConnect™ System

Code Example: FC-A-1-A-R-F-123

FC						A	1	A	I	F	D	123

Communication Device Model
A : FireConnect™ US Installation
B : FireConnect™ International Installation

Suction Pressure Range
1: 0-100psig

Flow Meter Option
A: Analog (Std)
M: Modbus[1]

Antenna
I: Internal (Std)
E: External

Controller
F: Firetrol
E: Eaton

Driver
D: Diesel
E: Electric

Expansion Options
1: Tank Level Indication
2: Speed Sensor[1]
3: Temperature Sensor[1]

Note 1 – These options are currently in development

5. Equipment Installation

5.1 Factory support

For customized products, we recommend that a Grundfos service engineer supervise installation and startup.
This is to ensure that the equipment is properly installed. This will also allow end user personnel the opportunity to review and see implemented, factory-recommended instructions.

5.2 Inspection

All system parts were carefully inspected before leaving the factory, but may have become soiled or damaged in shipping and handling or storage at site. The installer must therefore check that all parts are clean and undamaged before installing them.

5.3 Required Tools and Fixtures

Tools and fixtures for FireConnect™ system installation, disassembly, and reassembly may include these items:
- Lifting devices (hoist or straps)
- Screwdriver (slotted and/or phillips)
- Wire pliers
- Standard pipefitting equipment (for flowmeter transducer installation)

5.4 Location

The FireConnect™ system must be installed on a panel stand or wall rigid enough to support the entire weight of the device.   The system must be protected indoors from environmental exposures such as excessive heat, cold, dust, and precipitation. Grundfos recommends to install FireConnect™ Gateway Controller on the wall near the main fire pump controller.

5.5 FireConnect™ Gateway Controller (FCGC) Installation

See Figure 3. FCGC Panel Dimensions for mounting dimensions.

Figure 3. FCGC Dimensions
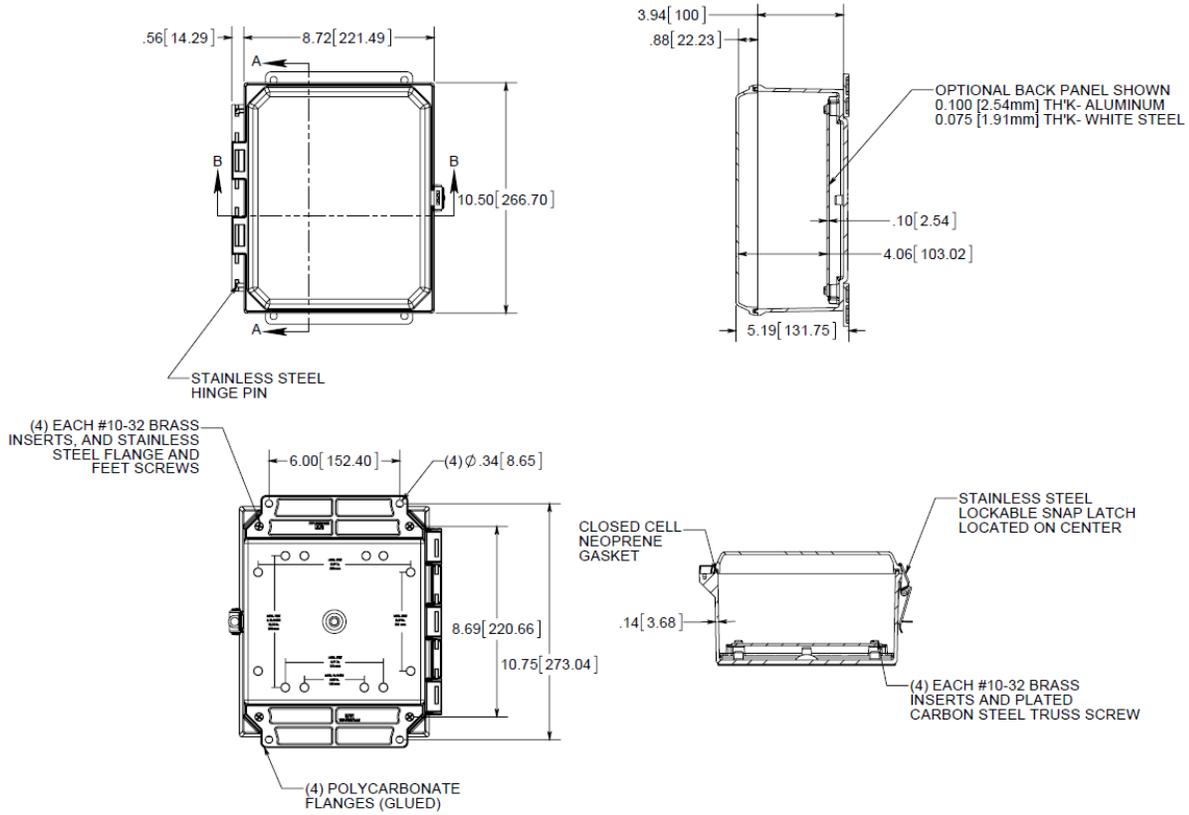
5.5.1 Wiring FireConnect™

In addition to any optional alarms required by the fire pump specification, both controllers (main and jockey) must be ordered with Modbus RTU options.

Caution

If Modbus RTU is not supplied as a standard feature on the controller, it must be specified at time of ordering or purchase of a new controller for FireConnect™ to perform correctly. Field modification of newer controllers may be possible. Contact Grundfos for details.

Warning
Before doing any electrical work, ensure all power supplies have been disconnected before continuing.

5.5.1.1 Wiring to Power Supply

FireConnect™ requires 120/240VAC, 1PH, 50/60Hz to power the unit from an external source.
1. Open FireConnect™ Gateway Controller cover and locate the power supply terminal strip. (See Fig 4).
2. Terminate incoming power feed to terminal strip, marked in **Figure 4** as **L – N – G** (Line, Neutral, Ground).

Figure 4 – FireConnect™ Gateway Controller

5.5.1.2 Wiring to Pressure Transducer

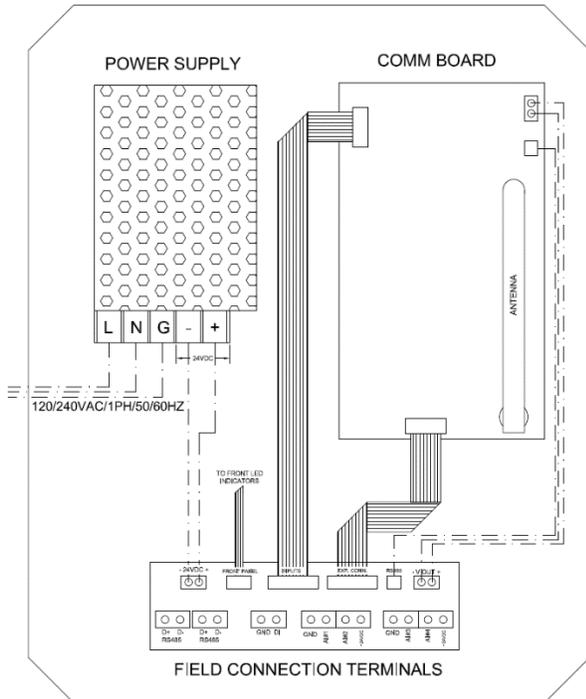FireConnect™ requires an external pressure sensor installed in the fire system suction piping. The pressure transducer will be supplied with unit. Refer to Section 5.6.1 for the recommended transducer location and installation. The contractor must supply 22awg shielded wiring from the transducer to the FCGC.

1. Install 22awg/2c shielded wire to pressure transducer (PT) screw terminals per Fig 5.
2. Open FireConnect™ cover.
3. Feed wire into FCGC through the cable gland on the bottom side of the enclosure.
4. Terminate the negative (-) wire at the screw terminal labeled **AI#1**. See Fig 5.
5. Terminate the positive (+) wire at the screw terminal labeled **+24VDC**. See Fig 5.

Figure 5 – Pressure Transducer-FCGC Wiring
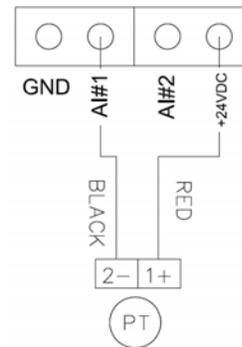
5.5.1.3 Wiring to Flowmeter - ANALOG

In most installations, FireConnect™ utilizes a magnetic induction flowmeter installed in the fire system suction piping. Refer to Section 5.6.2 for proper flowmeter location and installation. When required, the flowmeter will be supplied with the equipment. The contractor must supply 18awg/4c shielded wiring from the flowmeter to the FireConnect™ Gateway Controller.
1. Install18awg/4c shielded wire to two 5-pin M12 connectors, per Fig 6. (shipped with flowmeter)
2. Only flowmeter connections X1 and X3 will be used for Analog flowmeters.

Figure 6 – Flowmeter Connections - ANALOG

Connection	Pin	Signal Name
X1 A Coded M12 Plug	1	24VDC Supply Voltage
	2	(not used)
	3	Ground
	4	(not used)
	5	(not used)
X3 A Coded M12 Plug	1	+ Current Output
	2	- Current Output
	3	(not used)
	4	(not used)
	5	(not used)

3. Open FCGC cover.
4. Feed wire into FCGC through the cable gland on the bottom side of the enclosure.
5. Terminate X1 1+ to the screw terminal labeled **+24VDC** as shown in Fig 7.
6. Terminate X1 3- to the screw terminal labeled **GND** as shown in Fig 7.
7. Terminate X3 1+ to the screw terminal labeled **AI#2** as shown in Fig 7.
8. Terminate X3 2- to the screw terminal labeled **GND** as shown in Fig 7.

Figure 7 – Flowmeter-FCGC Wiring - ANALOG
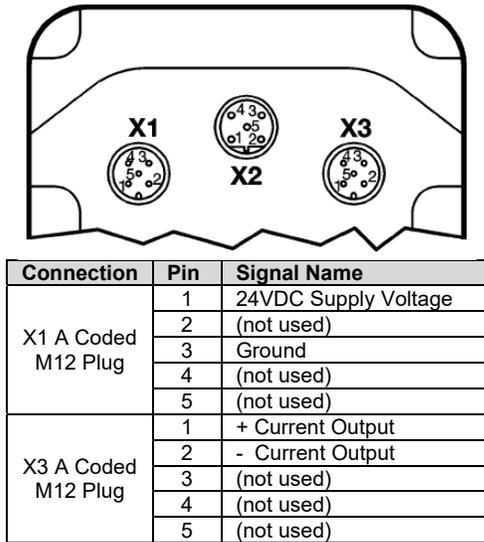

5.5.1.4 Wiring to Flowmeter - MODBUS

In most installations, FireConnect™ utilizes a magnetic induction flowmeter installed in the fire system suction piping. Refer to Section 5.6.2 for proper flowmeter location and installation. When required, the flowmeter will be supplied with the equipment. The contractor must supply 18awg/4c shielded wiring from the flowmeter to the FireConnect™ Gateway Controller.
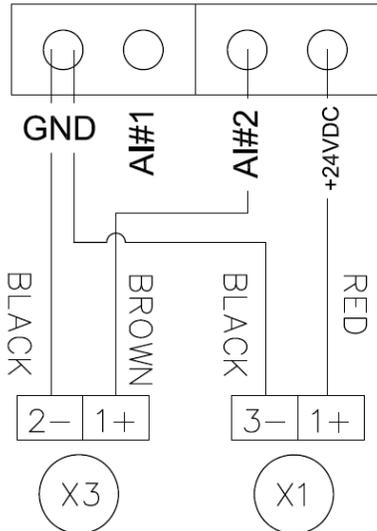
1. Install18awg/4c shielded wire to two 5-pin M12 connectors, per Fig 8. (shipped with flowmeter)
2. Only flowmeter connections X1 and X2 will be used for Modbus flowmeters.

Figure 8 – Flowmeter Connections - MODBUS
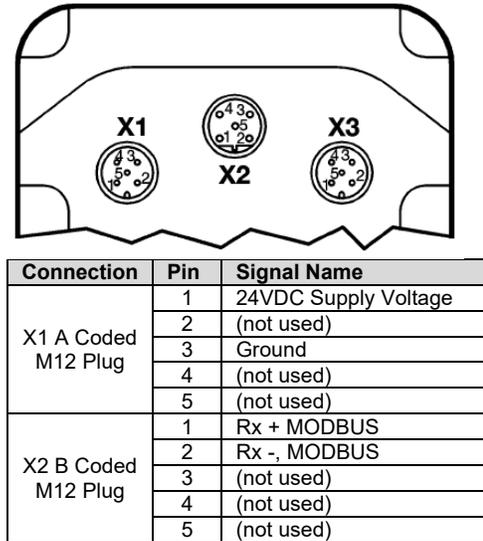
Connection	Pin	Signal Name
X1 A Coded M12 Plug	1	24VDC Supply Voltage
	2	(not used)
	3	Ground
	4	(not used)
	5	(not used)
X2 B Coded M12 Plug	1	Rx + MODBUS
	2	Rx -, MODBUS
	3	(not used)
	4	(not used)
	5	(not used)

3. Open FCGC cover.
4. Feed wire into FCGC through the cable gland on the bottom side of the enclosure.
5. Terminate X1 1+ to the screw terminal labeled **+24VDC** as shown in Fig 9.
6. Terminate X1 3- to the screw terminal labeled **GND** as shown in Fig 9.
7. Terminate X2 1+ to the secondary Modbus screw terminal labeled **D+ RS485** as shown in Fig 9.
8. Terminate X2 2- to the secondary Modbus screw terminal labeled **D- RS485** as shown in Fig 9.

Figure 9 – Flowmeter-FCGC Wiring – MODBUS
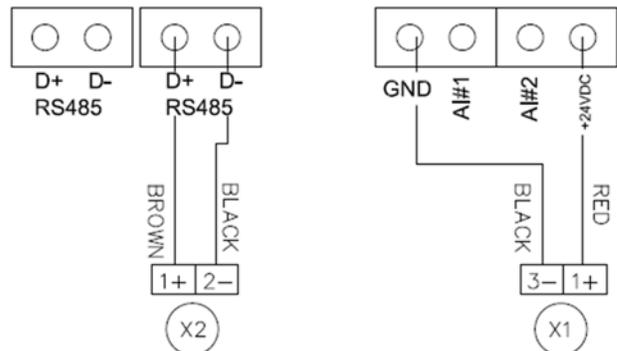
5.5.1.5 Wiring to Modbus

FireConnect^{TM} requires RS-485 Modbus connections with the main fire pump controller (hereafter named FPC) and with the jockey maintenance pump controller (if installed, hereafter named JPC). The contractor must supply 22awg shielded wiring from the FPC and JPC RS-485 Modbus Communications terminal block to the FireConnect^{TM} Gateway Controller.

1. Install 22awg/2c shielded wire to FPC RS-485 Modbus screw terminals per Fig 10.
2. Install 22awg/2c shielded wire to JPC RS-485 Modbus screw terminals per Fig 10
3. Open FCGC cover.
4. Feed wire into FCGC through the cable gland on the bottom side of the enclosure.
5. Terminate FPC Rx+ to **D+** as shown in Fig 10.
6. Terminate FPC Rx- to **D-** as shown in Fig 10.
7. Terminate JPC Rx+ to **D+** as shown in Fig 10.
   Terminate JPC Rx- to **D-** as shown in Fig 10.

Figure 10 – Modbus Wiring Connection

Note | Refer to the manufacturer's fire pump and jockey pump controller field connection diagrams and wiring schematics for further detail.

5.5.1.6 Tank Level Indication (optional)

In some FireConnect^{TM} installations, a water storage tank level monitoring option is required. This option consists of an additional pressure transducer (PTT) and a digital tank level indicator (LI). Refer to Section 5.6.3 for the recommended transducer location and installation. The contractor must supply 18awg shielded wiring from the transducer to level indicator, and then to the FireConnect^{TM} Gateway Controller.
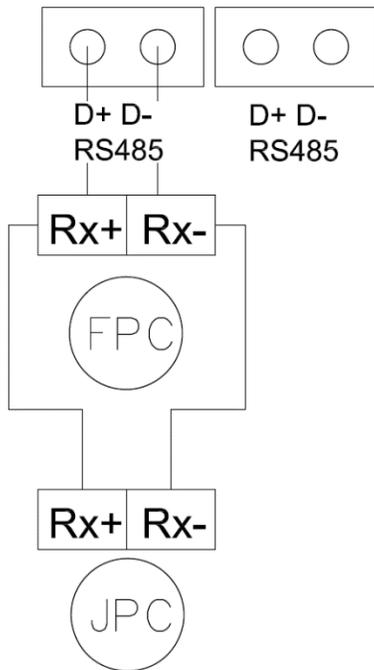
1. Install 18awg shielded wire to pressure transducer (PTT) screw terminal as shown in Fig 11.
2. Terminate the positive (+) wire at the FireConnect^{TM} screw terminal labeled **+24VDC**, as shown in Fig 11.
3. The negative (-) wire from PTT will terminate at the LI 4-Pin M12 connector position 1, as shown in Fig 11.
4. The negative (-) wire from the LI 4-Pin M12 connector position 3 will terminate back to the FireConnect^{TM} screw terminal labeled **AI#3**, as shown in Fig 11.

Figure 11. Tank Level Indicator Wiring
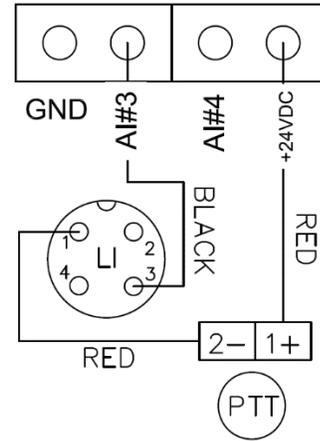
5.5.1.7 Speed Sensor (optional)

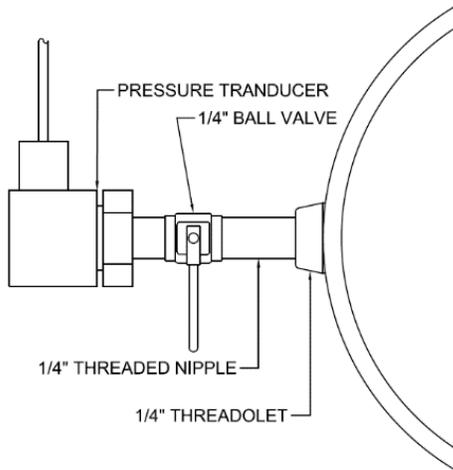*(This option is currently in development)*

5.5.1.8 Temperature Sensor (optional)

(This option is currently in development)

5.5.1.9 External Antenna (optional)

Depending on cellular communication strength in the fire pump room, mounting of an external cellular antenna may be required. This external antenna and wire can be specified at time of ordering or can be supplied at commissioning by Grundfos.

5.6 Sensory Equipment Installation

5.6.1 Installing the Pressure Transducer

FireConnect™ requires an external pressure sensor installed in the fire system suction piping. The pressure transducer will be supplied with unit. Refer to Section 5.5.1.2 for the transducer wiring details.

There are two recommended locations to install the pressure transducer:

1. A quarter-inch Threadolet® welded to the suction piping upstream of the pump. To guarantee the most accurate readings, it is recommended to install within a straight run of pipe at least two pipe diameters from the pump suction flange. See Figure 12.

2. Most installations will have installed a suction-isolating Outside Screw and Yoke Gate Valve (OS&Y). Some of the OS&Y valves will have a drilled, tapped, and plugged connection on the suction side of the valve. If available, this is a convenient location to install the transducer. Depending on the size of this outlet, reducing bushings may be required to adapt to the quarter-inch transducer. See Figure 12.

Figure 12. Pressure Transducer Locations
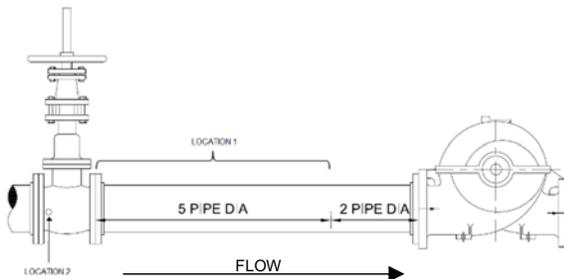
A typical installation should include a quarter-inch threaded nipple, quarter-inch isolating ball valve, and any bushings needed to reduce size. All threaded connections will require PTFE thread sealant (RectorSeal® T Plus 2® or equivalent), or PTFE plumber's tape. See Figure 13.

Figure 13. Typical Pressure Transducer Assembly

5.6.2 Installing the Flowmeter

In most installations, FireConnect™ utilizes a magnetic induction flowmeter installed in the fire system suction piping. Refer to Section 5.5.1.3 or 5.5.1.4 for flowmeter wiring details. When required, the flowmeter will be supplied with the equipment.

Caution It is critical that the flowmeter be installed in accordance with the following instructions. Failure to do so will result in inaccurate flow readings. **Please read all instructions before proceeding.**

⚠ All cutting and welding should be done by authorized personnel. Site safety precautions shall be observed.

1. In order to avoid turbulence, the flowmeter shall be installed with no less than straight piping runs of **five** pipe diameters upstream and **two** pipe diameters downstream. If the system design allows, it is the manufacturer's recommendation to allow for ten pipe diameters upstream, and five pipe diameters downstream of the flowmeter. See Figure 14.

Figure 14. Flowmeter Location
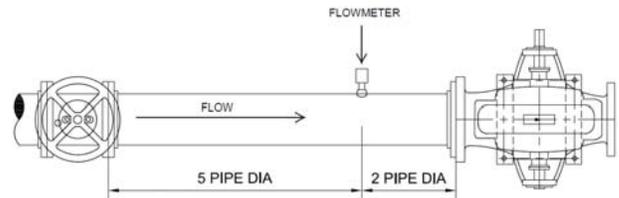
2. The recommended orientation of the flowmeter installation is as close to 90° as possible. Mounting the meter on the side of the pipe avoids trapped sediment and/or trapped air in the pipe system. See Figure 15.

Figure 15. Flowmeter Orientation
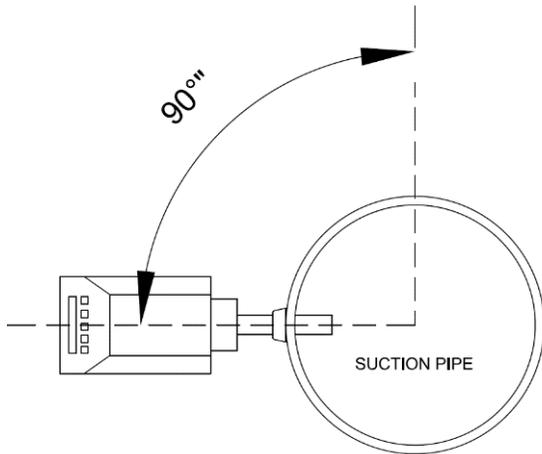
3. Once the flowmeter location has been determined, bore a hole with a diameter of 33mm (1 19/64") in the pipeline.
4. Lodge the weldolet supplied with the flowmeter into the Ø33mm hole, with the locking wing aligned 90° to the direction of flow. See Figure 16.

Figure 16. Weldolet Orientation

5. Review the table of mounting dimensions in Figure 17. The weldolet insertion depth is based on the pipe's nominal diameter and its wall thickness. The exposed length (L) is calculated as follows:

   L = 79 – S – T
   79 = Weldolet Total Length in Millimeters (3 7/64")
   S = Wall thickness of pipe
   T = Insertion depth (correspondent to nominal diameter)

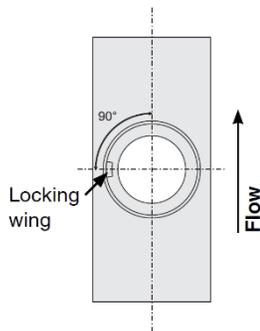**Example:** Nominal pipe diameter of 10" schedule 40 pipe has a wall thickness of 0.365". Per the table below, the T-dimension for 10" pipe is 1.2992" (or approximately 1 19/64"). The exposed length (L) is then calculated as:

   L = 3.1094" – 0.365" – 1.2992"
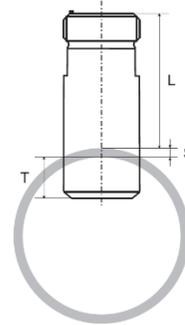   L = 1.4452"

Figure 17. Weldolet Mounting Depth

Table of Mounting Dimensions			
Nom Dia (mm)	T (mm)	Nom Dia (in)	T (in)
25	4.5	1	0.1772
32	6.0	1.25	0.2362
40	7.2	1.5	0.2835
50	8.3	2	0.3268
65	10.0	2.5	0.3937
80	12.0	3	0.4724
100	14.5	4	0.5709
125	17.5	5	0.6890
150	20.5	6	0.8071
200	27.0	8	1.0630
250	33.0	10	1.2992
300	39.5	12	1.5551

6. After the weldolet's insertion depth has been determined, weld the weldolet in place.
7. After the weldolet has cooled, insert the flowmeter into the weldolet.
8. Thread the flowmeter union nut onto the weldolet until it is snug.
9. Connect wiring terminations as instructed in Section 5.4.1.3.

5.6.3 Installing the Tank Level Indicator (Optional)

In some FireConnect™ installations, a water storage tank level monitoring option is required. This option consists of an additional pressure transducer (PTT) and a digital tank level indicator (LI). Refer to Section 5.5.1.6 for the tank level digital display and pressure transducer wiring details.

The tank level digital display is equipped with a steel standoff bracket. The bracket is mounted to the back of the display enclosure using two screws (supplied). The assembly can then be mounted to the pump room wall or wherever a suitable location is feasible.

The location of the pressure transducer will be the same mounting location for the pressure transducer in Section 5.6.1. An additional isolating quarter-inch ball valve, two threaded nipples and a threaded tee will be required. All threaded connections will require PTFE thread sealant (RectorSeal® T Plus 2® or equivalent), or PTFE pipe thread tape. See Figure 18.

Figure 18. Tank Level Pressure Transducer Installation

PRESSURE TRANDUCER — 1/4" NIPPLE
1/4" BALL VALVE
PRESSURE TRANDUCER
1/4" TEE
1/4" NIPPLE
1/4" THREADOLET
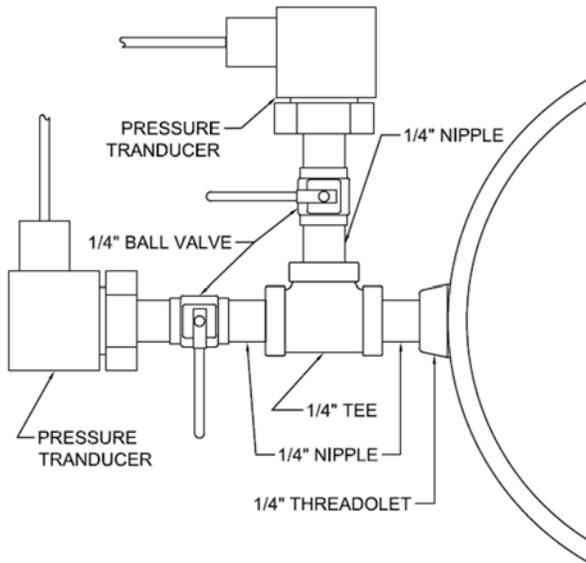
5.5.4 Installing the Speed Sensor (Optional)

(This option is currently in development)

5.5.5 Installing the Temperature Sensor (Optional)

(This option is currently in development)

6.0 Setup, Operation, and Shutdown

6.1 Setup

The FireConnect™ system startup and commissioning requires interactivity between the Grundfos sales representative and the FireConnect™ startup technician.

The startup technician may visit the installation prior to the formal fire pump startup to ensure FireConnect™ components have been installed properly. At this time, powering on of the FireConnect™ system may be performed. If a pre startup visit is not performed, then FireConnect™ commissioning will be performed in conjunction with the formal fire pump startup.

6.1.1 Powering On

After equipment installation has successfully been completed per Section 5 instructions, the FireConnect™ system is now ready for powering on.

Warning
Before proceeding, double check that all electrical connections are properly terminated and secured. Electrical shock, or damage to the components may occur.

Since there is no manual on/off switch on the FireConnect™ Gateway Controller, the system is live as soon as power from the main feed is active. At this point, close the main power feed circuit either from the pump house junction box or main breaker panel.

At the point power has been applied, the FCGC will start communicating with the fire pump and jockey controllers (if they have been powered on), sensors, and the cloud network. FCGC power and cloud connectivity can be confirmed by the "CLOUD HEARTBEAT" indicating LED on the front of the FCGC.

The Grundfos sales representative or startup technician will then be required to activate the equipment with the online Grundfos FireConnect™ application.

6.1.2 Configuring the Flowmeter

The Flowmeter is calibrated at the factory and therefore ready for operation when the FireConnect™ Gateway Controller is powered on. However, the following settings are necessary before operation:

- **SetBasics**
  - Display Mode
  - Flow Unit of Measure (Q)
  - Decimal Point
  - Frequency of Mains
  - D. Refresh
  - Help Language
- **SetFunction**
  - Qmin
  - Qmax
- **SetCalibration**
  - Type
  - Pipe Unit of Measure
  - Pipe ID
  - Nominal Pipe Size
  - Material

6.1.2.1 Flowmeter Parameter Navigation

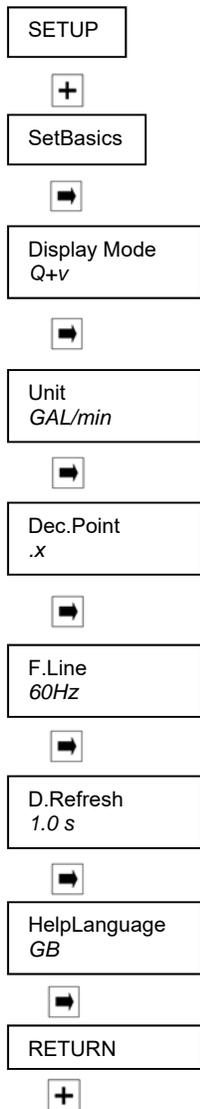The ➕ and ➖ keys are used to cycle between configuration submenus.

The Flowmeter buttons ⬅️ ➡️ ➕ ➖ are used for navigating the configuration menus.

Use ⬅️ or ➡️ to move the cursor onto the respective parameter, and change it with the ➕ and ➖ keys.

6.1.2.2 SetBasics

Use Figure 19 to configure the SetBasics parameters as referenced in Section 6.1.2.

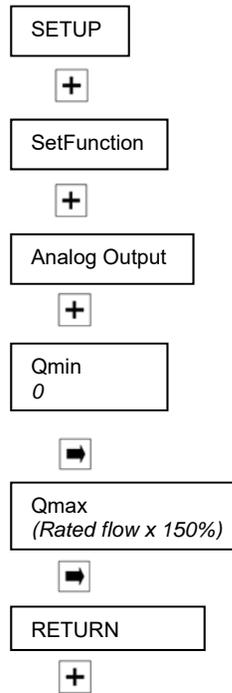**Figure 19. SetBasics Parameters Configuration**

```
        SETUP
          ➕
       SetBasics
          ➡️
     Display Mode
        Q+v
          ➡️
        Unit
      GAL/min
          ➡️
      Dec.Point
         .x
          ➡️
        F.Line
        60Hz
          ➡️
      D.Refresh
       1.0 s
          ➡️
    HelpLanguage
        GB
          ➡️
       RETURN
          ➕
```

6.1.2.3 SetFunction

Use Figure 20 to configure the SetFunction parameters as referenced in Section 6.1.2.

Figure 20. SetFunction Parameters Configuration

```
        SETUP
          ➕
     SetFunction
          ➕
    Analog Output
          ➕
        Qmin
         0
          ➡️
        Qmax
  (Rated flow x 150%)
          ➡️
       RETURN
          ➕
```
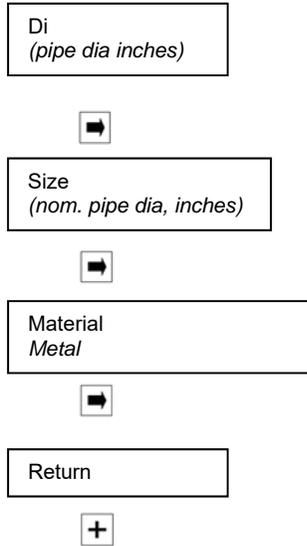
6.1.2.4 SetCalibration

Use Figure 21 to configure the SetCalibration parameters as referenced in Section 6.1.2.

Figure 21. SetCalibration Parameters Configuration

```
        SETUP
          ➕
    SetCalibration
          ➕
        Pipe
          ➕
        Type
        GEMÜ
          ➡️
      UnitPipe
        inch
          ➡️
```
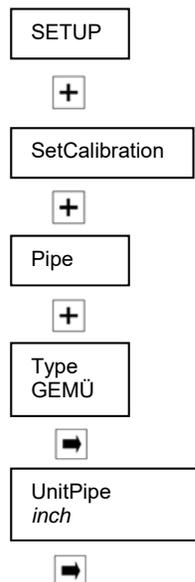
(Figure 21 continues on next page)

(Figure 21 Continued)

Di *(pipe dia inches)*

⮕

Size *(nom. pipe dia, inches)*

⮕

Material *Metal*

⮕

Return

➕

6.1.3 Configuring the Tank Level Display

This content is currently under development.

6.1.4 Connecting to the Cloud

FireConnect^{TM} begins transmitting to the cloud as soon as it has a live power feed. However, the Grundfos sales representative or the start-up technician will be responsible for activating the user's account with the Grundfos FireConnect^{TM} online application, where the real-time fire pump system data is viewed.

Once the account is activated the principal user(s) will be given login information for the online application.

6.2 Operation

Once the Grundfos FireConnect^{TM} account has been activated, the system is now ready to use. Refer to the online application's manual for FireConnect^{TM} operation.

6.3 Shutdown

The FireConnect^{TM} system does not have a manual on/off switch, so to shut it down, one simply disconnects the main power feed either through the pump house junction box or main circuit breaker.

7.0 Troubleshooting

Fault	Cause	Remedy
1. No power to FireConnect^{TM} Gateway Controller.	a) Power feed to main breaker disconnected. b) Power feed to FCGC disconnected.	• Check main breaker • Check all wire terminals and terminal blocks, ensuring they are secure
2. No connectivity to Grundfos FireConnect^{TM} app.	a) Poor cellular connection b) Antenna is disconnected or poorly connected d) The Grundfos FireConnect^{TM} app is down for maintenance.	• If connection is consistently poor, consider upgrading to external antenna. • Check internal antenna connection in FireConnect^{TM} to ensure it is snug. • Call the Grundfos sales representative or installing technician for assistance
3. Erroneous/unusual readings on the Grundfos FireConnect^{TM} app.	a) Pressure transducer failure b) Flowmeter transducer incorrectly installed. c) Flowmeter configuration parameters incongruent with parameters in the app.	• Check connections to pressure transducer. Replace if necessary. • Review flowmeter installation section of this manual. If installed incorrectly, contact Grundfos sales representative for replacement parts. • Review flowmeter configuration parameters (units of measure, etc.) to ensure they align with those configured in the app.
4. Flowmeter error message: - "010 Out of Range"	a) The flow rate/flow velocity exceeds the value of Qmax or is below the value of Qmin (Analog Output configured in Section 6.1.2.3)	• Adjust Qmin and Qmax or reduce/increase the flow. Since the standard configuration is 0-150% of rated flow, exceeding this range could cause damage to the pump and/or downstream firewater system.
	Additional content is in development.	

8.0 Frequently Asked Questions

This section is currently in development.

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