

INSTRUCTION SHEET

Thank you for selecting INNO for your requirement.

This sheet describes the procedure and precautions required for installing and operating the product.

Kindly read this sheet before operating or installing the product. Store the sheet for future reference.

CAUTION FOR SAFETY

- ⓘ Please keep this sheet for review before use of unit.
- ⓘ Please observe the following:

WARNING
Serious injury may occur if instructions are not followed

CAUTION
Product failure or injury can occur if instructions are not followed

WARNING

1. This is not a safety product and is not to be used with machinery that requires use of safety control.
2. Do not disassemble or modify this unit. It may lead to electric shock/fire.

Do not connect touch the terminals when power is on.
RISK OF ELECTRIC SHOCK!

CAUTION

1. This unit shall not be used outdoors or in places with high sunlight, humidity or other harsh conditions.
2. Do not use the unit in places where there is flammable or explosive gas.
3. Do not use this unit beyond rated power.
4. Please check the unit for wrong wiring before power on.
5. Do not use this unit in places where there is vibration or impact.
6. Do not use water or oil based detergent for cleaning the unit.
7. Do not use unit in places with high EM noise as it may lead to product malfunction.
8. Do not use excessive force to tighten the unit and do not hammer the unit.
9. Please process it as industrial waste and dispose responsibly.

SPECIFICATIONS

*Models	DMP-R_	DMP-C_	DMP-M_
Power Supply	24 VAC/DC, 100-240 VAC/ DC ±10%		
Power Consumption	35mA at 220 VAC		
Signal Input	TC, RTD, 0-50mV, 4-20mA, 0-10V, 0-400Ω		
Auxiliary Voltage Output	24 VDC, 30mA		
Output Type	2 Relay	2 Relay, Current	2 Relay, Current, RS 485
Control Output Specification	Relay	250 VAC, 1 A (Resistive Load)	
	Current	4~20mA Current Output, Load resistance 600Ω max.	
	Communication	RTU Modbus via RS-485	
PV Display	4 digit, 7 Segment 1" RED LED		
SV Display	4 digit, 7 Segment 0.3" GREEN LED		
Display Range	- 1999 to 9999		
Sampling Time	min. 16.6ms		
Dielectric Strength	At power terminals 2000 VAC, 50Hz, 1 min		
Ambient Temperature	Operation: 0° ~ 50°C; Storage: -10° ~ 60°C (non-freezing; non-condensing)		
Ambient Humidity	Operation: 45 ~ 80% RH; Storage: 25 ~ 85% RH (non-condensing)		
Protection Class	IP20, Front panel IP65		
Weight	approx. 150 grams		
Material	Front Panel: PU Cladding Housing: ABS or Equiv.		

*For details on Customized/ Special Models contact Seller

PRECAUTION FOR SAFE USE

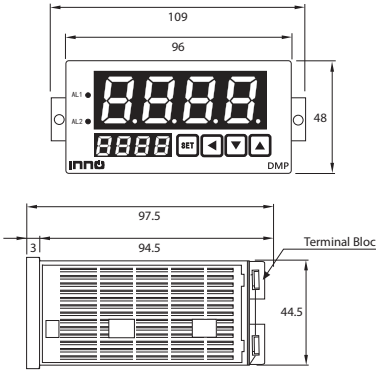
1. Provide sufficient space around the unit to allow for heat dissipation.
2. If several units are mounted side by side or vertically, the heat dissipation will cause the internal temperature of the products to rise. Compensate for the same by provide a cooling fan.
3. Install the product horizontally.
4. Mount to a panel with 1~8mm thickness only.
5. In order to prevent inductive noise, wire the lines connected to the product separately from the power lines.
6. Allow the product to operate without load for at least 15 minutes.
7. Do not connect anything to the unused terminals.
8. Install an external circuit breaker or switch that conforms to IEC60947-1 and IEC60947-3 requirements and label them clearly so that the operator can quickly turn OFF power.
9. Use specified size of crimp terminals: M3, width: 5.8mm max.
10. Avoid use of bare wire for connection. If used length of exposed wire is to be between 6~8mm.

CAUTION FOR SAFETY

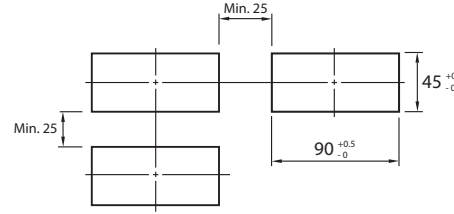
CAUTION

1. Do not allow pieces of metal, wire clippings or metal shavings from installation to enter the product. Doing so may result in product failure.
2. Do not disassemble the unit when connected to power supply.
3. Do not use the equipment for measurements within measurement categories II, III, IV (according to IEC61010-1). Doing so may result in unexpected operation and may cause damage to equipment/personnel.
4. Tighten the screws on the terminal block securely using the correct amount of torque. Loose screws may cause improper operation.
Terminal Block Screws Tightening Torque = 0.43 ~ 0.58 Nm

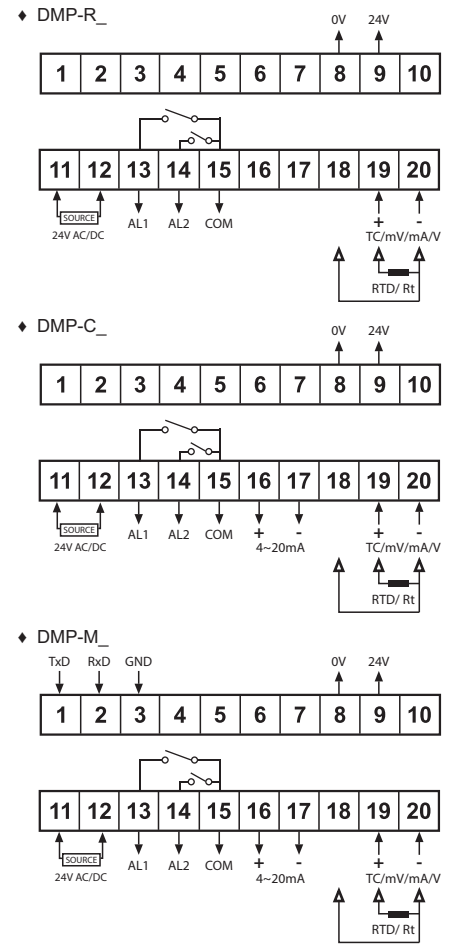
DIMENSIONS



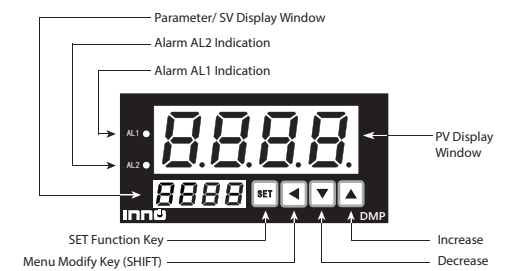
Panel Cut-out



CONNECTION DIAGRAM

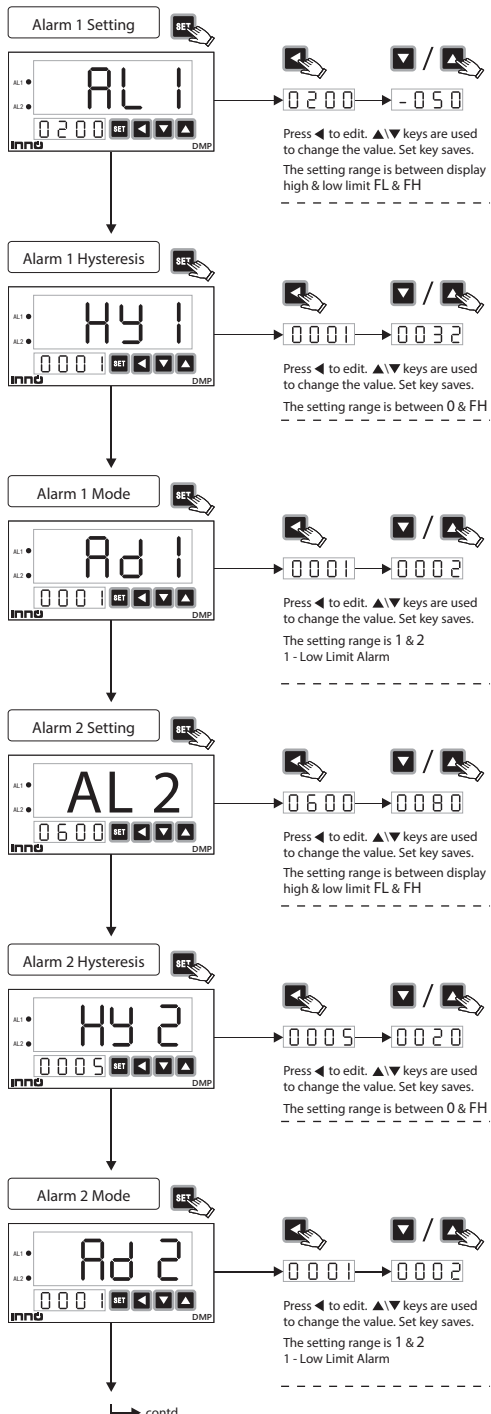


NOMENCLATURE

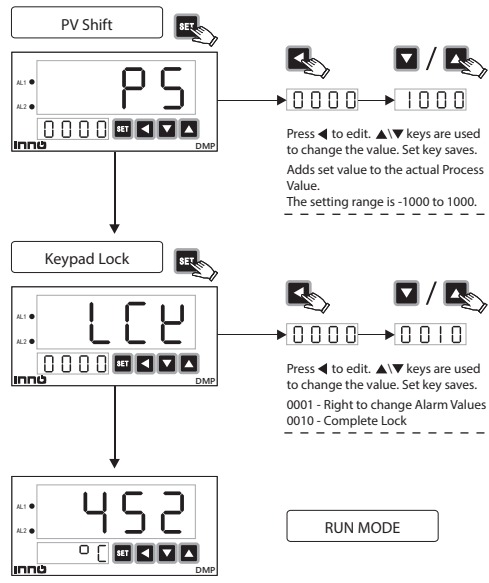


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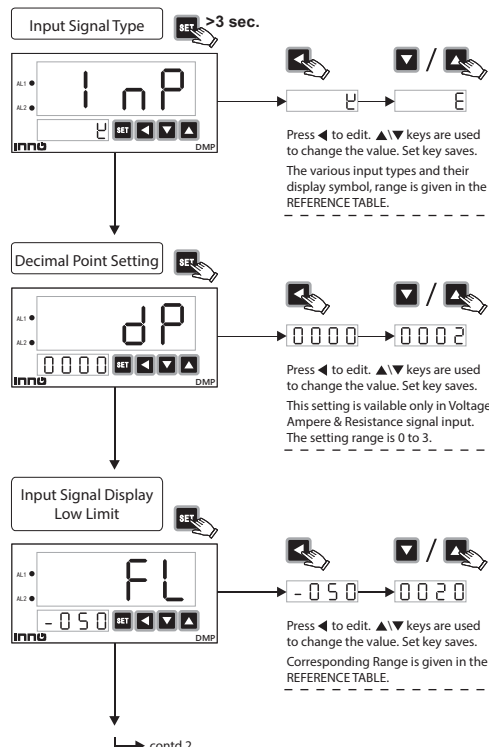
BASIC SETTING MODE



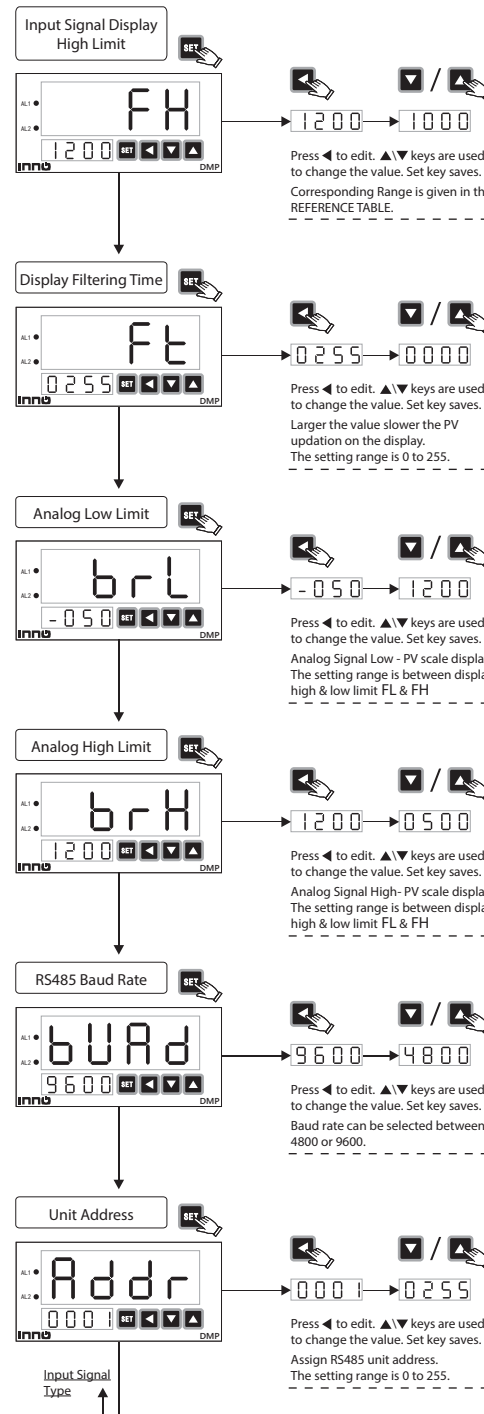
BASIC SETTING MODE (Contd...)



ADVANCED SETTING MODE

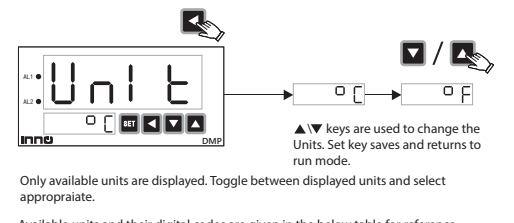


ADVANCED SETTING MODE (Contd 2...)



NOTE:
Press and hold the SET key for more than 3 seconds to return to RUN mode from any setting position.

UNITS SETTING MODE



Only available units are displayed. Toggle between displayed units and select appropriate.

Available units and their digital codes are given in the below table for reference

Code	Symbol	Detail
ñ	M	Meter
ċñ	cm	Centimeter
ññ	mm	Millimeter
ċċ	kg	Kilogram
ċ	g	Gram
ñċ	mg	Milligram
ñPR	Mpa	Mega Pascal
PR	pa	Pascal
bR	bar	Bar
ñbR	Mbar	Milli Bar
n	N	Newton
ŵ	W	Watt
ċŵ	KW	Kilowatt
rPñ	RPM	RPM (Speed)
Hz	Hz	Hertz
ċHz	KHz	Kilo Hertz
ñV	mV	milli Volt
V	V	Volt
ċV	KV	Kilo Volt
ñA	mA	Milli Amps
A	A	Amps
ċA	KA	Kilo Amps
r	Ω	Ohm
ċr	KΩ	Kilo Ohms
°C	°C	Degree Centigrade
°F	°F	Degree Fahrenheit

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REFERENCE TABLE FOR INPUT PARAMETERS

Code	Input Type	Measuring Range	Resolution	Accuracy	Input Resistance
K	K	-20 ~ 1200 °C	1 °C	±0.5% FS ±3 digits	> 100 KΩ
J	J	0 ~ 1200 °C	1 °C	±0.5% FS ±3 digits	> 100 KΩ
E	E	0 ~ 850 °C	1 °C	±0.5% FS ±3 digits	> 100 KΩ
T	T	-50 ~ 400 °C	1 °C	±0.5% FS ±3 digits	> 100 KΩ
B (spl. order)	B (spl. order)	600 ~ 1800 °C	1 °C	±0.5% FS ±3 digits	> 100 KΩ
R (spl. order)	R (spl. order)	500 ~ 1600 °C	1 °C	±0.5% FS ±3 digits	> 100 KΩ
S (spl. order)	S (spl. order)	-10 ~ 1600 °C	1 °C	±0.5% FS ±3 digits	> 100 KΩ
N	N	-50 ~ 1200 °C	1 °C	±0.5% FS ±3 digits	> 100 KΩ
PT100	PT100	-199.9 ~ 650.0 °C	0.1 °C	±0.5% FS ±3 digits	(0.2mA)
CU50	CU50	-50.0 ~ 150.0 °C	0.1 °C	±0.5% FS ±3 digits	(0.2mA)
CU100	CU100	-50.0 ~ 150.0 °C	0.1 °C	±0.5% FS ±3 digits	(0.2mA)
0~50mV	0~50mV	0~50mV	1 Digit	±0.5% FS ±3 digits	> 100 KΩ
4~20mA	4~20mA	0~20mA	1 Digit	±0.5% FS ±3 digits	< 150 Ω
0~10V	0~10V	0~10V	1 Digit	±0.5% FS ±3 digits	> 47 KΩ
0~400Ω	0~400Ω	0~400Ω	1 Digit	±0.5% FS ±3 digits	> 100 KΩ

RS-485 COMMUNICATION PARAMETERS

The RS-485 communication type controllers can run RS-485 half duplex mode. Read function code is 0x03, write function code is 0x10, 16-bit CRC checking is applied.

Start Bit	Data Bit	Stop Bit	Check Bit
1	8	2	None

• **Read Multiple Registers** Eg: Host reads float number AL1 (The value of Alarm 1 is 14.5). The address code of AL1 - 0x0000, float (4 bit/ 2 register). Reference IEEE-754 standard hexadecimal 16 result of the decimal float number is 0x66667641.

Request from Host (Read Multiple Registers)							
1	2	3	4	5	6	7	8
Unit Address	Function Code	Start Address Hi	Start Address Lo	Data Length Hi	Data Length Lo	CRC Code Lo	CRC Code Hi
0x01	0x03	0x00	0x00	0x00	0x02	0xC4	0x0B

Correct answer from Slave Unit (Write Multiple Registers)								
1	2	3	4	5	6	7	8	9
Unit Address	Function Code	Data Byte No.	Data 1 High byte	Data 1 Low byte	Data 2 High byte	Data 2 Low byte	CRC Code Lo	CRC Code Hi
0x01	0x03	0x04	0x66	0x00	0x48	0x43	0x8D	0xC2

• **Write Multiple Registers** Eg: Host reads float number AL1 (The value of Alarm 1 is 60). The address code of AL1 - 0x0000, float (4 bit/ 2 register). Reference IEEE-754 standard hexadecimal 16 result of the decimal float number is 0x66667641.

Request from Host (Read Multiple Registers)												
1	2	3	4	5	6	7	8	9	10	11	12	13
Unit Address	Function Code	Start Address Hi	Start Address Lo	Data Length Hi	Data Length Lo	Data byte No.	Data 1 High byte	Data 1 Low byte	Data 2 High byte	Data 2 Low byte	CRC Code Lo	CRC Code Hi
0x01	0x10	0x00	0x00	0x00	0x02	0x04	0x00	0x00	0x16	0x44	0xFD	0xFC

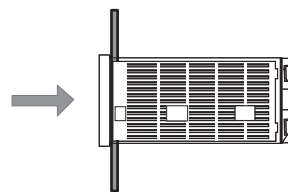
Correct answer from Slave Unit (Write Multiple Registers)							
1	2	3	4	5	6	7	8
Unit Address	Function Code	Start Address Hi	Start Address Lo	Data Length Hi	Data Length Lo	CRC Code Lo	CRC Code Hi
0x01	0x10	0x00	0x00	0x00	0x02	0x41	0xC8

MODBUS REGISTERS

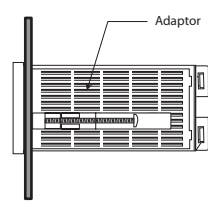
SNo.	Register No.	Function	Data Type	Data Number	Com. Right	Remark
0	0x0000	Alarm 1 Setting	Float	4	Read, Write	-
1	0x0001	Alarm 1 Hysteresis	Float	4	Read, Write	E ①
2	0x0002	Alarm 1 Mode	Float	4	Read, Write	-
3	0x0003	Alarm 2 Setting	Float	4	Read, Write	-
4	0x0004	Alarm 2 Hysteresis	Float	4	Read, Write	E ①
5	0x0005	Alarm 2 Mode	Float	4	Read, Write	-
6	0x0009	PV Shift	Float	4	Read, Write	-
7	0x000A	Input Signal Type	Float	4	Read, Write	E ②
8	0x000B	Input Signal Display Low Limit	Float	4	Read, Write	-
9	0x000C	Input Signal Display High Limit	Float	4	Read, Write	-
10	0x000D	Decimal Point Setting	Float	4	Read, Write	-
11	0x000E	Display Filtering Time Set Value	Float	4	Read, Write	-
12	0x000F	Analog Low Limit Value	Float	4	Read, Write	-
13	0x0010	Analog High Limit Value	Float	4	Read, Write	-
14	0x0012	Units Setting	Float	4	Read, Write	E ③
15	0x0013	Baud Rate	Float	4	Read, Write	-
16	0x0014	Unit Address	Float	4	Read, Write	-
17	0x0015	Lock Setting	Float	4	Read, Write	-
18	0x0016	Menu Shield	Float	4	Read, Write	-
19	0x0032	Measuring Value	Float	4	Read	-
20	0x0033	Alarm 1 Status	Float	4	Read	E ①
21	0x0034	Alarm 2 Status	Float	4	Read	E ①

MOUNTING INSTRUCTIONS

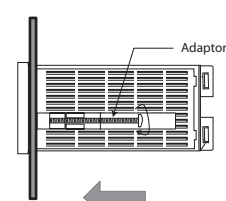
1) Insert the meter into the panel cut out.



2) Insert the panel adapter to the grooves in the left and right side of the indicator.



3) Tighten the adapter screw in the clockwise direction till the meter is secured to the panel.



REMARK NOTE:

E ①: Alarm Mode

Alarm Type	Low Limit Alarm	High Limit Alarm
Reference	1	2

Alarm Status	ON	OFF
Reference	1	2

E ②: Input Signal (Input parameter meter)

E ③: Code and Values (ref. Units Setting Table)

ERROR CODES

HHHH - Input not connected/ Over Limit. Check input signal and ambient working temperature

LLLL - Input not connected/Under Limit. Check input signal and ambient working temperature

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