PROGRAMMABLE SIGNAL ISOLATOR — MSI7P

UNIVERSAL INPUT, 5 OUTPUTS, INTEGRAL LCD DISPLAY

- Universal input, programmable ranges, etc.
- 3/4/5 x 4~20 mA (or voltage) outputs
- Input/supply/outputs mutually isolated
- Supply : 85~265 V AC/DC or 20~35 V DC
- Calibration through keys - no trimpots
- 2 x 16 character LCD display
- RS485/MODBUS RTU option

SPECIFICATIONS

All specifications at ambient of 25 °C, unless specified otherwise

INPUT

Input type	
Standard	
Thermocouple	K, J, E, B, R, S, T, N
RTD, 3-wire	Pt50, Pt100, Cu53
Linear voltage	0~50 mV
Linear current	4~20 mA, 0~20 mA
Transmitter supply	Available if 4 or less outputs present
Non - Std (Chargeable option)	
RTD, 3-wire	Pt-SPL (Pt200, Pt500, Pt1000)
Linear voltage	0~100 mV, 0~200 mV, 0~1 V, 0~5 V, 0~10 V, etc. Note : Standard inputs are always available. Non-standard inputs require factory changes. If user changes input type, the instrument may, for some input types, require recalibration. For non-std input, give details
Current input with square rooting	4~20 mA
Other inputs	Contact sales
Transmitter supply	22 V DC, nominal, 30 mA max
Input type selection	
Standard	Through front panel keys
Non-standard	Through front panel keys and DIP switches below detachable top panel
Display range limits	See Table 1

MONITORING

Sensor break protection	User programmable

ACCURACY

Linearity & calibration	See Table 1
Cold junction compensation	Automatic (for thermocouples)
Temperature effect on accuracy	± 0.02% of span per °C
Supply voltage effect	± 0.002% of span / V
Supply ripple effect, 50/60 hz, 5 Vp - p	± 0.01% of span

OUTPUTS

No. of outputs	3, 4 or 5
Output type	
Standard	
Current	0~20 mA, 4~20 mA, 20~0 mA, 20~4 mA
Load for current output	0~500Ω
Voltage	0~1 V DC, 0~5 V DC, 0~10 V DC / user specified
Load for voltage output	> 10 kohms
Non - standard	Please specify Note : For EACH output, one of the Std or Non-standard outputs MUST be specified

CALIBRATION

ZERO and SPAN through front panel keys for each output (no trimpots used)

ISOLATION

Between input, supply and any output, and between any two outputs	a) 1000 V AC RMS, 50 hz / 1 minute b) 250 V AC RMS, 50 hz, continuous

POWER SUPPLY

Supply voltage	85~265 V AC/DC, 50 hz OR 20~35 V DC

COMMUNICATION

Port	RS485
Protocol	Modbus RTU
Slave ID	User programmable
Baud rate	9600

ENCLOSURE

Material	ABS plastic
Dimensions	100(W) x 75(H) x 110(D)
Mounting	Snap on for 35 mm DIN rail to DIN 46277
Connection, single/ stranded wires	2.5 mm^2, AWG 14
Protection	IP20

TEMPERATURE, HUMIDITY

Ambient, storage	-22 ~ +85 °C
Ambient, operation	0 ~ 50 °C
Relative humidity	0 ~ 95%

OTHER

Programming	With 3 keys & built-in display
Keypad	Tactile, 3 keys
Display	2x16 character LCD display

PROGRAMMABLE PARAMETERS

Input type	See 'Input types'
Input Hi	For linear voltage inputs
Input Lo	For linear voltage inputs
Unit	°C, °F, °K, EU, none, BAR, PSI, pH, Pa, %RH, rpm, %, Ω, V, mV, A, mA, W, M, cm, mm, G, KG, mmHg, L/H, CAL
Resolution	1, 0.1, 0.01, 0.001
Enable/Disable output	Provided for each output
Sensor break	Upscale, Downscale for each input
Preset out	Sensor break output value
Digital filter	Provided

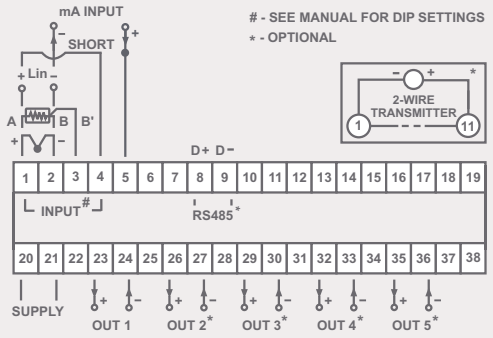
PROGRAMMABLE SIGNAL ISOLATOR — MSI7P

UNIVERSAL INPUT, 5 OUTPUTS, INTEGRAL LCD DISPLAY

TABLE 1

SENSOR / INPUT	RANGE LIMITS (°C / EU)		RANGE IN WHICH ACCURACY IS SPECIFIED		DISPLAY		OUTPUT	
	LOW SCALE	HIGH SCALE	LOW SCALE	HIGH SCALE	TYPICAL ACCURACY AT 30 °C (°C / EU / % SPAN)	WORST CASE ACCURACY (°C / EU / % SPAN)	TYPICAL ACCURACY AT 30 °C (°C / EU / % SPAN)	WORST CASE ACCURACY (°C / EU / % SPAN)
Pt - 6% Rh / Pt - 30% RH (B)	400	1820	400	1820	± 3°C	± 6	See Note 1	
Chromel / Constantan (E)	-270	800	0	800	± 1°C	± 3	See Note 1	
Iron / Constantan (J)	-210	760	0	760	± 1°C	± 3	See Note 1	
Chromel / Alumel (K)	-270	1372	-50	1200	± 1°C	± 3	See Note 1	
Nicrosil / Nisil (N)	-270	1300	-50	1200	± 1°C	± 3	See Note 1	
Pt / Pt - 13% Rh (R)	0	1760	0	1760	± 2°C	± 6	See Note 1	
Pt / Pt - 10% Rh (S)	0	1760	0	1760	± 2°C	± 6	See Note 1	
Copper / Constantan (T)	-270	400	-200	400	± 1°C	± 4	See Note 1	
Pt50, Pt100, Pt-SPL (Pt200, Pt500, Pt1000) 3-wire	-200	850	-200	400	± 0.2°C	± 1.0	See Note 1	
Cu53	0	180	0	180	± 0.2°C	± 0.5	See Note 1	
Linear (0~10 mV, 0~50 mV, 0~100 mV, 0~200 mV, 0~1 V, 0~5 V, 0~10 V, 0~20 mA, 4~20 mA)	-999	9999	-999	9999	± 5 EU	± 11 EU	± 0.05%	± 0.1%
Linear (4~20 mA) with square root	0	9999	0	9999	± 5 EU	± 11 EU	± 0.05%	± 0.1%

CONNECTION DIAGRAM



Note 1
For Temperature inputs, the output accuracy error corresponds to [display accuracy ±0.1% span].

Example
Input : Thermocouple K
Range : 0~1000°C

Here, the **typical** display accuracy is ± 1°C.
Hence, the output error is $\frac{\pm 1°C}{1000°C} \times 16000\ \mu A \pm 0.1\%$ of span
= ±16 µA ±16 µA
= ±32 µA
Use worst case display accuracy for worst case output error.

ORDERING INFORMATION

2117 | A | B | C | D | E | F | G

A	Output1 type
0	0/4~20 mA
1	0~1 V DC
2	0~5 V DC
3	0~10 V DC
4	Other *

B	Output2 type
0	None
1	0/4~20 mA
2	0~1 V DC
3	0~5 V DC
4	0~10 V DC
5	Other *

C	Output3 type
0	None
1	0/4~20 mA
2	0~1 V DC
3	0~5 V DC
4	0~10 V DC
5	Other *

D	Output4 type
0	None
1	0/4~20 mA
2	0~1 V DC
3	0~5 V DC
4	0~10 V DC
5	Other *

E	Output5 type
0	None
1	0/4~20 mA
2	0~1 V DC
3	0~5 V DC
4	0~10 V DC
5	Other *

F	Communication
0	Not Provided
1	RS485

G	Supply voltage
0	85~265 V AC
1	20~35 V DC

* Please specify

radix®

RADIX ELECTROSYSTEMS PVT LTD
EL-135/136/137, Electronics Zone
TTC Indl. Area, MIDC, Mahape
Navi Mumbai - 400 710, India
+ 91 22 42537777 I sales@radix.co.in

OTHER ENQUIRIES
Instruments sales@radix.co.in
Sensors sensors@radix.co.in
Gauges gauges@radix.co.in
Automation automation@radix.co.in
Level level@radix.co.in

CAT#134R7/310316/A