

FIELD AND PANEL MOUNTED INDICATORS AND TRANSMITTERS



FM, CSA, ATEX, IECEx CERTIFIED



INTERNATIONAL METAL ENGINEERING

COMPANY PROFILE

Established in 1991 by a group of engineers with a wealth of experience in instrument and process control, IME has developed a complete line of supportive products for a wide range of industry needs, ranging from highly demanding off shore exploration to the basic needs of the food and beverage industries. Our products range from valves and manifolds available for OEM and private labeling agreements to junction boxes, custom designed enclosures as well as a full range of temperature measuring instruments and accessories. Our products are economically priced and designed to meet the needs of our OEM's worldwide as well as end users with no compromise in quality.



In addition to and ISO 9001:2008 Quality award, IME has both a QAN (Quality Assurance Notification) and QAR (Quality Assurance Report) which allows us to design and manufacture products that meet the stringent requirements of the ATEX and IECEx directives. Fully equipped with state of the art manufacturing facilities and backed by a team of qualified and dedicated design and production engineers, IME is positioned to meet the ever



SELECTION MATRIX FOR INDICATORS AND TRANSMITTERS

Field Mounted Indicator Series (Explosion Proof)

IME MODEL NO	DISPLAY	INPUT	POWER	POWER FOR TRANSMITTER	OUTPUT	ALARM	ADJUSTMENT	PAGE
8080PP	4 DIGIT LCD	4 - 20 mA	Loop	NO	NO	NO	MEMBRANE SWITCHES	1
8080MK	4 DIGIT LED	4 - 20 mA	Loop	NO	NO	NO	MEMBRANE SWITCHES	2
8080MN	4 DIGIT LED	4 - 20 mA	18 to 28 VDC	YES	NO	NO	MEMBRANE+IR SWITCHES	3
8080KN	4 DIGIT LCD	Type J/K TC or RTD Pt100	Battery	N/A	NO	NO	MEMBRANE SWITCHES	5

Field Mounted Temperature Transmitter Series (Explosion Proof)

IME MODEL NO	DISPLAY	INPUT	POWER	POWER FOR TRANSMITTER	OUTPUT	ALARM	ADJUSTMENT	PAGE
8080HN	NONE	SMART	7.5 to 45 VDC	N/A	4-20 mA	NO	PC OR HAND-HELD	7
8080HH	NONE	SMART	7.5 to 45 VDC	N/A	4-20 mA+HART®	NO	PC OR HAND-HELD	8
8080HT	5 DIGIT LCD	SMART	7.5 to 45 VDC	N/A	4-20 mA+HART®	NO	PC OR HAND-HELD	9
8080PN	4 DIGIT LED	Type J/K TC or RTD Pt100	18 to 28 VDC	N/A	4-20 mA	NO	MEMBRANE+IR SWITCHES	13

Field Mounted Indicator With Relays (Explosion Proof)

IME MODEL NO	DISPLAY	INPUT	POWER	POWER FOR TRANSMITTER	OUTPUT	ALARM	ADJUSTMENT	PAGE
8080RR	4 DIGIT LED	4 - 20 mA	18 to 28 VDC	NO	NO	YES	MEMBRANE+IR SWITCHES	4
8080PR	4 DIGIT LED	Type J/K TC or RTD Pt100	18 to 28 VDC	NO	NO	YES	MEMBRANE+IR SWITCHES	6
8080FR	4 DIGIT LED + 6 DIGIT LED	4 - 20 mA or Pulse	18 to 28 VDC	NO	4-20 mA	YES	MEMBRANE SWITCHES	17

Field Mounted Indicating Pressure Transmitter And Miscellaneous Indicators

IME MODEL NO	DISPLAY	INPUT	POWER	POWER FOR TRANSMITTER	OUTPUT	ALARM	ADJUSTMENT	PAGE
8080PA	4 DIGIT LED	Pressure	12 to 45 VDC	N/A	4-20 mA	NO	MEMBRANE SWITCHES	14
8080PG	4 DIGIT LCD	Various	9 to 45 VDC	N/A	4-20 mA+HART®	NO	PC OR HAND-HELD	11
8080TFM	4 DIGIT LED + 6 DIGIT LED	Pressure	18 to 28 VDC	NO	4-20 mA	YES	MEMBRANE SWITCHES	18

Panel Mounted Instruments

IME MODEL NO	DISPLAY	INPUT	POWER	POWER FOR TRANSMITTER	OUTPUT	ALARM	ADJUSTMENT	PAGE
9008PP	4 DIGIT LCD	4 - 20 mA	Loop	NO	NO	NO	MEMBRANE SWITCHES	24
9008MK	4 DIGIT LED	4 - 20 mA	Loop	NO	NO	NO	MEMBRANE SWITCHES	24
9008KN	4 DIGIT LCD	Type J/K TC or RTD Pt100	Battery	NO	NO	NO	MEMBRANE SWITCHES	24
9008FR	4 DIGIT LED + 8 DIGIT LED	4 - 20 mA or Pulse	DC or AC	YES	NO	YES	MEMBRANE+IR SWITCHES	24
9008GFD	4 DIGIT LED	0 - 5 A	DC or AC	NO	NO	YES	MEMBRANE SWITCHES	24

Indicator and Transmitter Assembly (Explosion Proof)

20

Bar Stock Threaded Thermowells

21

Flanged Thermowells

22

Mounting Brackets For Indicators and Transmitters

23

FIELD MOUNTED LOOP POWERED INDICATOR

8080PP

- 4 TO 20 mA INPUT, LOOP POWERED
- 4 DIGIT LCD DISPLAY IN ENGINEERING UNITS
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

IME Model 8080PP Loop Powered Digital Indicators allow the process variable from any 4~20 mA current source to be monitored. Since the unit derives its power from the loop, no additional power supply or wiring is needed. Because of its low voltage drop (5.5 Volts at 20mA), it can be incorporated into almost any 2 wire loop, where local indication of a process variable is needed.

Description

IME Model 8080PP Indicators are designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA 4X & IP68, and are also certified Explosion Proof by FM/CSA/ATEX/IECEX.






LCD Meter

The Model 8080PP has 4 digit display and can be configured to read from 999 to 9999 with a 4~20 mA input signal. The decimal point location and engineering units can be adjusted using membrane switches, eliminating all potentiometric adjustments.

Mounting

The Model 8080PP can be wall mounted or mounted on a 2" pipe. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Certification System

	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Functional Specifications

Indication Accuracy

0.1% of calibrated range ± 1 digit

Calibration

Via membrane switches on the front panel

Display Height

12.5mm (1/2") high

Stability Over Time

0.1% of calibrated range ± 1 digit over 6 months

Over Range Indication

Indication of "1" on display

Response Time

Typically 75ms

Failure Mode

Failure will not affect the loop integrity

Voltage Drop

5.5V at 20mA

Operating Temperature

-20°C to +50°C (Optional -40°C to +70°C)

Weight

0.9Kg (2 lbs) for Aluminum Unit and 1.4Kg (3 lbs) for SS316 Unit

Material of Construction

Enclosure epoxy coated Copper-Free Aluminum or SS316 as specified

O Rings

Buna N (Nitrile)

Optional Accessories

Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM)

Refer to Page 23 for detail

Ordering Information

See page 16 for complete ordering information.

FIELD MOUNTED LOOP POWERED INDICATOR

8080MK

- 4 TO 20 mA INPUT, LOOP POWERED
- 4 DIGIT LED DISPLAY IN ENGINEERING UNITS
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

IME Model 8080MK Loop Powered Digital Indicators allow the process variable from any 4~20 mA current source to be monitored. Since the unit derives its power from the loop, no additional power supply or wiring is needed. Because of its low voltage drop (3 Volts at 20mA), it can be incorporated into almost any 2 wire loop, where local indication of a process variable is needed, because the integral transmitter indicator is inaccessible to view or is at a different location.

Description

IME Model 8080MK Indicators are designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA 4X & IP68, and are also certified Explosion Proof by ATEX/IECEX.




LED Meter

The Model 8080MK has 4 digit display and can be configured to read from -999 to 9999 with a 4~20 mA input signal. The decimal point location and engineering units can be adjusted using membrane switches, eliminating all potentiometric adjustments.

Mounting

The Model 8080MK can be wall mounted or mounted on a 2" pipe. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Certification System

	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Functional Specifications

Indication Accuracy

0.1% of calibrated range ± 1 digit

Calibration

Via membrane switches on the front panel

Display Height

7.6mm (0.3") high

Stability Over Time

0.1% of calibrated range ± 1 digit over 6 months

Over Range Indication

Indication of "Err" on display

Response Time

Typically 20 ms

Failure Mode

Failure will not affect the loop integrity

Voltage Drop

3V at 20mA

Operating Temperature

-50°C to +75°C

Weight

0.9Kg (2 lbs) for Aluminum Unit and 1.4Kg (3 lbs) for SS316 Unit

Material of Construction

Enclosure epoxy coated Copper-Free Aluminum or SS316 as specified

O Rings

Buna N (Nitrile)

Optional Accessories

Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM)

Refer to Page 23 for detail

Ordering Information

See page 16 for complete ordering information.

FIELD MOUNTED PROCESS INDICATOR

8080MN

- 4 TO 20 mA INPUT
- 4 DIGIT LED DISPLAY IN ENGINEERING UNITS
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- AUX POWER SUPPLY FOR TRANSDUCER (24V DC)
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

IME Model 8080MN Digital Process Indicator allows the process variable from any transmitter to be monitored in the field. Since the unit can also provide 24V DC to the transmitter, the unit can be used to power any 2-wire transmitter in the field.

Description

IME Model 8080MN Indicators are designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA 4X & IP68, and are also certified Explosion Proof by FM/CSA/ATEX/IECEX.






LED Meter

The Model 8080MN has 4 digit display and can be configured to read from -999 to 9999 with a 4~20 mA input signal. The decimal point location, engineering units, alarm settings, etc can be adjusted using membrane key on the front panel or by using an IR Remote Controller.

Mounting

The Model 8080MN can be wall mounted or mounted on a 2" pipe. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Certification System

	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Functional Specifications

Indication Accuracy

0.1% of calibrated range ± 1 digit

Calibration

Via membrane switches on the front panel or IR switches using Remote Controller

Display Height

7.6mm (0.3") high

Stability Over Time

0.1% of calibrated range ± 1 digit over 6 months

Over Range Indication

Indication of "HIGH" on Display

Response Time

Typically 200 ms

Operating Temperature

-50°C to +75°C

Weight

0.9Kg (2 lbs) for Aluminum Unit and 1.4Kg (3 lbs) for SS316 Unit

Material of Construction

Enclosure epoxy coated Copper-Free Aluminum or SS316 as specified

O Rings

Buna N (Nitrile)

Optional Accessories

Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM)

Refer to Page 23 for detail

Ordering Information

See page 16 for complete ordering information.

FIELD MOUNTED PROCESS INDICATOR WITH DUAL RELAYS

8080RR

- 4 TO 20 mA INPUT
- 4 DIGIT LED DISPLAY IN ENGINEERING UNITS
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- TWO INDEPENDENT USER ASSIGNABLE ALARMS
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

IME Model 8080RR Digital Indicator allows the process variable from any transmitter to be monitored in engineering units and two corresponding alarms to be assigned. Both alarms can be assigned either high or low within the selected range.

Description

IME Model 8080RR Indicators are designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA 4X & IP68, and are also certified Explosion Proof by FM/CSA/ATEX/IECEX.

LED Meter

The Model 8080RR has 4 digit display and can be configured to read from -999 to 9999 with a 4~20 mA input signal. The decimal point location, engineering units, alarm settings, etc can be adjusted using membrane key on the front panel or by using an IR Remote Controller.

Mounting

The Model 8080RR can be wall mounted or mounted on a 2" pipe. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Certification System

	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Functional Specifications

Indication Accuracy

0.1% of calibrated range ± 1 digit

Set Point Adjustment

10~100% of full scale, user selectable

Reset

Automatically when the input falls below the alarm set point by approximately $\pm 0.5\%$ of full scale.

Alarm Set Point Accuracy

$\pm 0.5\%$ of full scale.

Alarm Status Indication

LED on front panel

Display Height

7.6mm (0.3") high

Alarm Output

2 sets SPDT, 1 form C, rated 10A @ 250V AC, 50/60Hz

Stability Over Time

0.1% of calibrated range ± 1 digit over 6 months

Over Range Indication

Flashing of display

Response Time

Typically 75ms

Supply Voltage

18~28V DC

Operating Temperature

-50°C to +70°C

Weight

0.9Kg (2 lbs) for Aluminum Unit and 1.4Kg (3 lbs) for SS316 Unit

Material of Construction

Enclosure epoxy coated Copper-Free Aluminum or SS316 as specified

O Rings

Buna N (Nitrile)

Optional Accessories

Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM)

Refer to Page 23 for detail

Ordering Information

See page 16 for complete ordering information.

- INPUT THERMOCOUPLE AND RTD
- 4 DIGIT LCD DISPLAY IN DEGREES C OR F
- RUGGED NEMA4X, IP68 ENCLOSURE
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- DESIGNED TO REPLACE BIMETALLIC SENSORS
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

Model 8080KN is a Battery Operated Digital Temperature Indicator which accepts an input from a standard Type J or K Thermocouple or RTD and provides local indication of temperature in degrees C or F. Designed specifically to replace Bimetallic Sensors, 8080KN becomes a universal instrument since only one instrument will indicate the entire useful range of the thermocouple or RTD (-100°C to +1400°C). This eliminates having several bimetallic sensors where the dial range has to be predetermined. Operating costs are also drastically reduced since the temperature sensor can be easily replaced in case of failure, unlike a bimetallic sensor where the entire instrument has to be discarded. Furthermore thermocouples and RTDs are a lot more reliable, accurate and stable when compared to the archaic bimetallic sensor.






Description

Model 8080KN is designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments a SS316 housing is optionally available. The housing meets the requirements of NEMA 4X & IP68, and are also certified Explosion Proof by FM/CSA/ATEX/IECEX.

Mounting

The Model 8080KN can be either remotely mounted or mounted directly on the thermowell/nipple assembly. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Certification System

	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Functional Specifications

Sensor

Thermocouple Type J / K or RTD Pt100

Indication Accuracy

±1 °C / °F

Display Height

12.5mm (½") high

Display Units

°C or °F, switch selectable

Battery Life

Approx. 24 Months

Calibration

Single point calibration for enhanced accuracy

Operating Temperature

-20°C to 70°C

Weight

0.9kg (2 lbs) for Aluminum Unit and 1.4kg (3 lbs) for SS316 unit not including sensor

O Rings

Buna N (Nitrile)

Optional Accessories

Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM)
Refer to Page 23 for detail.

Ordering Information

See page 16 for complete ordering information.

TEMPERATURE INDICATING SWITCH WITH DUAL RELAYS

8080PR

- INPUT THERMOCOUPLE AND RTD
- 4 DIGIT LED DISPLAY IN DEGREES C OR F
- RUGGED NEMA4X, IP68 ENCLOSURE
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

Model 8080PR allows two independent alarms to be assigned over the temperature range of the sensor. The unit will accept an input from a Pt100 RTD or Type J or K thermocouple and provide an indication on a bright 4 digit LED. The unit serves a dual purpose in addition to local indication of temperature, which is switch selectable to read °C or °F, it also serves as an accurate and repeatable temperature switch.

Description

Model 8080PR Temperature Indicators are designed for using in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing. For more aggressive environments, a SS316 housing is also available. Housings meet the requirements of NEMA 4X & IP68, and are also certified Explosion Proof by FM/CSA/ATEX/IECEX.






LED Meter

The Model 8080PR has a 4 digit LED display and may be configured to read -999 to 9999. The decimal point location, choice of °C or °F, alarm settings etc can be adjusted via the Front Panel or Remote Controller. This feature allows the unit to be re-ranged in the field through the safety glass window, without even opening the cover of the instrument.

Mounting

The Model 8080PR can be either remotely mounted or mounted directly on the thermowell/nipple assembly. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Certification System

	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Functional Specifications

Indication Accuracy

0.1% of Calibrated range ±1 digit

Set Point Adjustment

10 to 100% of full scale, user selectable

Reset

Automatically when the input falls below the alarm set point by approximately ±0.5% of full scale.

Alarm Set Point Accuracy

±0.5% of full scale.

Alarm Status Indication

LED on front panel

Display Height

7.6mm (0.3") high

Alarm Output

2 sets SPDT, 1 from C, rated 10A @ 250V AC, 50/60Hz

Stability Over Time

0.1% of calibrated range ±1 digit over 6 months

Over Range Indication

Flashing of display

Response Time

Typically 75ms

Supply Voltage

18 to 28V DC

Operating Temperature

-50°C to +70°C

Weight

0.9Kg (2 lbs) for Aluminum Unit and 1.4Kg (3 lbs) for SS316 unit

O Rings

Buna N (Nitrile)

Optional Accessories

Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM)
Refer to Page 23 for detail.

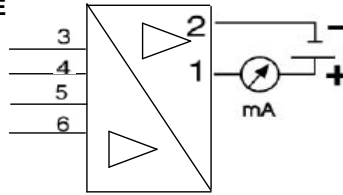
Ordering Information

See page 16 for complete ordering information.

HEAD MOUNTED TEMPERATURE TRANSMITTER

8070HN

- 2 WIRE, 4 TO 20mA ANALOG OUTPUT
- HIGH ACCURACY IN TOTAL AMBIENT TEMPERATURE RANGE
- AN INTERNAL TEMPERATURE SENSOR FOR ACTIVE TEMPERATURE COMPENSATION (FOR T/C)
- 3 YEAR WARRANTY



INPUT	TYPE
Resistance Thermometer (RTD)	Pt 100, Cu 50, Cu 100
Resistance Transmitter	0 to 400 Ω
Voltage Transmitter (mV)	-10 to 75mV
Thermocouple Types	B,E,J,K,N,R,S and T

OUTPUT	
Output Signal	4 to 20 mA
Under Range	Linear Drop to 3.8mA
Over Range	Linear Rise to 20.8mA
Sensor Breakage	< 3.8mA
Load	Max. $(V_{\text{power supply}} - 7.5 \text{ V}) / 0.0208\text{A}$

POWER SUPPLY	
Supply Voltage	7.5 to 45 VDC, Polarity Protected

SPECIFICATION	
Response time	1s
Reference Operation Conditions	Calibration temperature: 23°C (75°F)
Long Term Stability	≤0.05% / Year
Influence of ambient Temperature	Negligible
Load Influence	Negligible
Power Supply Influence	Negligible
Ambient Temperature Limits	-40°C to 85°C
Ingress Protection	IP 68 when installed in a 1080 or 8080 Enclosure
Dimensions	Dia. 44mm x 22.5 mm
Mounting	Fits in any standard thermocouple head

Ordering Information

Model	Description
8070HN	Head Mounted Temperature Transmitter

Optional

Explosion Proof Thermocouple Heads that can be used to mount the 8070HN Temperature Transmitter inside is optionally available. The electronics can be enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housing meets the requirements of NEMA 4X / IP68, and are certified Explosion Proof by ATEX/IECEX.




TEMPERATURE TRANSMITTER ENCLOSURE

8080HN

IME Model 8080HN is an Explosion Proof Temperature Transmitter Enclosure with IME Model 8070HN Temperature Transmitter Unit inside. The housing comes with solid cover and it can be copper-free epoxy coated Aluminum or SS316 for more aggressive environments. The housing meets the requirements of NEMA 4X / IP68. The whole Assembly is certified Explosion Proof by ATEX / IECEx. Refer to Page 19 for complete ordering information.



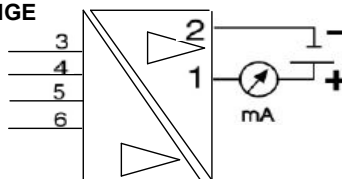
Certification System

	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C			Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C
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HEAD MOUNTED TEMPERATURE TRANSMITTER WITH HART®

8070HH

- UNIVERSAL SETTINGS WITH HART® - PROTOCOL FOR VARIOUS INPUT SIGNALS
- 2 WIRE, 4 TO 20mA ANALOG OUTPUT + HART®
- HIGH ACCURACY OVER TOTAL AMBIENT TEMPERATURE RANGE
- GALVANIC ISOLATION
- AN INTERNAL TEMPERATURE SENSOR FOR ACTIVE TEMPERATURE COMPENSATION (FOR T/C)
- WIDE VOLTAGE SUPPLY RANGE
- 3 YEAR WARRANTY



INPUT	TYPE
Resistance Thermometer (RTD)	Pt100, Pt500, Pt1000, Cu50, Cu100, Ni100, Ni500, Ni1000
Resistance Transmitter Range/ Min Range	0 to 400Ω / 10Ω, 0 to 2000Ω / 20Ω, 0 to 1000Ω / 100Ω
Thermocouple Types	B,E,J,K,N,R,S and T
Voltage Transmitters (mV) / Min Range	-10 to 75mV / 5mV, -100 to 100mV / 5mV -100 to 500mV / 6mV, -100 to 2000mV / 20mV

OUTPUT	
Output Signal	4 to 20 mA + Hart®
Under Range	Linear Drop to 3.8mA
Over Range	Linear Rise to 20.8mA
Load	Max. (Vpower supply - 7.5 V) / 0.0208A
Galvanic Isolation	U=2KV AC (input/ output)

POWER SUPPLY	
Supply Voltage	7.5 to 45 VDC/ Polarity Protected

SPECIFICATION	
Programmable	Easy programming with USB
Response Time	1s
Reference Operating Conditions	Calibration Temperature: 23°C ± 5K
Long Term Stability	≤ 0.05% / year
Switch On Delay	≤ 5s
Self Stability Configuration	0 to 2%
Filter Configuration	0 to 160 μA
Input Current Required	≤ 3.8mA
Current Limit	≤ 20.8mA
Ambient Temperature Limits	-40 to 85 °C
Degree of Protection	IP 68 when installed in a 1080 or 8080 Enclosure
Shock and Vibration Resistance	As per IEC 60 068-26
Dimensions	Dia. 44mm x 22.5 mm
Mounting	Fits in any standard thermocouple head

Ordering Information

Model	Description
8070HH	Head Mounted Temperature Transmitter With HART®

Optional

Explosion Proof Thermocouple Heads that can be used to mount the 8070HH Temperature Transmitter inside is optionally available. The electronics can be enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housing meets the requirements of NEMA 4X / IP68, and are certified Explosion Proof by ATEX/IECEX.

TEMPERATURE TRANSMITTER ENCLOSURE WITH HART®

8080HH

IME Model 8080HH is an Explosion Proof Temperature Transmitter Enclosure with IME Model 8070HH Temperature Transmitter Unit inside. The housing comes with solid cover and it can be copper-free epoxy coated Aluminum or SS316 for more aggressive environments. The housing meets the requirements of NEMA 4X / IP68. The whole Assembly is certified Explosion Proof by ATEX / IECEx.



Refer to Page 19 for complete ordering information.

Certification System

	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
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	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C
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- UNIVERSAL SETTINGS WITH HART PROTOCOL FOR VARIOUS INPUT SIGNALS
- 2 WIRE TECHNOLOGY, 4 TO 20mA ANALOG OUTPUT
- HIGH ACCURACY IN TOTAL AMBIENT TEMPERATURE RANGE
- GALVANIC ISOLATION
- AN INTERNAL TEMPERATURE SENSOR FOR ACTIVE TEMPERATURE COMPENSATION
- WIDE VOLTAGE SUPPLY
- CUSTOMER SPECIFIC MEASUREMENT RANGE SETTINGS
- SIMPLE AND USER FRIENDLY SOFTWARE
- MULTIPLE BACKLIGHT ROTATABLE LCD DISPLAY
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

Model 8080HT is a digital, PC/Hand-Held programmable, isolated 2-wire transmitter with HART® protocol. The unit converts 8 types of thermocouples; 8 types of RTDs, configured as 2, 3 and 4 wires; potentiometer, resistor and millivolt inputs into process current loop.

Description

Model 8080HT Universal Input Transmitters are designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA 4X / IP68, and are certified Explosion Proof by ATEX/IECEX.

Exceptional digital accuracy of typical $\pm 0.1^\circ\text{C}$ is provided for all the sensors regardless of the calibrated span. Extremely accurate cold-junction temperature measurement provides precise compensation throughout the entire ambient range. The unit also accurately measures and compensates the RTD sensor leads in the 3-wire connection.

The transmitter is fully configurable by connecting to a PC or a Hand-Held programmer. The configuration parameters are stored in a non volatile memory. Detection of sensor breakage or disconnection of input leads, forces the output to a pre-defined up/down scale value. The unit continuously monitors the sensor and automatically returns to normal operation mode when the sensor is recovered.

In applications where no local indication is required, the tempered glass cover is replaced by a solid cover and no LCD indicator is provided.




Mounting

The Model 8080HT can be either remotely mounted or mounted directly on the thermowell/nipple assembly. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Ordering Information

See Page 19 for complete ordering information.

Certification System

	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

INDICATING TEMPERATURE TRANSMITTER WITH HART®

8080HT

Input

	Type	Measurement Ranges	Min. meas. Ranges	Maximum Measured Error
Resistance Thermocouple (RTD)	Pt100	-200°C to 850°C (-328°F to 1562°F)	10K	0.2K or 0.08%
	Pt500	-200°C to 850°C (-328°F to 1562°F)	10K	0.5K or 0.20%
	Pt1000	-200°C to 850°C (-328°F to 1562°F)	10K	0.3K or 0.12%
	Cu50	-50°C to 150°C (-58°F to 302°F)	10K	0.2K or 0.08%
	Cu100	-50°C to 150°C (-58°F to 302°F)	10K	0.3K or 0.12%
	Ni100	-60°C to 180°C (-76°F to 356°F)	10K	0.2K or 0.08%
	Ni500	-60°C to 180°C (-76°F to 356°F)	10K	0.5K or 0.20%
	Ni1000	-60°C to 180°C (-76°F to 356°F)	10K	0.3K or 0.12%
Resistance Transmitter	Resistance (Ω)	0 to 400 Ω	10 Ω	± 0.1Ω or 0.08%
		0 to 2000 Ω	20 Ω	± 1.5Ω or 0.12%
		0 to 10000 Ω	100 Ω	± 7.5Ω or 0.20%
Thermocouple (TC)	B (PtRh30-PtRh6)	0 to 1820°C (32 to 3308°F)	500K	typ. 2.0K or 0.08%
	E (NiCr-CuNi)	-270 to 1000°C (-454 to 1832°F)	50K	typ. 0.5K or 0.08%
	J (Fe-CuNi)	-210 to 1200°C (-346 to 2192°F)	50K	typ. 0.5K or 0.08%
	K (NiCr-Ni)	-270 to 1372°C (-454 to 2501°F)	50K	typ. 0.5K or 0.08%
	N (NiCrSi-NiSi)	-270 to 1300°C (-454 to 2372°F)	50K	typ. 1.0K or 0.08%
	R (PtRh13-Pt)	-50 to 1768°C (-58 to 3214.4°F)	500K	typ. 2.0K or 0.08%
	S (PtRh10-Pt)	-50 to 1768°C (-58 to 3214.4°F)	500K	typ. 2.0K or 0.08%
	T (Cu-CuNi)	-270 to 400°C (-454 to 752°F)	50K	typ. 0.5K or 0.08%
Voltage Transmitters (mV)	Millivolt transmitter (mV)	-10 to 75 mV	5 mV	± 20 μV or 0.08%
		-100 to 100 mV	5 mV	± 20 μV or 0.08%
		-100 to 500 mV	6 mV	± 30 μV or 0.08%
		-100 to 2000 mV	20 mV	± 50 μV or 0.08%

Output

Output Signal	4 to 20 mA + Hart®	
Signal On Alarm	Underranging	Linear drop to 3.8 mA
	OVERRANGING	Linear rise to 20.8 mA
	Sensor break; sensor open-circuit	<3.8 mA
Load	Max. (V _{power supply} - 7.5 V) / 0.0208A (without display)	
	Max. (V _{power supply} - 10.5 V) / 0.0208A (with display)	
Linearization/Transmission Behavior	Temperature linear, resistance linear, voltage linear	
Galvanic Isolation	U = 2 KV AC (input/output)	

Power Supply

Supply Voltage (polarity protected)	U _b = 10.5 to 45 VDC (with display)
-------------------------------------	------------------------------------------------

Performance Characteristic

Response Time	1s
Reference Operating Conditions	Calibration Temperature : 23°C (73.4°F) ± 5K
Long Term Stability	≤ 0.05% / year
Switch On Delay	≤ 5s
Self Stability Configuration	0 to 2%
Filter Configuration	0 to 160 μA
Resolution	0.3 μA

Environment Condition

Ambient Temperature Limits	-40 to 85°C (-40°F to 195°F) Without display
	-20 to 70°C (-4°F to 158°F) With display
Storage Temperature	-40 to 100°C (-40°F to 212°F)
Condensation	100%
Electromagnetic Compatibility (EMC)	Interference immunity and interference emission according to GB/T17626.2-1998), compliance with IEC 61000-4-3:1995

- UNIVERSAL SETTINGS WITH HART PROTOCOL FOR VARIOUS INPUT SIGNALS
- 2 WIRE TECHNOLOGY, 4 TO 20mA + HART OUTPUT
- WIDE VOLTAGE SUPPLY
- CUSTOMER SPECIFIC MEASUREMENT RANGE SETTINGS
- SIMPLE AND USER FRIENDLY SOFTWARE
- MULTIPLE BACKLIGHT ROTATABLE LCD DISPLAY
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

Model 8080PG is a digital, PC/Hand-Held programmable, isolated 2-wire transmitter with HART® protocol. The unit is able to convert a variety of sensor inputs into a 4-20 mA + HART® output.




Description

Model 8080PG Universal Input Transmitters are designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA 4X / IP68, and are certified Explosion Proof by ATEX/IECEX.

The transmitter is fully configurable by connecting to a PC or a Hand-Held programmer. The configuration parameters are stored in a non volatile memory. Detection of sensor breakage or disconnection of input leads, forces the output to a pre-defined up/down scale value. The unit continuously monitors the sensor and automatically returns to normal operation mode when the sensor is recovered.

In applications where no local indication is required, the tempered glass cover is replaced by a solid cover and no LCD indicator is provided.

Certification System

	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Mounting

The Model 8080PG can be either remotely mounted or mounted directly on the sensor. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Functional Specifications

Application

Pressure Sensors / Transducers, Differential Sensors / Transducers, Load Cells, Wheatstone Bridge, Magnetic Field Sensors, Strain Gauge, Resistor of 2/3/4 Wires

Weight

0.9Kg (2 lbs) for Aluminum Unit and 1.4Kg (3 lbs) for SS316 unit

Material of Construction

Enclosure epoxy coated Copper-Free Aluminum or SS316 as specified

O Rings

Buna N (Nitrile)

Optional Accessories

Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM)

Refer to Page 23 for detail.

Ordering Information

See page 19 for complete ordering information.

INDICATING TRANSMITTER WITH HART® (FOR OEM APPLICATION)

8080PG

Input

Type	Description
2-wire Sensor	Such as: 2 wire resistor, magnetic float ball magnetic rotating pole, etc.
3-wire Sensor	Such as: 3 wire resistor, Endress+Hauser Ceracore II, Endress+Hauser Ceracore M, etc.
4-wire Sensor	Such as: 4 wire resistor, all bridge sensor, etc.
mV	Such as: External Voltage, etc.
Sensor Supply	Constant Voltage: 5 V, constant current: 0.2 to 2.0 mA

Output

2-wire System	4 to 20 mA with superimposed communication signal for HART Protocol
Underranging	Linear drop to 3.6 mA
OVERRANGING	Linear rise to 22.8 mA
Load	Max. $(V_{\text{power supply}} - 12 \text{ V}) / 0.02\text{A}$ Max. $(V_{\text{power supply}} - 15 \text{ V}) / 0.02\text{A}$ (with backlight)

Power Supply

Supply Voltage	9 to 45 VDC
----------------	-------------

Performance Characteristic

Accuracy	10:1	<0.05%
	20:1	<0.075%
	40:1	<0.1%
	100:1	<0.25%
Long Term Stability	≤ 0.05% / year	
Switch On Delay	≤ 5s	
Response Time	≤200ms (Setting damping time 0)	
Load Influence	Negligible	
Power Supply Influence	Negligible	
Self Stability Configuration	0 to 2%	
Filter Configuration	0 to 160 μA	
Resolution	0.3 μA	

Environment Condition

Ambient and Operation	-20°C to 70°C (-4°F to 158°F)
Storage	-40°C to 85°C (-40°F to 185°F)

- INPUT: RTD PT100 OR THERMOCOUPLE TYPE J / K
- OUTPUT 4~20mA, 2 WIRES
- 4 DIGIT LED DISPLAY IN DEGREES C OR F
- TEMPERATURE LINEARIZED
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

Model 8080PN is a two wire indicating transmitter which converts input from a Type J/K Thermocouple or Pt100 sensor into a load independent 4~20mA process signal. A 4 digit bright red LED allows for local indication of Temperature, which is switch selectable to read °C or °F.

Description

Model 8080PN Transmitters are designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing and for more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA4X, and are also certified Explosion Proof by FM/CSA/ATEX/IECEX.






LED Meter

Model 8080PN has 4 digit bright red LED and may be configured to read temperature in either degrees C or F. The zero and span setting for 4 to 20mA signal as well as the units of display can be set using the membrane switches on the front panel, eliminating potentiometric adjustments.

Mounting

The Model 8080PN can be either remotely mounted or mounted directly on the thermowell/nipple assembly. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Certification System

	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Functional Specifications

Sensor

Type J/K Thermocouple or Pt100 RTD

Indication Accuracy

0.1% of Calibrated range \pm 1 digit

Lead Compensation Error

< \pm 0.05/10 Ω lead resistance

Stability Over Time

0.1% of calibrated range \pm 1 digit over 6 months

Temperature Stability

\pm 0.01% per Degree C

Adjustable Span

Over the entire range of sensor (Minimum Span=20°C) (about 30°F)

Burnout Protection

Upscale

Supply Voltage

24 V DC

Supply and Load Effect

<0.03% of span for full change

Operating Temperature

-50°C to +75°C

Weight

0.9Kg (2 lbs) for Aluminum Unit and 1.4Kg (3 lbs) for SS316 unit

O Rings

Buna N (Nitrile)

Optional Accessories

Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM)

Refer to Page 23 for detail.

Ordering Information

See Page 19 for complete ordering information.

FIELD MOUNTED 2 WIRE PRESSURE TRANSMITTER

8080PA

- HIGH ACCURACY
- 4 : 1 RANGEABILITY
- PRESSURE RANGE OF 0.025 BAR (10" H2O) TO 700 BAR (10,000 PSIG)
- 4 DIGIT LED DISPLAY IN ENGINEERING UNITS
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- EXPLOSION PROOF CERTIFIED
- REMOTE MOUNT SENSOR FROM ENCLOSURE
- 3 YEAR WARRANTY



Introduction

IME Model 8080PA is a field mounted, 2 wire transmitter with a 4 digit LED display and a 4 : 1 adjustability. The 8080PA is designed to cover a wide range of level and pressure measurement and can be adjusted as low as 0.025 Bar (10" H2O) and up to a maximum of 700 Bar (10,000 PSIG).

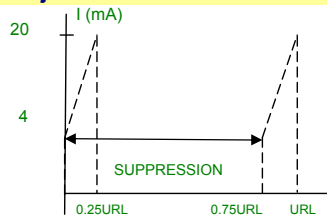
Description

IME Model 8080PA Transmitter is designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The only material that is exposed to the process liquid is SS316. The Electronics are enclosed in a low copper epoxy coated Aluminum housing. For more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA4X, and are also certified Explosion Proof by FM. The output current is linearised and can be set to 4-20mA/ 20-4mA or any range within these limit. The unit updates 3 times per second for display and 4 times per second for the output. The sensor can be remotely mounted up to 10 meters(30 feet) from the Enclosure.

Mounting

The Model 8080PA can be either remotely mounted or mounted directly on the thermowell/nipple assembly. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Zero Adjustment Limits

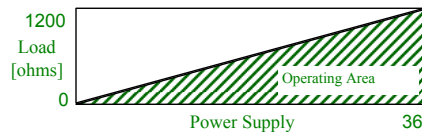


Calibrated Span shall not be less than 0.25URL and shall not exceed URL.
 Low Range Value shall not be below -URL
 Upper Range Value shall not be greater than URL

Certification System

	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Load Limitation



According to: $R_{max} (\Omega) = (V_{supply} - 12) / 0.02$

Functional Specifications

Process Fluid	Liquid, Gas and Vapor
Output Signal	4~20 mA DC
Power Supply	12 to 45 VDC
Zero, Span Adjustment & Configuration	Local Adjustment using Membrane Switches
Turn On Time	<2s
Temperature Limits	Process: -50°C to +125°C Ambient: -50°C to +75°C
Indication Accuracy	± 0.25% Full Scale, includes effects of non-linearity, hysteresis and repeatability
Stability	± 0.2% Full Scale Output for 12 months
Temperature Effect	± 0.02% Full Scale Output per 20° C
Material of Construction	Enclosure epoxy coated Copper-Free Aluminum or SS316 as specified
O Rings	Buna N (Nitrile)
Optional Accessories	Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM) Refer to Page 23 for detail.

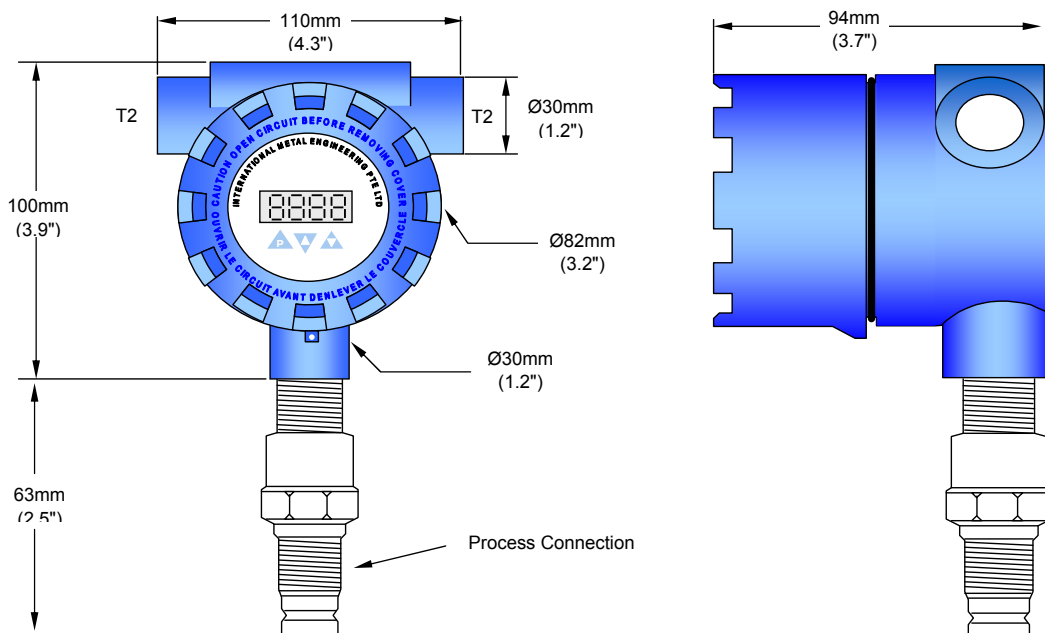
Ordering Information

See page 15 for complete ordering information.

Ordering Information For Temperature Transmitter

Model	Description																												
8080PA	Field Mounted 2 Wire Pressure Transmitter																												
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8080PA	A	04	R3	E1	PM	02	← Typical Model Number
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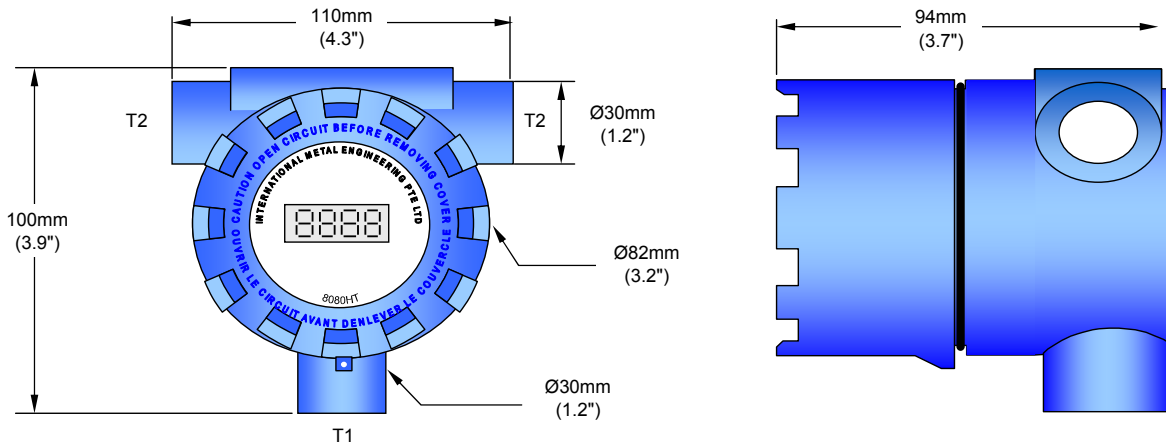


ORDERING INFORMATION FOR TEMPERATURE INDICATORS

Model	Description
8080PP	Field Mounted Loop Powered Indicator
8080MK	Field Mounted Loop Powered Indicator (See Note 2)
8080MN	Field Mounted Process Indicator
8080RR	Field Mounted Process Indicator With Dual Relays
8080KN	Battery Powered Digital Temperature Indicator
8080PR	Temperature Indicating Switch With Dual Relays
Code Options, Housing	
A	Die cast Aluminum, Epoxy Coated
T	SS316, Electro Polished
Code Instrument Connection (T1) Conduit Size (T2)	
01	M16 x 2P (See note 1) ¾" NPT
02	M16 x 2P (See note 1) ½" NPT
03	M16 x 2P (See note 1) M20 x 1.5P
04	½" NPT ¾" NPT
05	½" NPT ½" NPT
06	½" NPT M20 x 1.5P
07	¾" NPT ¾" NPT
08	¾" NPT ½" NPT
09	¾" NPT M20 x 1.5P
10	½" BSP ¾" NPT
11	½" BSP ½" NPT
12	½" BSP M20 x 1.5P
13	¾" NPT None
14	M20 x 1.5P None
16	½" BSP None
17	½" NPT None
Code Certification (See Note 2)	
NN	None
E1	FM / CSA / ATEX / IECEx Explosion Proof Certified, NEMA 4X, IP68, T6
Code Accessories (See Page 23)	
RC	Model 175RC Mounting Bracket
PM	Model 175PM Mounting Bracket
NR	Model 175NR Mounting Bracket
MM	Model 175MM Mounting Bracket
Code 2 Inch "U" Bolt with Nuts and Washers	
00	None
01	Model 17508, 1 Set (For Model 175RC)
02	Model 17508, 2 Sets (For Model 175PM & 175NR)
8080PR	A 02 E1 PM 02 ← Typical Model Number

Note:

- 1 Ports with M16 x 2P thread are not through holes, they are for Mounting only.
- 2 8080MK is certified ATEX and IECEx only.



FLOW INDICATOR WITH DUAL RELAYS

8080FR

- INPUT 4 TO 20 mA DC OR PULSE
- DISPLAYS RATE AND INTEGRATED TOTAL
- 2 ALARMS ASSIGNABLE TO FLOW RATE OR TOTALIZED FLOW
- OUTPUT 4 TO 20 mA
- CHOICE OF COPPER-FREE ALUMINUM OR SS316 ENCLOSURE
- EXPLOSION PROOF CERTIFIED
- 3 YEAR WARRANTY



Introduction

IME Model 8080FR is a Digital flow indicator that accepts a 4 to 20 mA signal or pulse from a flow meter and displays the flow rate and the totalized flow. Two independent alarms can be assigned to either the flow rate or the totalized flow, making the unit ideal for batch control. In addition to that the unit also provides 4 to 20 mA output.

Description

IME Model 8080FR Flow Indicator/Totalizer is designed for use in process industries where vibration, inclement weather and corrosive atmospheres prevail. The electronics are enclosed in a copper-free epoxy coated Aluminum housing, for more aggressive environments, a SS316 housing is optionally available. The housings meet the requirements of NEMA 4X & IP68, and are also certified Explosion Proof by FM/CSA/ATEX/IECEX.






LED Meter

The flow rate and the totalized flow are scalable from the front panel and displays are updated in less than one second. All parameters can be assigned from the front panel utilizing membrane keys.

Mounting

The Model 8080FR can be wall mounted or mounted on a 2" pipe. For mounting the unit on a wall or 2" pipe, a wide choice of stainless steel mounting brackets are also available. (See detailed information of mounting bracket on page 23)

Certification System

	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	CLASS I, DIV I GROUPS B, C AND D CLASS II/III, DIV I GROUPS E, F AND G NEMA 4X, T6	
	II 2G D Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP68 Ta = -40°C to +60°C	

Functional Specifications

Indication Accuracy

0.1% of Calibrated range ± 1 digit

Display Height for Flow Rate

7.6mm (0.3"), 4 Digit LED

Display Height for Totalized Flow

7.6mm (0.3"), 6 Digit LED

Stability Over Time

0.1% of Calibrated Range ± 1 digit over 6 months

Features

2 sets SPDT, 1 form C rated 10A @250V AC, 50/60Hz

Set Point Adjustment

10 to 100% of full scale, user selectable

Reset

Automatically when the input falls below the alarm set point by approx. 0.5% of full scale.

Power Supply

18~28V DC

Operating Temperature

-50 °C to 75 °C

Weight

0.9Kg (2 lbs) for Aluminum Unit and 1.4Kg (3 lbs) for SS316 unit

Material of Construction

Enclosure epoxy coated Copper-Free Aluminum or SS316 as specified

O Rings

Buna N (Nitrile)

Optional Accessories

Mounting Brackets (Model 175PM, 175RC, 175NR, 175MM)
Refer to Page 23 for detail.

Ordering Information

See page 19 for complete ordering information.

TURBINE FLOW METER WITH 8080FR FLOW TRANSMITTER

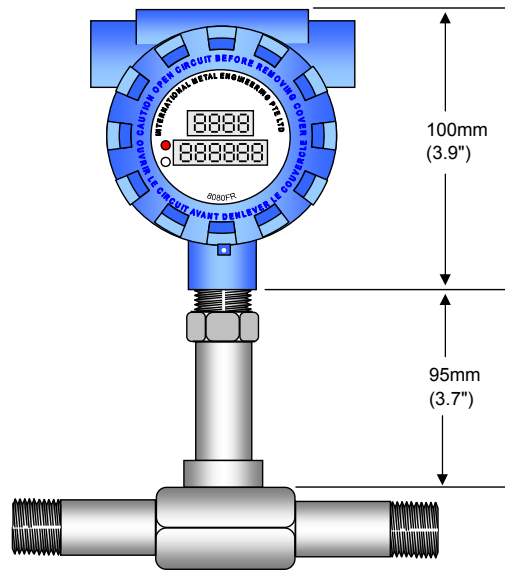
8080TFM

- USEFUL FOR CLEAR LIQUIDS AND GASES
- SYSTEM ACCURACY OF ±1% OR BETTER
- DISPLAYS RATE AND TOTAL SIMULTANEOUSLY
- 2 ALARMS ASSIGNABLE TO FLOW RATE OR TOTALIZED FLOW
- OUTPUT 4 TO 20 mA
- 3 YEAR WARRANTY

Introduction

IME Turbine Flow Meter are useful for liquids & gases in general industrial application. They provide excellent performance with quality & reliability. Suitable for as hygienic application. The flowing media engages a vaned rotor causing it to rotate at an angular velocity proportional to flow rate. The pick-up coil senses the spinning motion of the rotor inside the pipe and converts it into a pulsating electrical signal. Summation of the pulsating electrical signal is directly related to the total flow. The frequency is linearly proportional to flow rate which is converted to a 4 to 20 mA signal.

IME Model 8080FR accepts the pulsating electrical signal from the Turbine Flow Meter and displays the flow rate and the totalized flow. Two independent alarms (SPDT, 10 A) can be assigned to either the flow rate or the totalized flow, making the unit ideal for batch control.



Functional Specifications

Fluid

Clear Liquids and Gases

Density / Sp. Gravity

Up to 2.95

Pressure

Up to 40 Kg/cm²

Measuring Range

2.2 to 800 M³ / hr of Water / Clear Liquid

0.1 to 300 Nm³ / hr of Air / Gas at NTP

Viscosity

Up to 20 cps

Temperature of Fluid

Up to 250°C

Line Size

15 NB to 450 NB, Flange Sizes up to 8"

Accuracy

±1% of FSD & ±0.5% on request

Ordering Information

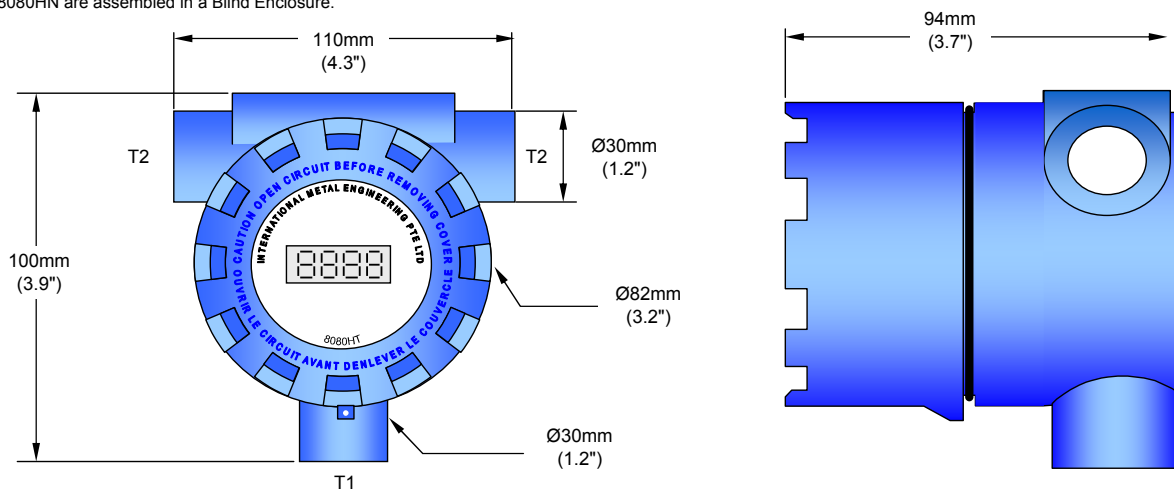
Model	Description																												
8080TFM	Turbine Flow Meter With 8080FR Flow Transmitter																												
	<table border="1"> <thead> <tr> <th>Code</th> <th>Options, Transmitter Housing</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Die cast Aluminum, Epoxy Coated</td> </tr> <tr> <td>T</td> <td>SS316, Electro Polished</td> </tr> <tr> <th>Code</th> <th>Transmitter, Conduit Entry</th> </tr> <tr> <td>04</td> <td>3/4" NPT</td> </tr> <tr> <td>05</td> <td>1/2" NPT</td> </tr> <tr> <td>06</td> <td>M20 x 1.5 P</td> </tr> <tr> <th>Code</th> <th>Line Size</th> </tr> <tr> <td>NB000</td> <td>Specify Flow Meter pipe size in mm</td> </tr> <tr> <th>Code</th> <th>Connection Type</th> </tr> <tr> <td>01</td> <td>BSP, Male</td> </tr> <tr> <td>02</td> <td>BSP, Female</td> </tr> <tr> <td>03</td> <td>NPT, Male</td> </tr> <tr> <td>04</td> <td>NPT, Female</td> </tr> </tbody> </table>	Code	Options, Transmitter Housing	A	Die cast Aluminum, Epoxy Coated	T	SS316, Electro Polished	Code	Transmitter, Conduit Entry	04	3/4" NPT	05	1/2" NPT	06	M20 x 1.5 P	Code	Line Size	NB000	Specify Flow Meter pipe size in mm	Code	Connection Type	01	BSP, Male	02	BSP, Female	03	NPT, Male	04	NPT, Female
Code	Options, Transmitter Housing																												
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T	SS316, Electro Polished																												
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Code	Connection Type																												
01	BSP, Male																												
02	BSP, Female																												
03	NPT, Male																												
04	NPT, Female																												
8080TFM	A 05 NB045 03 ← Typical Model Number																												

ORDERING INFORMATION FOR TEMPERATURE TRANSMITTERS AND FLOW INDICATOR

Model	Description
8080PN	Field Mounted Indicating Temperature Transmitter
8080HH	Temperature Transmitter Enclosure With HART® (See Note 2 & 3)
8080HN	Temperature Transmitter Enclosure (See Note 2 & 3)
8080HT	Indicating Temperature Transmitter with HART® (See Note 2)
8080PG	Indicating Transmitter with HART® (For OEM Application) (See Note 2)
8080FR	Flow Indicator With Dual Relays
	Code Options, Housing
A	Die cast Aluminum, Epoxy Coated
T	SS316, Electro Polished
	Code Instrument Connection (T1) Conduit Size (T2)
01	M16 x 2P (See note 1) ¼" NPT
02	M16 x 2P (See note 1) ½" NPT
03	M16 x 2P (See note 1) M20 x 1.5P
04	½" NPT ¼" NPT
05	½" NPT ½" NPT
06	½" NPT M20 x 1.5P
07	¾" NPT ¾" NPT
08	¾" NPT ½" NPT
09	¾" NPT M20 x 1.5P
10	½" BSP ¾" NPT
11	½" BSP ½" NPT
12	½" BSP M20 x 1.5P
13	¾" NPT None
14	M20 x 1.5P None
16	½" BSP None
17	½" NPT None
	Code Certification (See Note 2)
NN	None
E1	FM / CSA / ATEX / IECEx Explosion Proof Certified, NEMA 4X, IP68, T6
	Code Accessories (See Page 23)
RC	Model 175RC Mounting Bracket
PM	Model 175PM Mounting Bracket
NR	Model 175NR Mounting Bracket
MM	Model 175MM Mounting Bracket
	Code 2 Inch "U" Bolt with Nuts and Washers
00	None
01	Model 17508, 1 Set (For Model 175RC)
02	Model 17508, 2 Sets (For Model 175PM & 175NR)
8080HT	A 02 E1 PM 02 ← Typical Model Number

Note:

- 1 Ports with M16 x 2P thread are not through holes, they are for Mounting only.
- 2 8080HH, 8080HN, 8080HT and 8080PG are certified ATEX and IECEx only.
- 3 8080HH and 8080HN are assembled in a Blind Enclosure.



INDICATOR AND TRANSMITTER ASSEMBLY (EXPLOSION PROOF)

Ordering Information

Model	Description
97SA	Single Element, Aluminum Instrument Enclosure
97ST	Single Element, SS316 Instrument Enclosure
97DA	Dual Element, Aluminum Instrument Enclosure
97DT	Dual Element, SS316 Instrument Enclosure

Code	Description
04	N=4"(100mm)Nipple Union Nipple Assembly
05	N=5"(125mm)Nipple Union Nipple Assembly
06	N=6"(150mm)Nipple Union Nipple Assembly
08	N=8"(200mm)Nipple Union Nipple Assembly

Code	Conduit Entry
04	3/4" NPT
05	1/2" NPT
06	M20 x 1.5 P
17	None

Code	Sensor Length
A000	Specify Sensor Length in mm

Code	Choice of Indicator / Transmitter
KN	8080KN Temperature Indicator
PR	8080PR Temperature Indicating Switch
PN	8080PN Indicating Temperature Transmitter
HT	8080HT Indicating Transmitter With HART®

Code	Sensor Type
TJ	Type J Thermocouple
TK	Type K Thermocouple
TT	Type T Thermocouple
TE	Type E Thermocouple
TR	Type R Thermocouple
TS	Type S Thermocouple
PA	100 OHM RTD, Class A
PB	100 OHM RTD, Class B



Code	Choice of Thermowell
	Refer to Page 21 and 22 for Additional Details

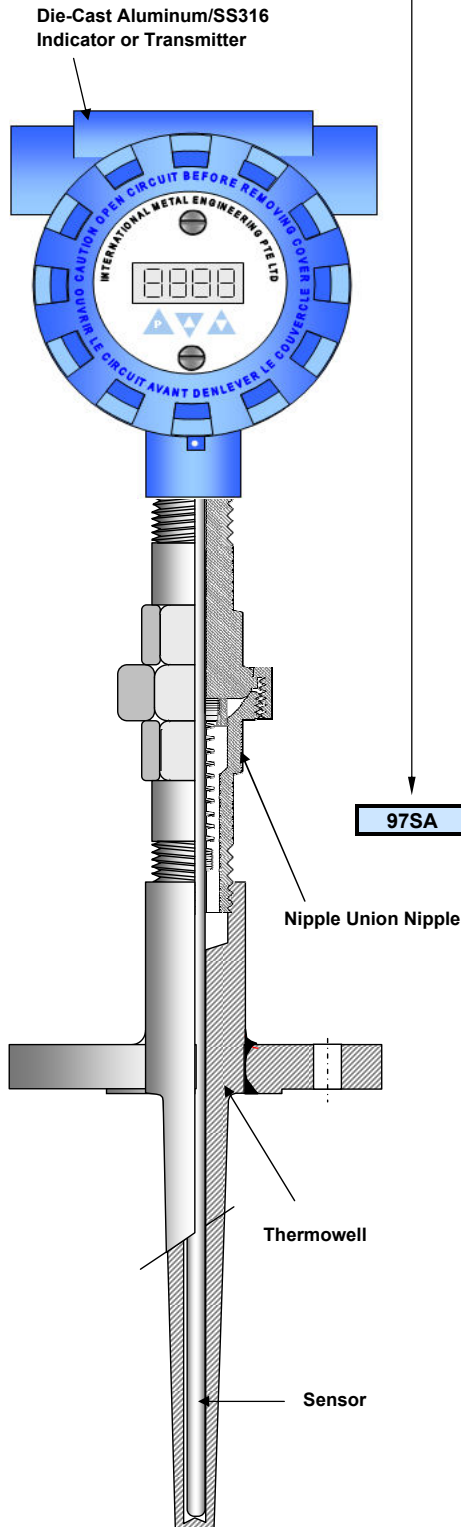
97SA 04 04 A127 02 PA --- Typical Model Number

Note:

- 1 Specification for all Type of Thermocouple sensor is Class 1, DIN/IEC 584 - 2 - 1992
- 2 Specification for all Type of RTD sensor is DIN/IEC 751 - 1985

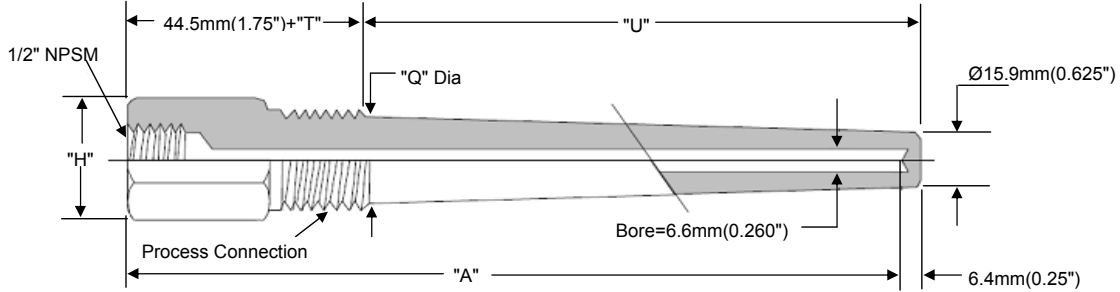
Certification System

	II 2G EExd IIC T6, IP 66 Ta = -20°C to +65°C	
-------------------------------------------------------------------------------------	----------------------------------------------------	---------------------------------------------------------------------------------------

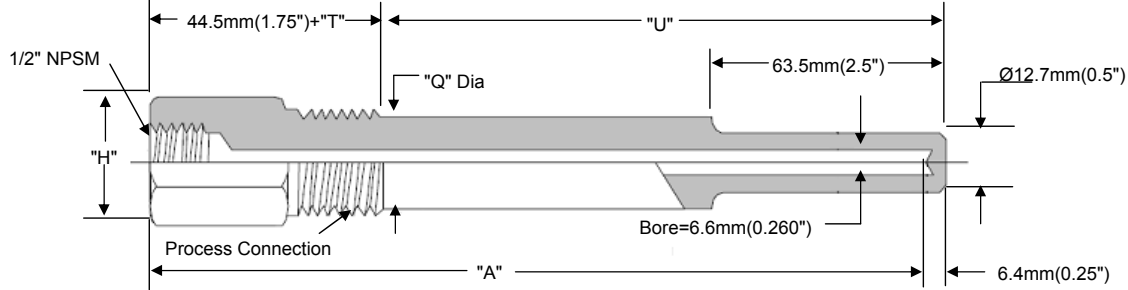


BAR STOCK THREADED THERMOWELLS

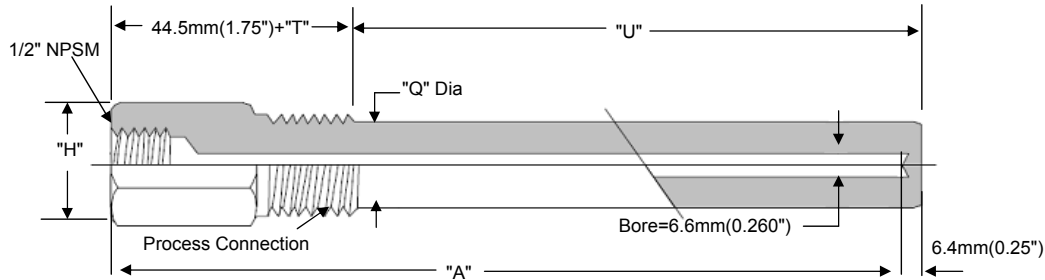
MODEL 2080 TAPERED THERMOWELL WITH THREADED CONNECTION



MODEL 2081 STEPPED THERMOWELL WITH THREADED CONNECTION



MODEL 2082 STRAIGHT THERMOWELL WITH THREADED CONNECTION

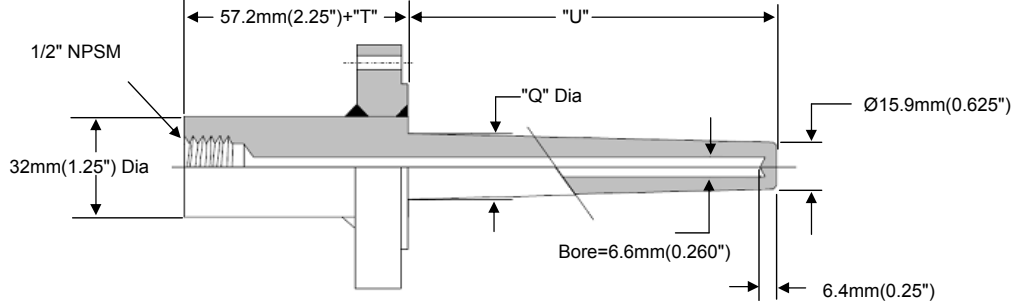


Ordering Information

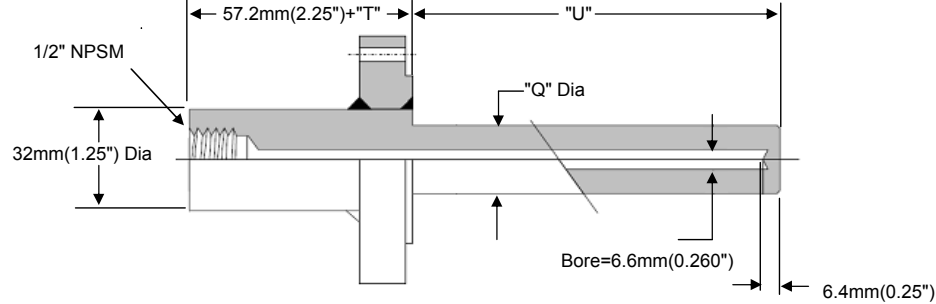
Model	Description			
2080	Threaded Thermowell, 0.260" Bore, Tapered Stem			
2081	Threaded Thermowell, 0.260" Bore, Stepped Stem			
2082	Threaded Thermowell, 0.260" Bore, Straight Stem			
	CODE	Process Connection	"H" HEX(A/F)	"Q" Diameter
	P1	1/2" NPT	1 1/8"	0.670"
	P2	3/4" NPT	1 1/8"	0.750"
	P3	1" NPT	1 3/8"	1.000"
	CODE	"T" Lag length		
	00	None		
	30	3"		
	60	6"		
	XX	Other (Specify in inches)		
	CODE	Material		
	S1	SS304		
	S2	SS316		
	BR	Brass		
	CS	Carbon Steel		
	MN	Monel		
	HA	Hastelloy C 276		
	XX	Other (Specify)		
	CODE	"U" Length		
	L000	Specify in Inch (Example: 065=6.5")		
2080	P1	00	S2	L675
TYPICAL MODEL NUMBER				

FLANGED THERMOWELLS

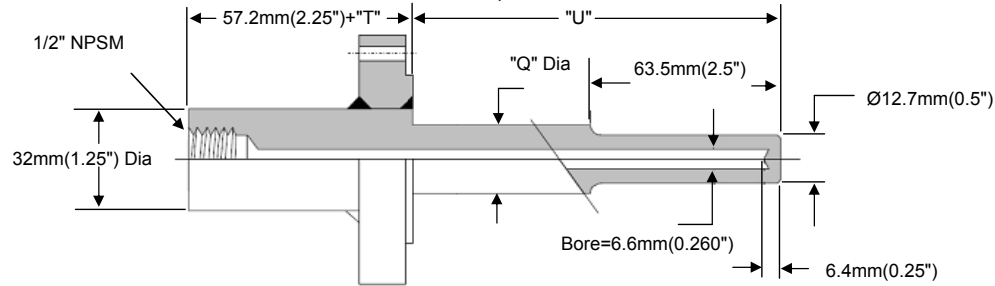
MODEL 2088 FLANGED THERMOWELL, TAPERED STEM



MODEL 2086 FLANGED THERMOWELL, STRAIGHT STEM



MODEL 2087 FLANGED THERMOWELL, STEPPED STEM



Ordering Information

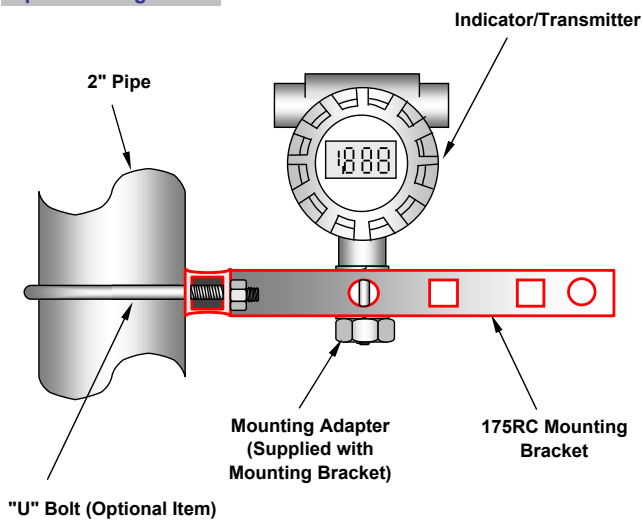
Model	Description
2088	Flanged Thermowell, 0.260" Bore, Tapered Stem, 1.000" Q Diameter
2086	Flange Thermowell, 0.260" Bore, Straight Stem, 1.000" Q Diameter
2087	Flanged Thermowell, 0.260" Bore, Stepped Stem, 1.000" Q Diameter
	CODE "P" Pipe Mounting Size
	P1 1/2"
	P2 3/4"
	P3 1"
	P4 1 1/2"
	P5 2"
	P6 2 1/2"
	P7 3"
	CODE Flange Rating
	W1 150 LB
	W2 300 LB
	W3 600 LB
	W4 900 LB
	W5 1500 LB
	W6 2500 LB
	CODE "T" Lag length
	00 None
	30 3"
	60 6"
	XX Other (Specify in inches)
	CODE Material
	S1 SS304
	S2 SS316
	BR Brass
	CS Carbon Steel
	MN Monel
	HA Hastelloy C 276
	XX Other (Specify)
	CODE "U" Length
	L000 Specify in Inch (Example:065=6.5")

2088 P1 W2 00 S2 L675 ← TYPICAL MODEL NUMBER

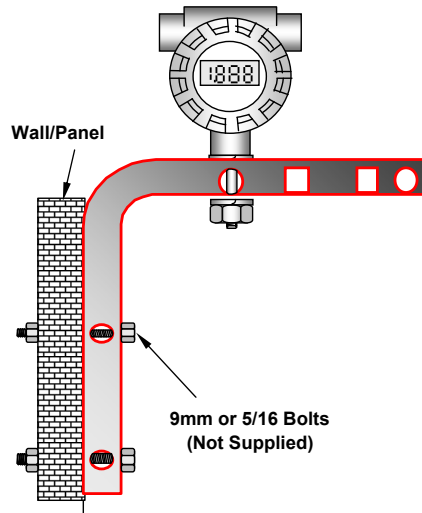
MOUNTING BRACKETS FOR INDICATORS AND TRANSMITTERS

Mounting Methods For Model 175RC

Pipe Mounting

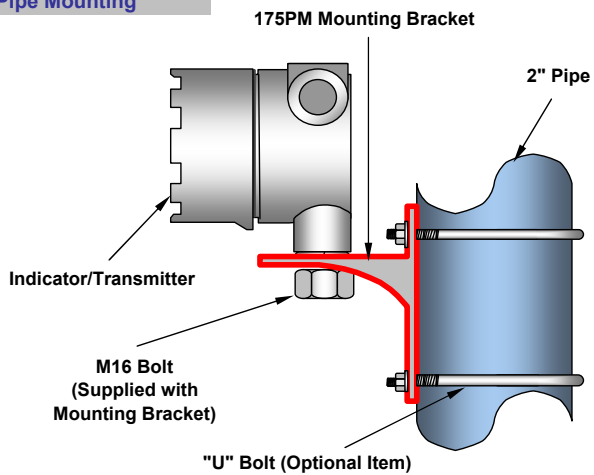


Wall / Panel Mounting

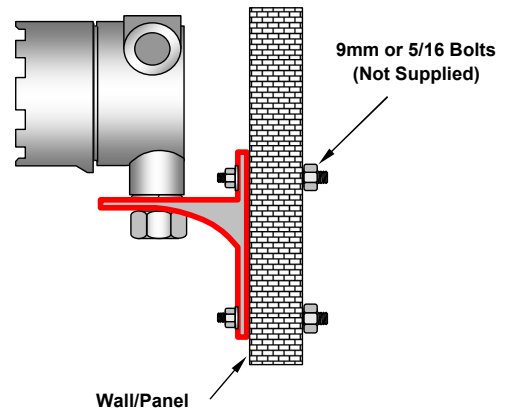


Mounting Methods For Model 175PM

Pipe Mounting

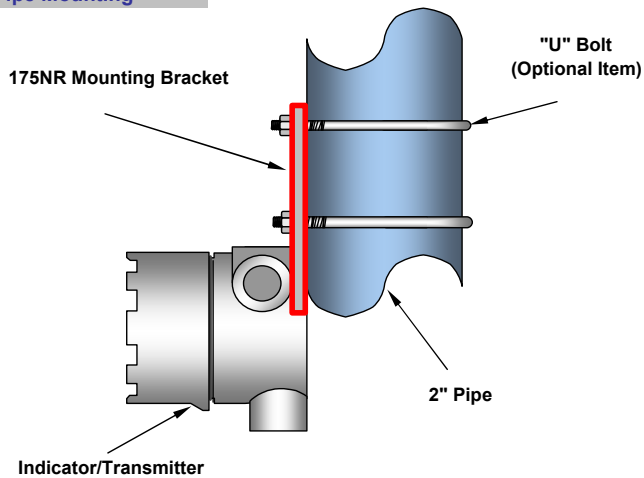


Wall / Panel Mounting



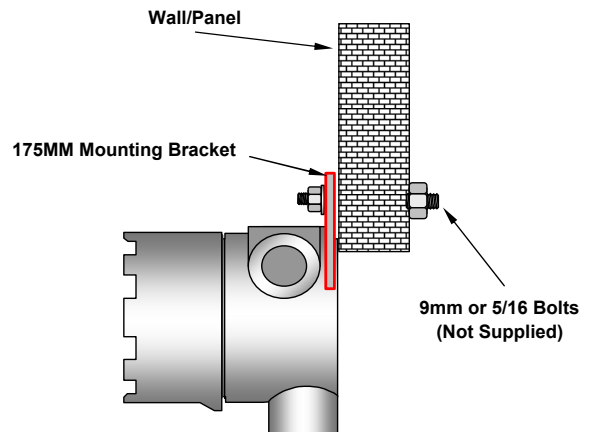
Mounting Methods For Model 175NR

Pipe Mounting



Mounting Methods For Model 175MM

Wall / Panel Mounting



PANEL MOUNTED INDICATOR AND TRANSMITTER SERIES

Model 9008PP/9008MK Loop Powered Indicator

FEATURES

- 4 TO 20 mA INPUT
- PANEL MOUNT 1/8 DIN, HIGH IMPACT PLASTIC
- LOOP POWERED
- NEMA4 FRONT PANEL
- 4 DIGIT 0.5" LCD/LED DISPLAY
- SELECTABLE DECIMAL POINT
- ENGINEERING UNITS DISPLAY SET VIA MEMBRANE SWITCHES
- 3 YEAR WARRANTY

DETAILS

The Model 9008PP/9008MK is a 4 digit loop indicator using a state of the art advanced microcontroller that derives its power from the 2 wire transmitter loop. The engineering unit can be made to read -999 to 9999 by adjusting membrane switches on the front panel. This feature eliminates all potentiometric settings and allows the unit to be adjusted using the membrane switches on the front panel.

The indication accuracy is 0.1% of calibrated range ± 1 digit.

Model 9008FR Flow Indicator / Totalizer with Alarms

FEATURES

- 4 TO 20 mA INPUT (PULSE OPTIONAL)
- PANEL MOUNT 1/4 DIN, HIGH IMPACT PLASTIC
- NEMA4 FRONT PANEL
- 4 DIGIT LED FOR RATE / 8 DIGIT LED FOR TOTAL DISPLAY
- TWO RELAYS PROGRAMMABLE FOR RATE OR TOTAL
- TIME DELAY & FAIL-SAFE RELAYS
- LATCHING OR NON LATCHING RELAYS
- UNIVERSAL POWER SUPPLY 85 - 220VAC
- ISOLATED 24VDC TRANSMITTER POWER SUPPLY
- 3 YEAR WARRANTY

DETAILS

The Model 9008FR is a Digital Flow Indicator that accepts a 4 to 20 mA signal or pulse from a flow meter and displays the flow rate and the totalized flow. Two independent alarms can be assigned to either the flow rate or totalized flow, making the unit ideal for batch control.

The flow rate is displayed on a bright 4 digit LED and the totalized flow on a 8 digit LED which are updated in less than one second. All parameters including alarm values, reset etc can be assigned using membrane keys on the front panel or by using a IR remote controller. This feature allows for easy setting without the use of potentiometers or even opening the front panel.

The indication accuracy is 0.1% of calibrated range ± 1 digit. The alarm set point accuracy is better than ± 0.5 percent of full scale.

Model 9008KN Temperature Indicator

FEATURES

- TYPE J OR K THERMOCOUPLE INPUT
- PANEL MOUNT 1/8 DIN, HIGH IMPACT PLASTIC
- NEMA4 FRONT PANEL
- 3 1/2 DIGIT 0.5" LCD DISPLAY
- BATTERY POWERED (2 YEAR + LIFE)
- CHOICE OF DEGREES C OR F
- 3 YEAR WARRANTY

DETAILS

The Model 9008KN is a 4 digit loop indicator accepts the input from a Type J or K Thermocouple and displays temperature in degrees C or F. Since the unit derives its power from an in-built battery source it can be installed in any panel or wall without the need for any power source, making it a versatile, easy to install device.

The indication accuracy is 0.1% of calibrated range ± 1 digit.

Model 9008GFD Ground Fault Detector with Alarms

FEATURES

- 0 TO 5 A INPUT (SINGLE PHASE)
- PANEL MOUNT 1/8 DIN, HIGH IMPACT PLASTIC
- NEMA4 FRONT PANEL
- 4 DIGIT LED DISPLAY
- TWO RELAYS PROGRAMMABLE FOR EARTH LEAKAGE DETECTION
- UNIVERSAL POWER SUPPLY 90 - 270 VAC
- 3 YEAR WARRANTY

DETAILS

The Model 9008GFD is a Digital Ground Fault Detector that accepts 0 to 5 A current from single phase conductors. Since the unbalanced current has been measured using by the special Current Transformer mounted internally in the instrument, 9008GFD is nearly independent of the load current and the system voltage.

Two independent alarms can be assigned over the various threshold point of the unbalanced current. The unbalanced current being measured will be displayed on a bright 4 digit LED Display. All parameters including threshold value, reset etc an be assigned using membrane keys on the front panel.

The indication accuracy is 0.1% of calibrated range ± 1 digit. The alarm set point accuracy is better than ± 0.5 percent of full scale.


Ordering Information

MODEL	Description	
9008PP	Panel Mounted 4 Digit LCD Loop Powered Indicator with Membrane Switches	
9008MK	Panel Mounted 4 Digit LED Battery Powered Temperature Indicator	
9008KN	Panel Mounted 4 Digit LCD Battery Powered Temperature Indicator	
9008FR	Panel Mounted Flow Rate and Totalizer Indicator + Alarms	
9008GFD	Panel Mounted Ground Fault Detector + Alarms	
	Code	Power Supply (Not Applicable To 9008KN)
	01	110 VAC $\pm 10\%$, 60 Hz (Not Applicable to 9008FR)
	02	220 VAC $\pm 10\%$, 50 Hz
	03	18 VDC to 28 VDC
	04	Universal AC Power Supply 90 to 270 VAC, 50 $\pm 5\%$ Hz (For 9008FR and 9008GFD)

9008PP
02
←
Typical Model Number


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E-mail: sales@intmet.com