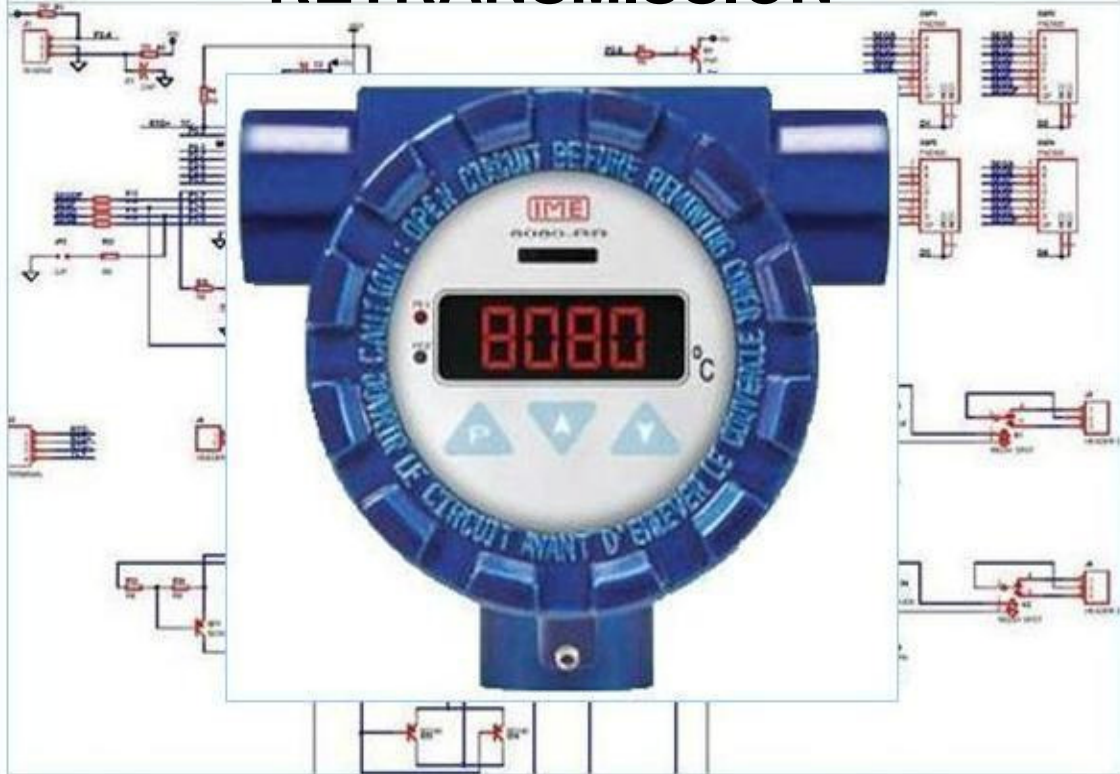


OPERATION MANUAL

FIELD MOUNTED LOOP INDICATOR WITH ALARMS AND RETRANSMISSION



8080RR

INTERNATIONAL METAL ENGINEERING

Released on 18th January 2011

FIELD MOUNTED LOOP INDICATOR WITH ALARMS AND RETRANSMISSION 8080RR

DESCRIPTION

The IME Model 8080RR is a compact, rugged, and reliable indicating instrument which is specifically designed for accurate process measurement applications where two relay outputs can be utilized in the field.

The IME Model 8080RR is manufactured using selected high-grade components which guarantee reliability and long operation. It has no moving parts which greatly enhances its versatility and carries a performance guarantee against manufacturing and workmanship defects.

The unit is designed for use in process industries where vibration, inclement weather and corrosive environments prevail. The electronics are enclosed in low copper epoxy coated Aluminum housing, and for more aggressive environments, 316 Stainless Steel housing is optionally available. Both housings meet the requirements of NEMA 4X and IP68. The NEMA 4X rating provides total immunity to corrosive atmospheres, high humidity (including condensation) and dust.

The unit accepts an industrial standard current signal of 4-20 mA and displays the actual process value calibrated in the desired units on a linear scale. A four digit red LED digital display is provided on the front panel which indicates the process value in real time. The instrument has three keys on the front panel and may be used to configure the process variable, assign set-points, hysteresis, and decimal point. The display can indicate any scale between -999 to 9999 units.

Two Relay outputs are offered in this model. Each of the relays may be configured to operate on either High or Low setting, with its independent hysteresis value and time delay. These set points may be set through the Membrane Switch-pad.

The instrument has a non-volatile memory so in case of power failure, the set points and other settings are retained in memory and the indication and control actions resume after power is restored.

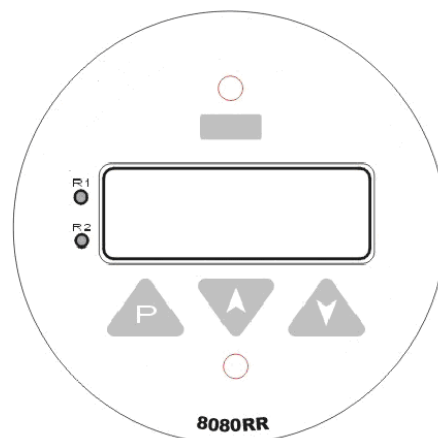
INSTALLATION

The IME Model 8080RR is designed to be mounted in the field, either on a 2" pipe or wall/panel. IME gives a choice of three (4) 316 stainless steel mounting brackets. . All mounting hardware is available from IME.

The cables carrying the input signal should be routed separately and properly isolated from the power line cables, to prevent any electromagnetic interference in the input signal readings from the main power line. Use of shielded twisted pair cable is recommended for input signals. The shield must be connected to Earth only at the instrument end. The instrument should be earthed to a proper grounding point before connecting the Power Supply. The Relay contacts are potential free and any desired voltage may be used in conjunction with the same.

OPERATION & SETTINGS

The front panel of the Digital process Indicator Controller is as shown below:






The digital Indicator controller has a four-digit display window on the front panel for indicating the process value. Further, two LED indications show the over-range status of the two control Relays.

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CONTROL KEYS

The instrument has three keys on the front panel, functions of which are described below:

	The PROG or PROGRAM key is the central coordinating key to access the settings of the instrument. Pressing this Key allows the operator to sequentially view, change and save the parameters.
	The INC or Incrementing key allows the operator to select the numeral in the digit being set on an increasing scale. The digit will sequentially display 0, 1, 2....9 on each pressing of the INC key. The incrementing speed increases if the key is kept pressed.
	The DEC or Decrementing key allows the operator to select the numeral in the digit being set on a decreasing scale. The digit will sequentially display 9, 8, 7....0 on each pressing of the DEC key. The decrementing speed increases if the key is kept pressed.

SETTINGS & CALIBRATION

The following is the sequence of settings on the Digital Indicator/Controller:

CONTROL SETTINGS

NOTE: Since the 4-20 mA current settings are internally generated, there is no need of an external current source to carry out the initial settings of the instrument.

After a key is pressed, the display will “time-out” within five seconds if no changes is made in the settings.

All settings are to be done using Increment (▲) and Decrement (▼) keys.

KEY PRESSED	INITIAL DISPLAY	ALTERNATING DISPLAY	FUNCTION
(POWER ON)	8.8.8.8.	- - - -	Initialization of internal controller and Lamp Test (self diagnostics).
-	Err		If Input Signal is not connected.
PROG P	Set1	(preset value)	The indication “Set1” which is the control set-point for Relay-1, is displayed alternately with the factory preset value.
PROG P	HY1	000.5	The Hysteresis value for Relay-1 may be set (default value 0.5 counts).
PROG P	LG1	HI	The Control Logic for Relay-1 may be decided. Options are “hi” (High) or “LO” (Low).
PROG P	Ht1	0001	Minimum Off time of Relay-1 (in seconds) - to avoid chatter
PROG P	Set2	(preset value)	The indication “Set2” which is the control set-point for Relay-2, is displayed alternately with the factory preset value.
PROG P	HY2	000.5	The Hysteresis value for Relay-2 may be set (default value 0.5 counts).
PROG P	LG2	HI	The Control Logic for Relay-2 may be decided. Options are “hi” (High) or “LO” (Low).
PROG P	Ht2	0001	Minimum Off time of Relay-2 (in seconds) - to avoid chatter
PROG P	(process value)		(if Input Signal is connected)

FIELD MOUNTED LOOP INDICATOR WITH ALARMS AND RETRANSMISSION 8080RR

CALIBRATION

All settings are to be done using Increment (↑) and Decrement (↓) keys.

KEY PRESSED	DISPLAY	ALTERNATING DISPLAY	FUNCTION
Press and hold the (▼)key for 2 seconds			Instrument goes in "User Settings" mode.
PROG P	Pt	0002	Enter the number of Relays actually being used in the application. [Options are 1/2]. This feature may be used to temporarily disable the use of one or more Relays. e.g., if the User needs to use both Relays, select 2.
PROG P	dP	0000	Set the Decimal Position. [Options are: 0 / 1 / 2 / 3]. These numbers indicate the position of the Decimal with respect to the Least Significant Digit (right-most digit). e.g., 0 indicates No Decimal Point.
			NOTE : If the desired Scale Range is 0 to 90.0, then the Span (upper) range should be first set to "900" and then the Decimal Position should be selected as 0001. This will give a range of 90.0 on the Span scale.
PROG P	LO	0000	The desired Zero (lower) range setting for the process being measured / controlled may be set using INC and DEC keys. The lowest Zero level possible is -999.
PROG P	HI	5000	The desired Span (upper) range setting for the process being measured / controlled may be set using INC and DEC keys. The maximum Span level possible is 9999.

This completes the entire settings of the Digital Process Indicator / Controller.

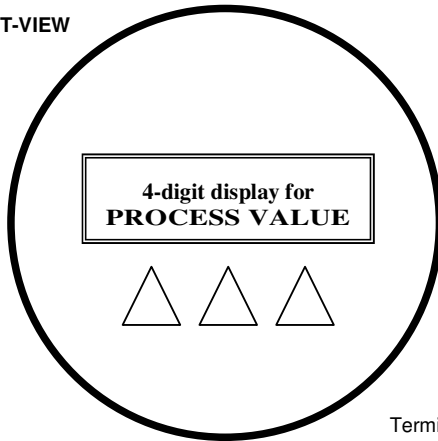
The explanation of the various Displays and Messages that would be visible on the instrument Menu are as follows:

SR.	MESSAGE	DESCRIPTION
1.	Set1 / Set2	Set-Point for Relay-1/2. [Range is -999 to 9999].
2.	HY1 / HY2	Process Value Hysteresis for Relay-1/2 [e.g. 0010 for a hysteresis of 10 counts].
3.	LG1 / LG2	Control Logic for Relay-1/2. [Options are HI / LO].
4.	Ht1 / Ht2	Time Hysteresis: To adjust the desired minimum off time (in seconds) between Relay resets (to avoid chatter).
5.	Pt	The number of Relays actually being used in the application. [Options are 1/2]. This feature may be used to temporarily disable the use of one or more Relays in the instrument. e.g., if User needs to use both Relays, select 2. [This parameter must not be changed by user unless essential].
6.	dP	Decimal Position. [Options are: 0 / 1 / 2 / 3]. These numbers indicate the position of the Decimal with respect to the Least Significant Digit (right-most digit). e.g., 0 indicates No Decimal Point.
7.	LO	Zero (lower) range setting for the process being measured / controlled may be set using INC and DEC keys. The lowest Zero level possible is -999.
8.	HI	Span (upper) range setting for the process being measured / controlled may be set using INC and DEC keys. The maximum Span level possible is 9999.

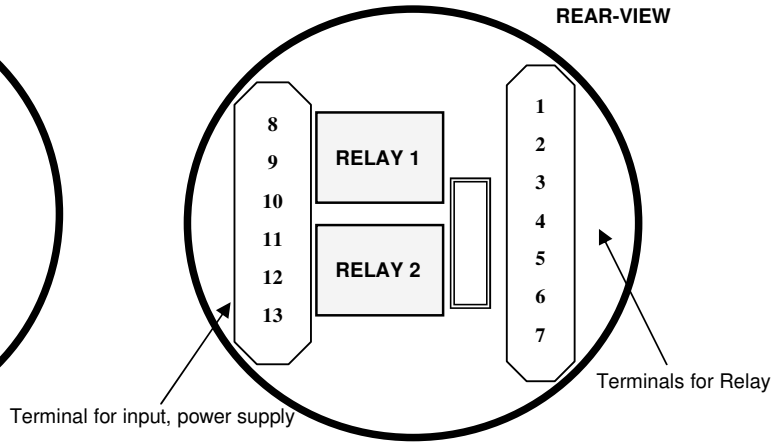
FIELD MOUNTED LOOP INDICATOR WITH ALARMS AND RETRANSMISSION 8080RR

TERMINAL DIAGRAM

FRONT-VIEW



REAR-VIEW



TERMINAL BLOCK – 1

1	2	3	4	5	6	7
+	-	-	+	+	+	-
24 V DC POWER SUPPLY		4 to 20 mA OUTPUT		24V OUT	4 to 20 mA INPUT	

TERMINAL BLOCK – 2

8	9	10	11	12	13
NC	C	NO	NC	C	NO
RELAY-1			RELAY-2		

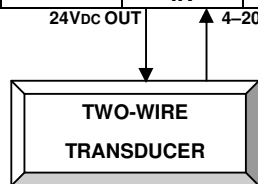
TERMINAL DETAILS

TERMINAL BLOCK	TERMINAL NO.	NOTATION	DETAILS
TERMINAL BLOCK - 1	1	+	Power Supply 24 V DC
	2	-	
	3	-	4 to 20 mA DC OUTPUT
	4	+	
	5	+	24 V DC output
	6	+	4 to 20 mA DC
	7	-	INPUT (4-wire)
TERMINAL BLOCK - 2	8	NC	RELAY - 1
	9	C	
	10	NO	
	11	NC	RELAY - 2
	12	C	
	13	NO	

TERMINAL BLOCK – 1

1	2	3	4	5	6	7
+	-	-	+	+	-	No CONN
24 V DC POWER SUPPLY		4 to 20 mA OUTPUT		TRANS IN		

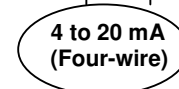
TWO-WIRE
CONFIGURATION



TERMINAL BLOCK – 1

1	2	3	4	5	6	7
+	-	-	+	+	+	-
24 V DC POWER SUPPLY		4 to 20 mA OUTPUT		24V OUT	4 to 20 mA INPUT	

FOUR-WIRE
CONFIGURATION



FIELD MOUNTED LOOP INDICATOR WITH ALARMS AND RETRANSMISSION 8080RR

TECHNICAL SPECIFICATION

Model	:	8080RR
Type	:	Microcontroller based Digital Process Indicator with Control and Retransmission
Input Signal	:	4 to 20 mA DC
Display	:	Seven-segment, red LED display
Indications	:	Four-digit display
Display Range	:	-999 to 9999 (fully configurable)
Calibration Range	:	May be calibrated as required
Decimal point	:	Selectable
Response time	:	Typically 200 ms
Output	:	Two control relay change-over contacts – Control logic selectable
Contact rating	:	10 Ampere @ 230 V AC (Res. Loads)
Retransmission Output	:	4 to 20 mA DC output
Load Diving capacity	:	600 Ohms
Memory	:	Non-Volatile (on EEPROM)
Settings	:	By Membrane Switch pad on front panel
Features	:	Configurable for scale Calibration, Decimal point, Number of active Relays, Control Logic, Set points, Hysterisis, etc.
Accuracy	:	± 0.1% FS
Power Supply	:	18 to 28 V DC

CERTIFICATION

Both the Aluminum and the SS316 housing are certified NEMA4X and IP68.

FM / CSA EX PROOF CERTIFICATIONS

Class I Div I Groups B, C and D
Class II Div I Groups E, F and G

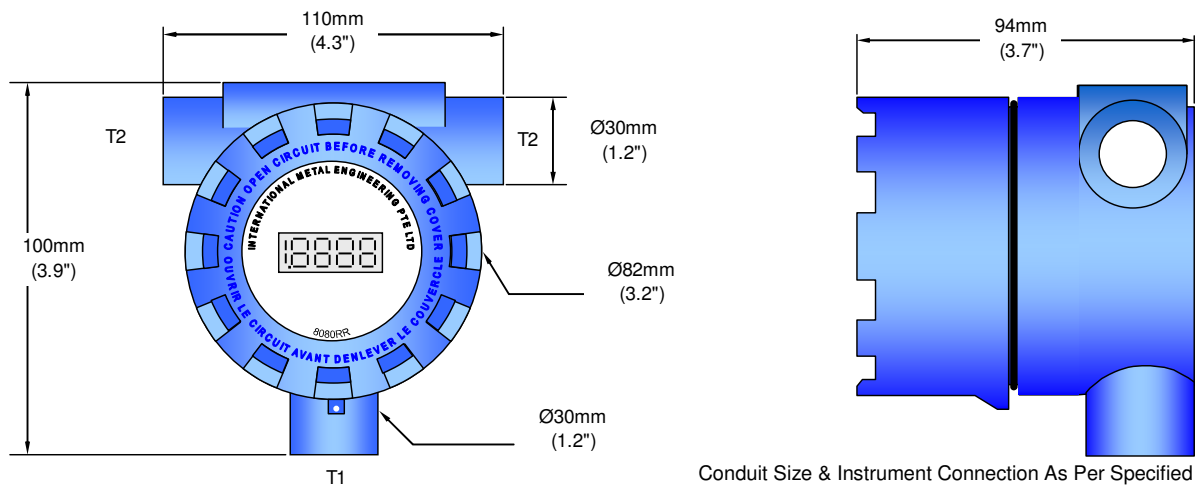
ATEX / IECEx EX PROOF CERTIFICATIONS

ATEX II 2 G D
Ex d IIC T6 Gb
Ex tb IIIC 85 °C Db IP68
Ta = -40 °C to +60 °C

**FIELD MOUNTED LOOP INDICATOR WITH ALARMS AND RETRANSMISSION
8080RR**

CONFIGURATION AND ORDERING INFORMATION

IME MODEL	DESCRIPTION			
8080RR	Field Mounted Process Indicator with 4 Digit LED And Dual Relays			
	CODE	OPTIONS, HOUSING		
	A	Die cast Aluminum, Blue Epoxy Painted		
	T	Stainless Steel SS316, Electro-Polished		
		CODE	CONDUIT SIZE (T2)	PROCESS CONNECTION (T1)
		01	3/4" NPT	M16 x 2P
		02	1/2"NPT	M16 x 2P
		03	M20 x 1.5P	M16 x 2P
		04	3/4" NPT	1/2"NPT
		05	1/2"NPT	1/2"NPT
		06	M20 x 1.5P	1/2"NPT
		07	3/4" NPT	3/4" NPT
		08	1/2"NPT	3/4" NPT
		09	M20 x 1.5P	3/4" NPT
		10	3/4" NPT	1/2"BSP
		11	1/2"NPT	1/2"BSP
		12	M20 x 1.5P	1/2"BSP
		13	None	3/4" NPT
		14	None	M20 x 1.5
		16	None	1/2"BSP
		17	None	1/2"NPT
		CODE	EXPLOSION PROOF CERTIFICATION	
		NO	NONE	
		E1	FM/CSA/ATEX/IECEX Explosion Proof Certified, NEMA4X	
		CODE	ACCESSORIES	
		RC	SS316 2" Pipe/ Wall Mounting Bracket, IME Model 175RC	
		PM	SS316 2" Pipe/ Wall Mounting Bracket, IME Model 175PM	
		NR	SS316 2" Pipe/ Wall Mounting Bracket, IME Model 175NR	
		MM	SS316 2" Pipe/ Wall Mounting Bracket, IME Model 175MM	
8080RR	A	03	E1	PM ← Typical Model Number



Conduit Size & Instrument Connection As Per Specified

Note

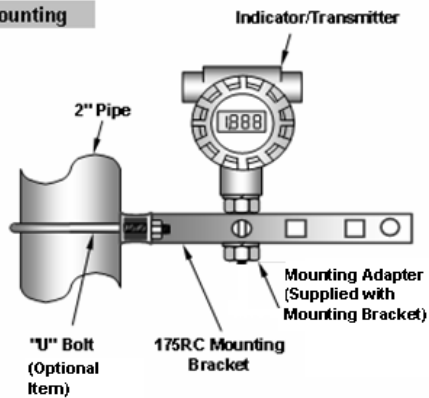
1. T2 is defined as the two Connections, in tandem, where normally the conduits would be connected.
2. T1 is defined as the Instrument Connection, which is perpendicular to the conduit connections
3. M16 X 2 Entry is not a through entry but only a provision for the mounting bracket.

FIELD MOUNTED LOOP INDICATOR WITH ALARMS AND RETRANSMISSION 8080RR

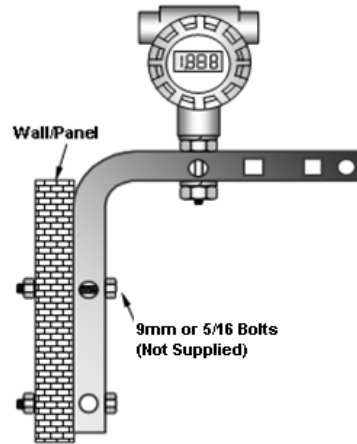
IME MODEL 175RC

Mounting Methods

Pipe Mounting



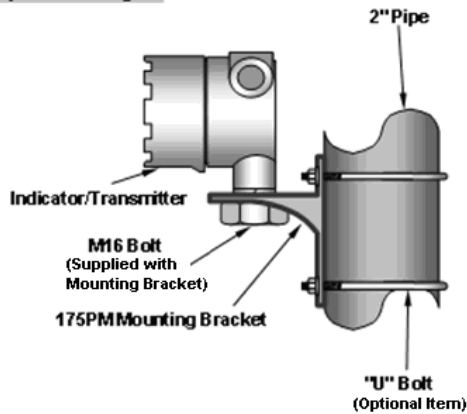
Wall/ Panel Mounting



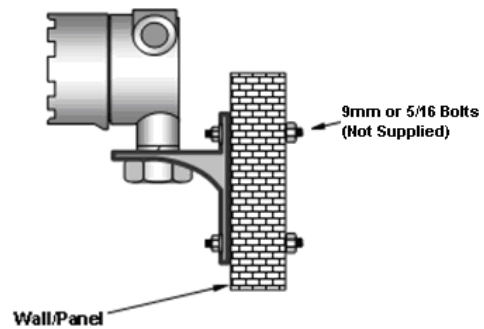
IME MODEL 175PM

Mounting Methods

Pipe Mounting



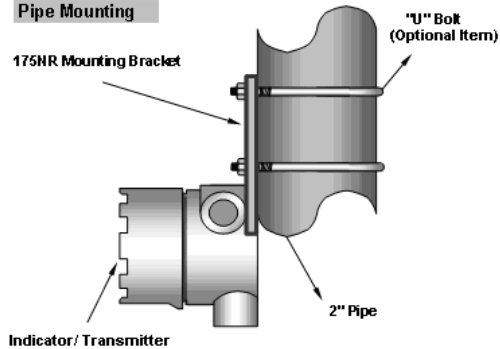
Wall/ Panel Mounting



IME MODEL 175NR

Mounting Method

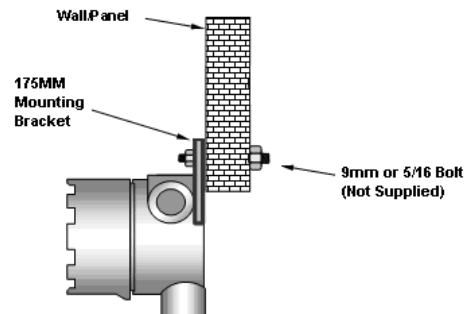
Pipe Mounting



IME MODEL 175MM

Mounting Method

Wall/ Panel Mounting



FIELD MOUNTED LOOP INDICATOR WITH ALARMS AND RETRANSMISSION 8080RR

WARRANTY

International Metal Engineering Pte. Ltd. (IME) for the effective period of the warranty set out below, warrants that its standard products will be free from defects in materials and workmanship under normal use and service.

International Metal Engineering Pte Ltd.'s obligation under this warranty shall not arise until Buyer returns the defective product, freight prepaid to IME's facility in Singapore or any other authorized destination, specified in writing by IME.

The only responsibility of IME under this warranty is, at its option and sole discretion, to replace or repair, free of charge any defective component part of such product.

EFFECTIVE PERIOD OF WARRANTY

Three years from date of invoice for new products. For repairs the warranty shall be one year from the date of shipment.

LIMITATION OF WARRANTY

The warranty set forth herein does not extend to and shall not apply to:

Products which have been repaired or altered by other than IME's personnel, unless Buyer has properly altered or repaired the products in accordance with procedures previously approved in writing by IME.

Products, which have been subject to misuse, neglect, accident, or improper installation or operation.

Products, which have been mechanically damaged.

The warranty and remedies set forth above are in lieu of all other warranties expressed or implied, oral or written, either in fact or by operation of law, statutory or otherwise, including warranties of merchantability and fitness for a particular purpose, which IME specifically disclaims.

IME neither assumes nor recognizes any other liability in connection with the sales, installation or use of its products.

IME shall have no liability for incidental or consequential damages of any kind arising out of the sale, installation or use of its product.

The IME address to which notices, authorizations, and approvals and written communications pertaining to this warranty are to be delivered is:

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