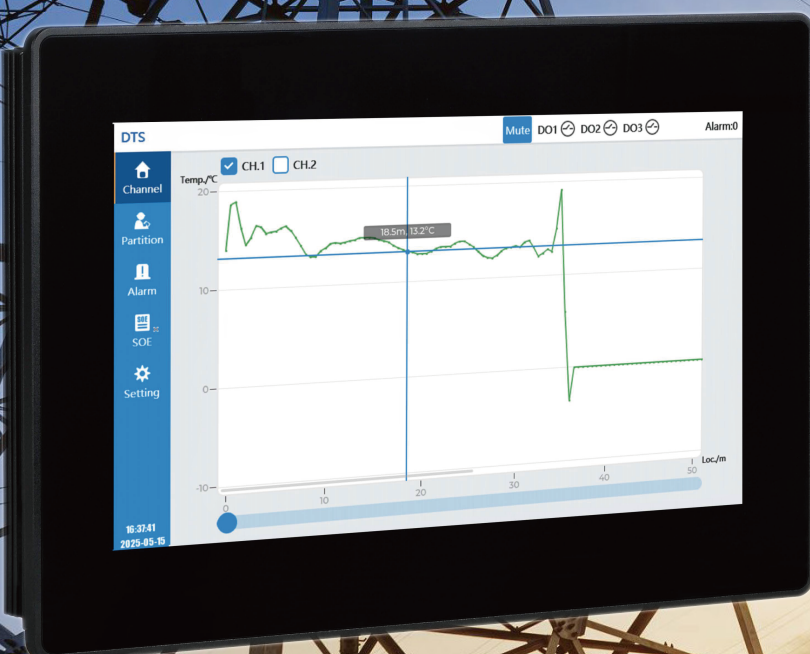




PMC-3601F

Distributed Fiber Optic Temperature Sensor

PMC-3601F



Overview

PMC-3601F, a Distributed Fiber Optic Temperature Sensor, can provide accurate temperature monitoring over a long distance. By using the Raman Scattering principle, the temperature distribution along the entire length of an optical fiber cable and the location of temperature anomalies can be determined. Its long-range, high-accuracy monitoring, immunity to electromagnetic interference and intrinsic lightning protection make it particularly suitable for applications such as oil and gas pipelines, petrochemical, chemical, metallurgy, power, fire protection, energy storage and the nuclear industry.

Features Summary

Ease of use

- Large, High-Resolution Color Dot-Matrix HMI Touch Screen
- Intuitive Interface and simple configurations
- Easy installation with wall mount or panel cutout, no tools required
- Long service life, low cost, and simple system architecture

Digital Outputs

- 3 channels for alarming and device live-status monitoring
- Form A mechanical relay

SOE Logs

- 5000 events time-stamped to $\pm 1\text{ms}$ resolution
- Setup changes, Setpoint, Fault Alarm, DO operations, Clear actions, etc.

Setpoints

- 6 user programmable setpoints with extensive monitoring parameters including Over Temperature Setpoint, Under Temperature Setpoint, Over Temperature Rise Rate Setpoint, Over Temperature Difference Setpoint, Temperature Anomaly Setpoint, Disconnection
- Timely Anomaly Positioning

Data Recorder

- Data recorder for each of the 4 optical channels
- 5,760 data recorders for each of 4 optical channels

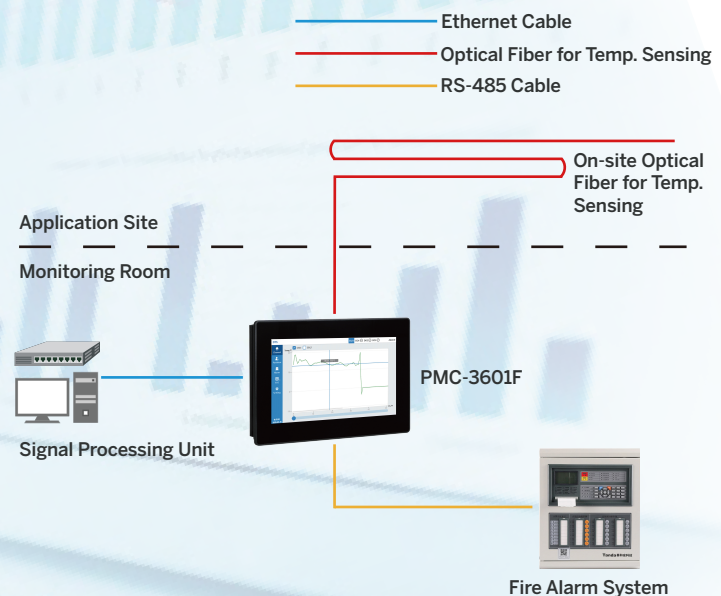
Temperature Measurement

- 4 Optical Channels. Touchscreen zooming supported. 50 zones per channel, 100 segments per zone
- Standard 62.5/125 μm Multimode Fiber
- Measurement range of $-40^{\circ}\text{C} \sim +150^{\circ}\text{C}$ with accuracy of $\pm 1^{\circ}\text{C}$
- Maximum Monitoring Distance of 10km for remote monitoring
- Continuous Temp. Monitoring
- EMI Resistant & Intrinsic Lightning Protection
- Complies with EN 54-2/-18/-22 Standard

Communications

- 2x10Base-T/100Base-TX Ethernet Port with RJ45 + 2xRS-485 Port
- Standard Modbus RTU and Modbus TCP support

Typical Application Diagram



Technical Specifications

Power Supply	
Type	DC 24V ±5%
Loading	< 15W

Digital Outputs (DO11, DO12, DO21, DO22, DO31, DO32)	
Type	Form A Mechanical Relay
Loading	5A @ 250VAC or 30VDC
Breaking Capacity	220VDC/0.1A or 110VDC/0.3A or 48VDC/1A 10,000 breaking operations (L/R=40ms)
Active/Return Time	< 10ms

Temperature Measurement	
Optical Channel Number	4
Optical Fiber Type	Standard 62.5/125 μm Multimode Fiber
Measurement Range	-40°C ~ +150°C (Depends on Optic Fiber)
Accuracy	±1°C
Max. Monitoring Distance	10km
Positioning Accuracy	±1m
Cycle Measurement Time	< 5s/Channel

Built-in Buzzer	
Sound Pressure Level (SPL)	65dB < SPL < 115dB (Directly in front of the signal processing unit)

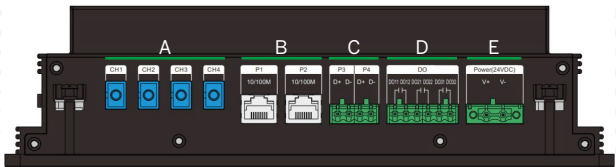
Communications	
RS-485	
Protocol	Modbus RTU
Baud Rate	1.2/2.4/4.8/9.6/19.2/38.4 kbps
Mode	Half-duplex
Ethernet	
Connector	RJ45
Protocol	Modbus TCP
Speed	10/100 Mbps

Terminals Installation Torque	
Power Supply	0.5 N·m
Others	0.5 N·m

Environmental Conditions	
Operating Temperature	-10°C to +50°C
Storage Temperature	-40°C to +85°C
Humidity	5% to 95% non-condensing
Atmospheric Pressure	70kPa to 106kPa
Altitude	≤ 3000m
Pollution Degree	2

Mechanical Characteristics	
Unit Dimensions	280 x 190 x 74 mm
Mounting	Wall-mounted or Panel Cutout
IP Rating	IP30

Terminal Diagram



Area	Label	Description
A	CH1~CH4	4x Fiber Optic Temp. Sensing Channel
B	P1, P2	2xEthernet Port
C	P3, P4	2xRS-485 Port
D	DO11, DO12, DO21, DO22, DO31, DO32	3xDigital Output
E	V+, V-	Power Supply

Standards of Compliance

Fire Detections	
Fire Detection and Fire Alarm Systems - Part 2: Control and Indicating Equipment	EN 54-2: 1997 + A1
Fire Detection and Fire Alarm Systems - Part 18: Input/Output Devices	EN 54-18: 2005 + AC
Fire Detection and Fire Alarm Systems - Part 22: Resettable Line-Type Heat Detectors	EN 54-22: 2015 + A1

Safety Requirements	
Products Safety Requirements and Tests	EN 61010-1: 2010 + A1: 2019
AC Voltage	2kV @ 1 minute
Insulation Resistance	>100MΩ
Impulse Voltage	6kV, 1.2/50μs

EMC Compatibility

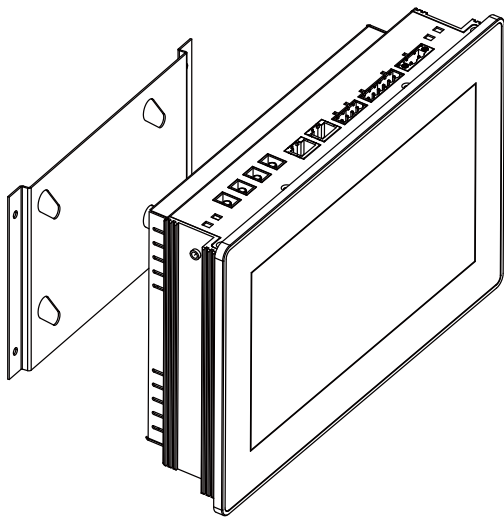
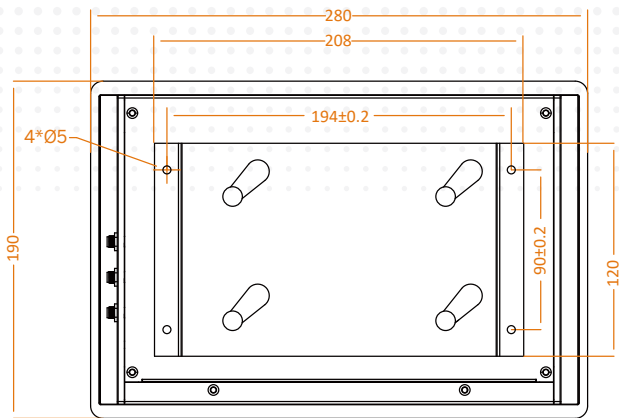
CE EMC Directive 2014/30/EU

Immunity Tests (EN 50130-4)	
General and Guidance	EN 60068-1: 1994
Electrostatic Discharge	EN 61000-4-2: 2009
Fast Transients	EN 61000-4-4: 2004 + A1: 2010
Surges	EN 61000-4-5: 2006

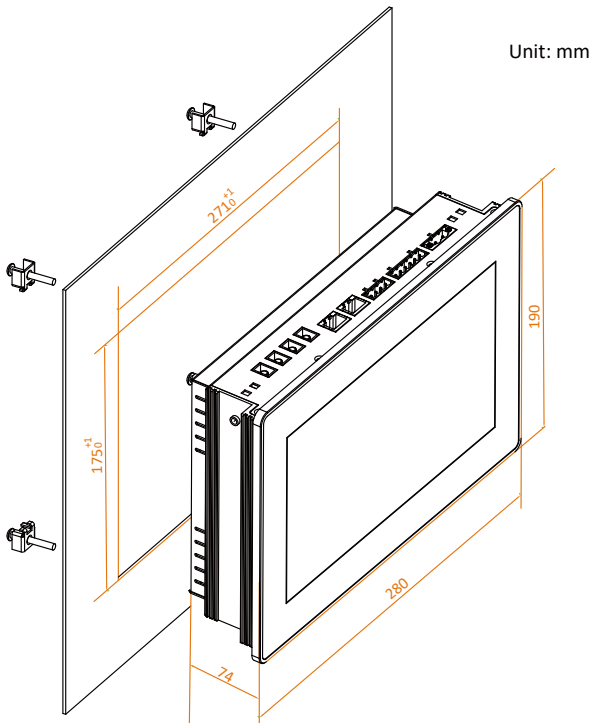
Mechanical Tests	
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Bump	IEC 60068-2-29

Dimensions and Installation

Unit: mm



Wall Mount (Large hole above small hole)



Panel Cutout

Ordering Information

Product Code				Description					
PMC-3601F Distributed Fiber Optic Temperature Sensor									
Language		E		English					
Power Supply		1		24VDC					
Communications			A		2x10Base-T/100Base-TX Ethernet port + 2xRS-485 port				
DO				A		3xDO			
Temperature Sensing					A		4 Channels for Standard 62.5/125µm Multi-mode Fiber for Temperature Sensing and Signal Transmission (Max. 10km)		
Temperature Measurement Range						A		-40 °C to 150 °C	
Mounting Method							A	Panel Cutout	
							B	Wall Mount	
PMC-3601F		-	E	1	A	A	A	A	PMC-3601F-E1AAAAA (Standard Model)

Note:
Please order the multi-mode optical fiber used as the temperature sensor for the temperature monitoring applications.

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Your Local Representative

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