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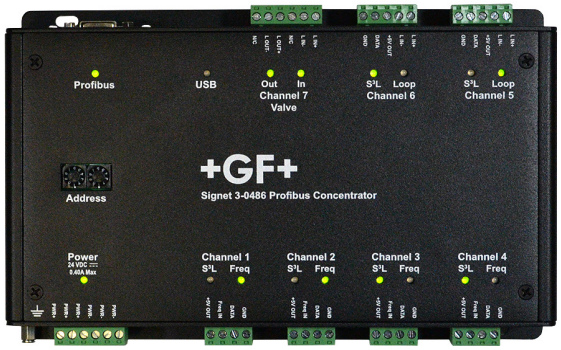
Signet 0486 Profibus Concentrator



The Signet 0486 Profibus Concentrator allows for simplified connection of Signet sensors to a PROFIBUS network. The 0486 supports six sensor interfaces and a 4 to 20 mA current loop proportional valve interface. The 0486 supports PROFIBUS DPV1 and is available with either DB9 or M12 network connectors.

The 0486 sensor interfaces are multifunctional. All six inputs are compatible with Signet digital (S^3L) sensors, four inputs are compatible with frequency output flow sensors, and two inputs are compatible with 4 to 20 mA current loops. The 0486 PLC interface allows for complete control of the Signet sensors. The programmer is able to configure the sensor for the specific needs of their application, read measurements in engineering units, and gather diagnostic data to ensure accuracy and correctness of readings.

In addition to interfacing to Signet sensors the six (S^3L) inputs will also support the 8059 four channel relay module allowing for on/off control of GF valves or other devices. Up to six 8059 can be connected to a single 0486 giving the user the ability to control 24 on/off devices.

The proportional valve interface is designed to interface with Georg Fischer electric and pneumatic actuators offering proportional valve positioning control or other 4 to 20 mA current loop devices. The interface will send a 4 to 20 mA current loop to the proportional interface, and read back a 4 to 20 mA current loop signal from the valve to ensure proper valve positioning.

Fail-safe control of valves is built into the 0486. The programmer is able to configure the state of each individual relay, off or on, and the current level of the proportional valve interface in case of communications disruption. This will ensure that the system will fail in a safe, known state.

The 0486 supports diagnostic messaging for the sensors; the programmer can read the state of each sensor to ensure control is based on accurate readings. Mis-wiring, probe failure, or other events will be reported back to the PLC for proper handling and alerting.

Features

- **Interface six Signet sensor or relay modules and a proportional valve to a PROFIBUS network with a single service**
- **Four channels support (S^3L) or flow frequency devices**
- **Two channels support (S^3L) or 4 to 20 mA current loops**
- **One channel for dedicated 4 to 20 mA current loop input and output. Ideal for proportional valve control or other current loop uses.**
- **Support for PROFIBUS DP V1 and DP V0**
  - **Supports 9.6K to 12M bits/second network speeds**
  - **System and sensor diagnostic support (DP V1)**
  - **Fail-safe for 8059 Relay Modules and proportional valve outputs on communication failure**
- **Simplifies the programming of sensors, saving programming time and reducing errors.**
- **Convenient DIN Rail or surface mountable enclosure**

Applications

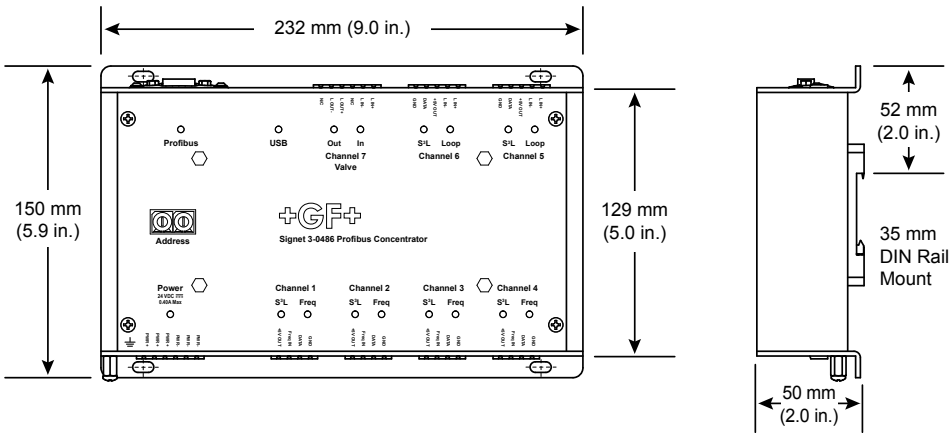
- **Automation Upgrades**
- **Filter and RO Skids**
- **Neutralization Systems**
- **Water and Wastewater Treatment**
- **Pool and Spa Control**
- **Aquatic Animal Life Support Systems and Aquaculture**

Specifications

General	
Channels	4 channels digital (S^3L) or frequency input (open collector or sinusoidal)
	2 channels digital (S^3L) or 4 to 20 mA current loop
	1 channel 4 to 20 mA current loop input/output for valve positioning or current loop uses
Accuracy	Frequency, accuracy ± 0.5% of reading max error @ 25 °C, resolution 1 uS
	4 to 20 mA current loop input, accuracy ± 32 uA @ 25 °C, resolution 16 uA
	4 to 20 mA current loop output, accuracy ± 32 uA @ 25 °C, resolution 6 uA
Terminal Plug Type	Pluggable screw types, 24 to 12 AWG
Enclosure	
Material	Aluminum 6063 T3 and 5052 H32 powder coated
Mounting	Surface (not included)
	35 mm DIN rail mounts (included)
Input Power	
DC	24 VDC ±10% @ 10 W max., 0.40 A max. External Surge Protection is Required, 2KV Common Mode, 1KV Differential Mode.
Input Specifications	
Digital (S^3L)	Channels 1, 2, 3, 4, 5 and 6
Output Power	5 VDC regulated @ 20 mA
Overcurrent Protected	Each channel independently protected
	A short on a channel will not impair the other channels
Frequency	Channels 1, 2, 3 and 4
Range	1 to 1300 Hz
4 to 20 mA Current Loop Input	Channels 5, 6 and 7
Maximum Voltage	40 VDC
Maximum Current	40 mA
Maximum Voltage Drop	5 VDC
Min. Update Rate	100 mS
Reverse Voltage and Over Current Protected	
Output Specifications	
4 to 20 mA Current Output	Channel 7
Max. Excitation Voltage	24 VDC
Min. Excitation Voltage	12 VDC
Max. Resistance	250 Ω @ 12 VDC
	500 Ω @ 18 VDC
	750 Ω @ 24 VDC
Min. Update Rate	100 mS
Environmental	
Operating Temperature	-10 °C to 70 °C (14 °F to 158 °F)
Storage Temperature	-20 °C to 85 °C (-4 °F to 185 °F)
Relative Humidity	5 to 95% non-condensing

Profibus		
Output Signal	Profibus-DP V1according to IEC 61158-2	
DP Function	Slave	
Transfer Rates	9.6 kbps to 12 Mbps	
Signal Coding	NRZ Code	
Physical Layer	RS 485	
Connection 3-0486-D	9-pin D-sub female connector	
Connection 3-0486-M	M12 connector (Special order)	
Shipping Weight		
	1.4 kg	3.0 lb
Standard and Approvals		
	RoHS compliant, China RoHS	
	Profibus Certified	
	Manufactured under ISO 9001 for Quality	
	Safety: UL 61010-1, CAN/CAS-C22.2 No. 61010-1, IEC 61010-1:2010	
	EMC: EN 61000-6-3:2007+A1, IEC 61000-6-3:2006+A1, FCC 15.107 Class B, FCC 15.109 Class B, FCC 15.109(g) Class B, EN 61000-6-2	

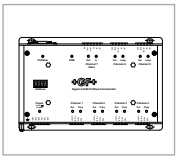
Dimensions



Support

- 2250 Hydrostatic Level
- 2350 Temperature
- 2450 Pressure or Hydrostatic Level
- 515, 525, 2536, 2540, 2000, 2100, 2507, 2551 or 2552 Flow
- 2610-51 Dissolved Oxygen
- 2751 pH/ORP Smart Sensor Electronics
- 2850 Conductivity
- 8058 iGo Signal Converter
- 8059 Relay Module
- PA11, 21, 30 or 90 Pneumatic Actuators Pilot Valve and 5-Series DIASTAR Pneumatically Actuated Diaphragm Valves On/Off Control (requires 8059)
- EA11, 21, 31, or 42 Electric Actuator On/Off Control and Type 104 Electrically Actuated Ball Valves (requires 8059)
- DSR 500 -1, -2, or -3 Pneumatic Valve Positioner
- EA21, 31, or 42 with PE25 Electric Valve Positioner

Ordering Information



Mfr. Part No.	Code	Description
3-0486-D	**159 001 839**	DB9 Profibus Concentrator

Special Order Options - Please consult the factory

3-0486-M Profibus Concentrator with M12 connector

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
6682-1104	**159 001 712**	Loop power plug, 4-pos, right angle
6682-0051	**159 866 089**	Terminal block plug, 5-pos
6682-0061	**159 866 090**	Terminal block plug, 6-pos
3-0486.390	**159 310 266**	Profibus DIN mount kit (two DIN mount plates and six screws)

3-0486.099 Rev D (06/20)
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