PSK Controllers Ltd.
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PIM-Digital Process Input Meter

- ACCEPTS 4 INPUT SIGNALS.
- 4-20mA; 0-10VDC; 4 -12-20mA; 0-20mA.
- 4- DIGIT 0.56" RED SUNLIGHT READABLE DISPLAY.
- TWO SETPOINT ALARM OUTPUTS.
- 230 VAC INPUT POWER MODELS.
- SUNLIGHT REALABLE DISPLAY MODELS.
- PROGRAMMABLE DISPLAY & FUNCTION KEYS
- 2 RELAY N/O OUTPUT
- IP51 SEALED FRONT BEZEL

CAUTION! Read complete instruction prior to installation and operation of the unit.

CAUTION! Risk of electric shok!

General Description

The PIM Process Input Meter offers many features and performance capa bilities to suit a wide range of industrial applications. Multi voltage Powered from 48-240 VAC/DC, the meter has the capability to accept 4-20 mA, 0-10VDC, 4-12-20 mA or 0-20 mA input signals. Each input signal can be independent ly scaled and – displayed. Any of the 4 values can have Alarms. The meters employ a bright 0.56" (12.7 mm) LED display. The meter has two set point. Outputs, provide dual FORM-C relays (8A). The set point alarm can be con figured to suit a variety of control and alarm requirements. Once the meters have been initially configured, the pa rameter list may be locked out from further modification. The meters have been specifically designed for harsh in dustrial environments. With IP51 sealed bezel and extensive testing of noise effects to CE requirements, the meter provides – a tough yet reliable applica tion solution.

Safety Summary

All safety related regulations, local codes and instructions that appear in this literature or on equipment must be observed to ensure personal safety and to prevent damage to either the instru ment or equipment is used in a manner not specified by the manufacturer, the protection provides by the equipment may be impaired.

General Meter Specification

1.DISPLAY: 4 digit, 0.56" (14.2 mm)
  a.Red LED(-999 to 9999)
2.PASSWORD: Programmable pass-words restrict modification of pro-grammed settings.
3.ANNUNCIATOR:
  It- mode type
  PASS- pass word
  D.P.- decimal point set up
  HI- upper reading set up
  LSP1- relay set point 1
  LSP2- relay set point 2
  HY-1- Hysteresis set relay 1
  HY-2- Hysteresis set relay 2
4.KEYPAD: Four front panel buttons
5.A/D CONVERTER: 20.000 resolution.
6.DISPLAY MESSAGES: "- - - -" Ap-pears when measurement exceeds signal rang.
7.INPUT impedance:
  ImpedanceMode type

100Ω	4-20mA
100Ω	4-12-20mA
20KΩ	0-10v
20KΩ	0-20mA

8.CONSTRUCTION:
Self-extinguishing plastic housing UL 94V-0 acc IEC 529, color: black. This unit is rated for IP50 (body end cover) IP51 front bezel.
9.MOUNTING: 1/8 DIN panel cutout re-quired: 3.622" x 1.772" (92mmx 45mm). Two panel mounting bracket assem-blies are provided.

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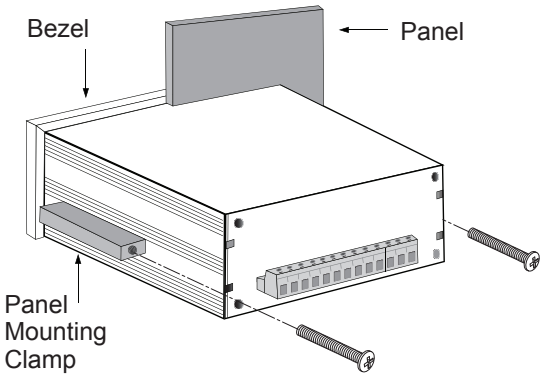
10.CERTIFICATIONS AND COMPLIANCES:
CE approved.
EN 61326-1 Immunity to industrial Locations conform to standards: IEC 61010-1 Safety requirements for measurement, control and laboratory use part 1.
IP51 Enclosure rating (face only)
IP20 Enclosure rating (rear of unit)
11.ENVIROMENTAL CONDITIONS:
Operating temperature range:
- 40°C to 65°C
Storage temperature range:
- 40°C to 85°C
Relative humidity:
0-90% non-condensing.
12.CONNECTION:
Terminal: Acc IEC 60947-7-1, IEC 60998-1 24~12 AWG/ 0.14~2.5 mm² cop
Tightening Torque: 0.5 Nm.
13.ISOLATION: 4KW input-to-power line, 500V input- to- output or output- to - P+ supply.
14.POWER: 240VAC or 110VAC , or 24VAC, 24VDC or 12VDC
Rated power consumption: 2.4 VA
Rated frequency for as voltage: 48 to 55
15.FUSE: Required external fuse: UL Recognized, 2A max, slow-blow.
16.WEIGHT: 9.5 oz. (269g)

Installing the Meter

Installation.
The PIM unit is intended to be mounted into the enclosed panel. Prepare the panel cutout to the dimensions shown. Remove the panel latch from the unit. Insert the unit into the panel cutout. While holding the unit in place, insert the unit latch on both sides of the unit and tighten the screws evenly until the snug in panel. Do not over- tighten the screws.



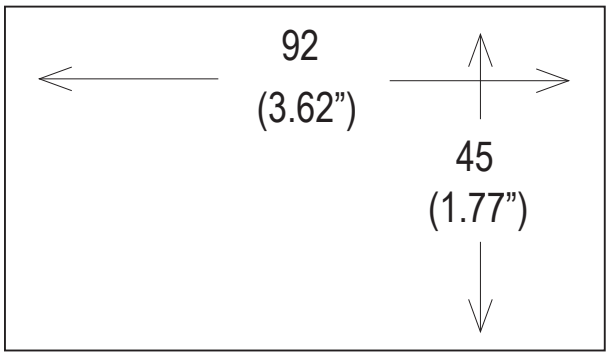
Wiring 75ºC Wire		8mm			
L1 - T1	[mm²] 0.05 ÷ 4	[mm²] 0.05 ÷ 4	N.A.		M3 0.5Nm
N, 1, 2, 3 W, X, (+) (-)	[mm²] 0.05 - 4	[mm²] 0.05 - 4	N.A.	N.A.	M3 0.5Nm Max

Important: When using electric or pneumatic tools for screw terminals observe max. torque limits

Installation Environment

The unit should be installed in a location that does not exceed the maximum operating temperature, and provides good air circulation. Placing the unit near devices that regenerate excessive that should be avoided. The front panel should be cleaned only with a soft cloth and neutral soap product. Do NOT use solvents. Continuous exposure to direct sunlight may accelerate the aging process of the panel. Do not use tools of any kind, (screwdrivers, pens, pencils, etc.) to operate the keyboard of the unit

Panel Cut-Out mm [inch]



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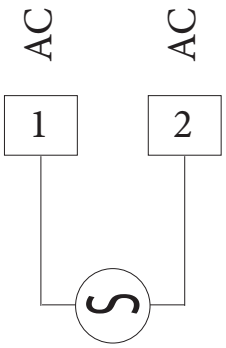
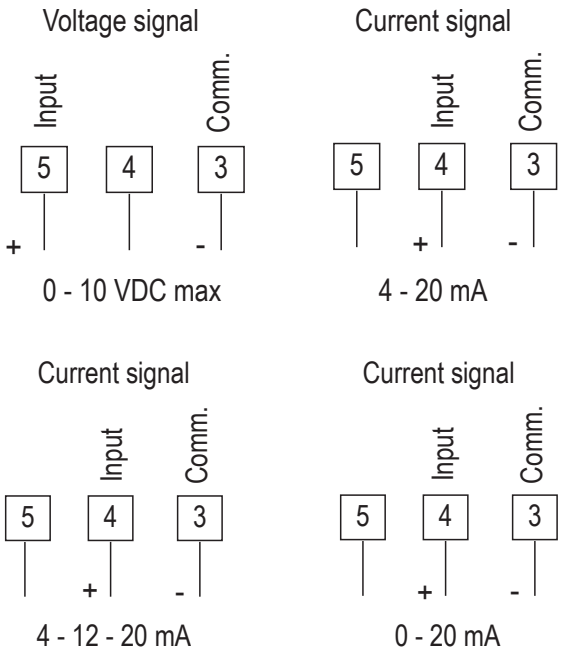
Power Wiring

Terminal 1: VAC
Terminal 2: VAC



Input Signal Wiring



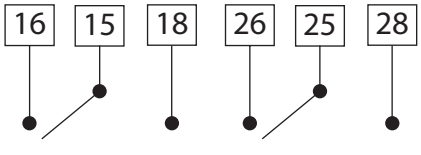
Wiring the Meter

Wiring overview

Electrical connections are made via screw-clamp terminals located on the back of the meter. All conductors should conform to the meter's voltage and current ratings. All cabling should conform to appropriate standards of good installation, local codes and regulations. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker. When wiring the meter, compare the numbers embossed on the back of meter case against this shown in wiring drawings for proper wire position. Strip the wire, leaving approximately 0.3" (705 mm) bare lead exposed (stranded wires should be tinned with solder). Insert the lead under the correct screw clamp terminal and tighten until the wire is secure. (Pull wire to verify tightness.) Each of the relay / measure terminal can accept up to one # 14 AWG (2.55 mm) wire Two #18 AWG (1.02 mm), or four # 20AWG (0.61 mm). The power terminal can accept up to one # 30~16 AWG (0.14~1.5 mm²).

Set Point (Alarm) Wiring

Relay 1: (16) (15) (18)
Relay 2: (26) (25) (28)



EMC Installation Guidelines

Although this meter is designed with a high degree of immunity to Electro-Magnetic-Interface (EMI), proper installation to ensure compatibility in each application.The type of the electrical noise, its source of the method of coupling into the unit may be different for various installation. Listed below are some EMC guidelines for successful installation in an industrial environment.

1.The meter should be mounted in a metal enclosure, which is properly connected to protective earth.

2.With use of lower input ranges or signal sources with high source impedance, the use of shielded cable may be necessary. This helps to guard against stray AC pic-up. Attach the shield to the input common of the meter.

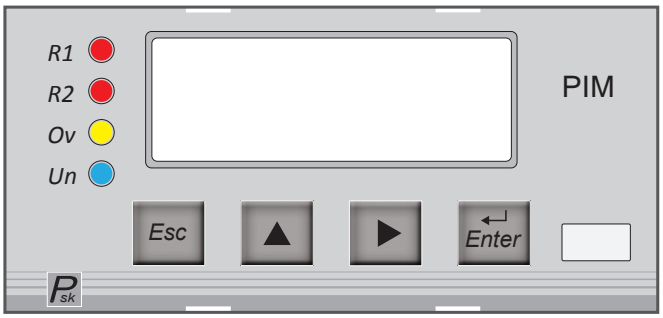
3.To minimize potential noise problems, power the meter from the same power branch, or at least the same phase voltage as that of the signal source.

4.Never run Signal or Control cables in the same conduit or raceway with AC power lines, conductors feeding motors, solenoids, SCR controls, and heaters, etc. The cable should be run in metal conduit that is properly grounded. This is especially in applications where cable runs are long and portable two-way radios are used in close proximity or if the installation is near a commercial radio transmitter.

5.Signal of control cables within an enclosure should be routed as far away as possible from contactors, control relays, transformers and other noise components.
6.In extremely high EMI environments, use of external EMI suppression devices, such as ferrite suppression cores, is effective. Install them on Signal and Control cables as close to the unit as possible. Loop the cable through the core several times or use multiple cores on each cable for additional protection. Install line filters on the power input cable to the unit to suppress power line interference.

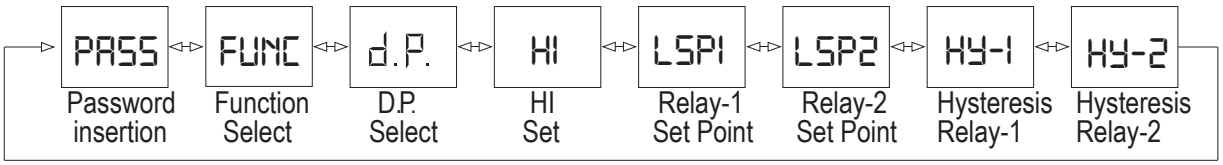
Install them near the power entry point of the enclosure. The following EMI suppression devises (or equivalent) are recommended:
Ferrite Suppression Cores for signal and control cables:
Fair-Rite#0443167251(RLC#COR0000)
TDK # ZCAT3035-1330A
Line filters for input power cables:
Schaffner#FN2010-1/07(RLC#LFIL0000)
Shaffner # FN670-1.8/07
7.Long cable runs are more susceptible to EMI pick-up than short cable runs. Therefore, keep cable as short as possible.
8.Switching of inductive loads produces High EMI. Use of Snubbers across in

Reviewing Front Buttons and Display



R1	Red LED	Relay 1 ON
R2	Red LED	Relay 2 ON
Ov	Yellow	Over range
Un	Blue	Under range

Esc	Key 1	Quit programming and return to display mode
▲	Key 2	Increment selected parameter
▶	Key 3	Shift right next digit
Enter	Key 4	Set the value recorded



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Programming

Press key	Display view	Explanation
	Programming	
Esc	PASS	
▲	FUNC	
Enter		Last function displayed on the screen
▲		Scroll to select function
Enter	FUNC	END of function selection
▲	D. P.	
Enter	Adjust D.P.	
▲	Press to Select D.P	Using knobs ▲ and ▶ Enter D.P. requested
Enter	END of selection	D.P. Selected
	HI SET	
▲	HI	
Enter	Press to Select value	Using knobs ▲ and ▶ Enter value requested
Enter	The high value is set	
▲	LSPI	Relay R1 set point adjustment

Note: PIM have 4 programms: 0-20 mA, 0-10 VDC, 4-20 mA, 4-12-20 mA (Zero point at 12 mA)

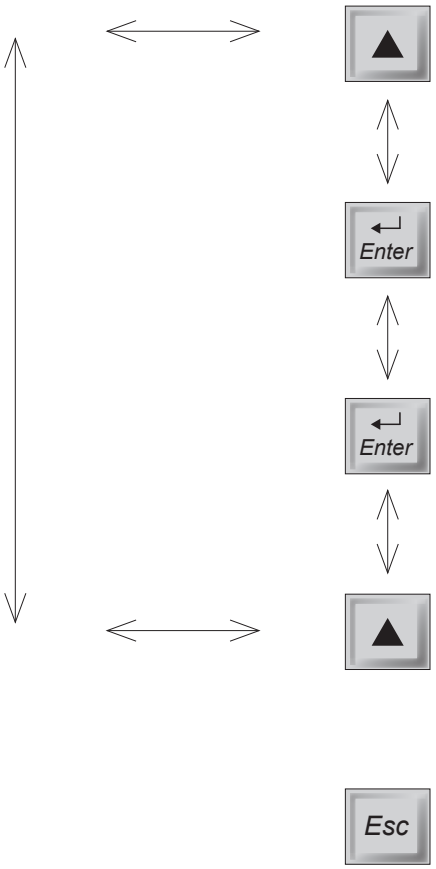
Press key	Display view	Explanation
Enter		Using knobs ▲ and ▶ Enter value requested
Enter		LSPI Selected
▲	LSP2	Relay R2 set point adjustment
Enter		Using knobs ▲ and ▶ Enter value requested
Enter		LSP2 Selected
▲	HY-1	R1 Relay Hysteresis setup
Enter		Using knobs ▲ and ▶ Enter value requested
Enter		HY-1 Selected
▲	HY-2	R2 Relay Hysteresis setup
Enter		Using knobs ▲ and ▶ Enter value requested
Enter		HY-2 Selected
Esc	MOD PIM REDY	Parameters UNLOCK

Press key	Display view	Explanation
Parameters LOCK		
▲	LOC	
Enter	Using knobs ▲ and ▶	Enter Value 1 0 1 0
Enter	MOD PIM REDY	Parameters LOCKED
Parameters UNLOCK		
Esc	PASS	
▲	*Func*	
Enter		Displayed last function chosen
▲	Scroll until you reach to	LOC
Enter	0 0 0 0	
▲	PASS	
Esc	MOD PIM REDY	Parameters UNLOCK

Note: At programming mode operation:
If the button wasn't pressed for a logn of 2 minutes,
the measures will exit programming.
To continue programming ,please, enter the password again.

Quick Programming View

Permits viewing all parameters without changing them, this mode help recheck and ensures all data parameters are correct.

Press	Panel Readout
Esc	PASS
	FUNC Receive the function you have choose Back to FUNC Next parametr value At the end push to return to working mode.

Calibration

The meter has been fully calibration at the factory. Scaling to convert the input signal to desired display value according to the TC performed by front panel touch buttons. If the meter appears to be indicating incorrectly or inaccurately, contact technical support at the appropriate company listed.

Troubleshooting

Problem	Remedies
No Display	CHECK: power connection, line voltage
Incorrect Display	VERYFY: input signal

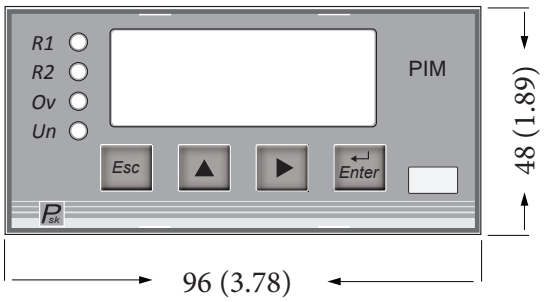
Warning: Calibration of this meter based on software, no extremal meter or signal sourse is required.

Limited Warranty

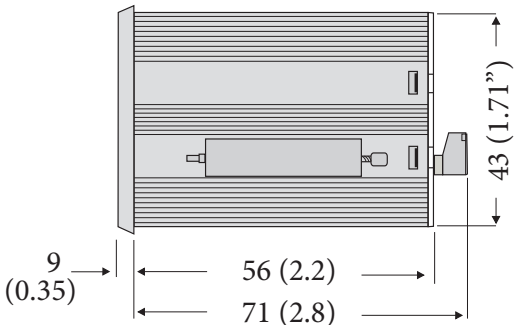
The company warrants the products it manufactures against defects in materials and workmanship for a period limited for one year from the date installation, provided the products have been store, handled, installed and used under proper conditions. The company's liability under this limited warranty shall extend only to the repair or replacement of a defective product, at the company's option. The company disclaims all liability for any affirmation, promise or representation with respect to the products. The customer agrees to hold PSK controllers harmless from defend, and indemnify PSK controllers against damages, claims and expenses arising out if subsequent sales of PSK controllers products or products containing components manufactured by PSK controllers and based upon personal injuries, deaths, property damage, lost profits, and other matters which buyer, its employees or sub-contractors are or may be to any extent liable. No warranties or implied are create with respect to the company's products except those expertly contained herein. The customer acknowledges the disclaimers limitations contained herein and relies on no other warranties or affirmations.

Dimensions [mm (inch)]

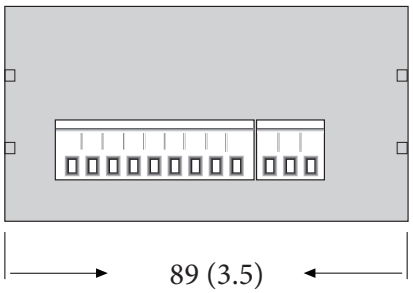
Front



Side



Back



Ordering Information

Indicators

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C - Low voltage
12 - 24 VDC/DC
D - Low voltage
24 - 48 VDC/DC
V - High voltage
230 VAC

R - Red
G - Green

E2 - 2 C/O relay
E3 - 2 N/O relay