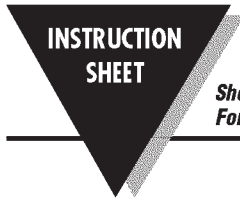




FSW-410 Series

Thermal Flow Switches



M-4623/0208

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FSW-410 SERIES INSTALLATION & INSTRUCTION SHEET

- 1.0 Install the FSW-410 by inserting the 1/2" MNPT threaded sensor tip into a tapped pipe or T fitting. Use Pipe Tape or Plumbers Putty on NPT threads to aid in sealing. Tighten firmly, but do not over tighten as this could damage the NPT threads and prevent proper sealing.
- 2.0 With provided connection cable disconnected, complete unit wiring by connecting the Brown wire to +24VDC supply and the Blue wire to common. The Black wire is now connected to the + side of your load. The - side or common side of the load is now connected to the ground. **NOTE:** Be sure that the common (ground) of the FSW-410 and the LOAD are the same. The white wire (if present) is not used.
- 3.0 Upon initial power-up the unit will provide a temporary output as the unit is adjusting to the zero flow rate of the media. After approximately 10-15 seconds the output will turn off. Once the unit output has turned off, the unit is ready for operation. Once the threshold of the unit set point (approx. .3-.4 meters/second) is reached the output will turn on.
- 4.0 As the FSW-410 unit also monitors the media temperature, the unit will provide a loss of signal if the temperature of the media goes above the threshold of the unit temperature set point (typically 50 or 70 Deg. C.), even with proper media flow.

NOTE:

Use caution while installing the FSW-410 so as not to damage the tip of the sensor. The electronics are embedded just behind the tip of the FSW-410 and denting or bottoming out of the tip could cause damage.

Maintenance is not required, as the FSW-410 has no moving parts. However, should the sensor become coated after a period of time in operation due to water or media conditions, simply wipe the probe tip with a soft cloth and alcohol.

FSW-410 Series
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INSTRUCTION SHEET

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TECHNICAL INFORMATION
FSW-410 SERIES

The safe sensing solution for industrial cooling systems.
 The FSW-410 utilizes the calorimetric principle and the All-in-One monitoring of flow and temperature of the coolant.

The FSW-410 is especially designed, for all types of cooling systems, as a reliable alternative to failure prone mechanical flow switches.

- Compact electronic unit with no moving parts
- No adjustment or calibration needed
- Maintenance free
- Fail safe normally open switch
- Easy to Install

Technical Data

Type	FSW-410
Medium	Water based liquid

Sensor Data

Low Flow Set Point	0.3 m/s (.9 fps) (water related)
Hi Temp Set Point	50°C (122°F) or 70°C (158°F), other settings possible on OEM
Medium temperature	-20°C (-4°F) to + 80°C (176°F)
Response time	5 – 10 seconds
Repeatability	< 0.5 %
Hysteresis	approx. 20% of setpoint value
Pressure	10 bar (150 PSI)

Mechanical Data

Protection class	IP 67 (NEMA6)
Housing Material	Stainless Steel 1.4301 (303)
Thread	½" -14 NPT (NPT)
Connection	M12 male socket, 4 pin + 2m connection cable with M12 connector

Electrical Data

Operating voltage	18 to 30 V DC, incl. residual ripple
Switching current	<input type="checkbox"/> 200 mA
Power Consumption	4 W max.
Initial Operation	after 15 seconds
Electrical Output	PNP n.o. (switch closed with flow)

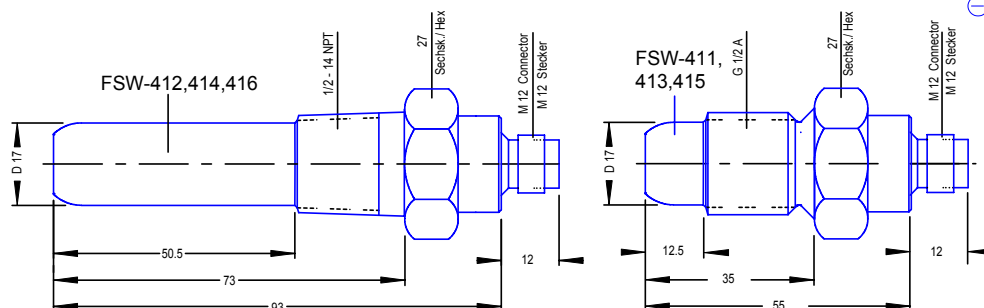
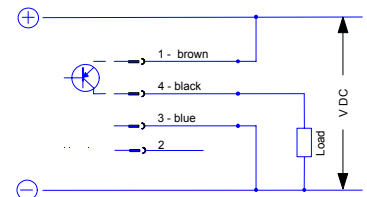
Part Number Key:

Example: FSW-414

Temp Setpoint (°C),
 Flow Set Point (m/s),
 Sensor Head Length,
 Thread

code: **50nc**
 code: **.3no**
 code: **50.5mm**
 code: **1/2" NPT**

Connection diagram





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If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. **BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS).** The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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