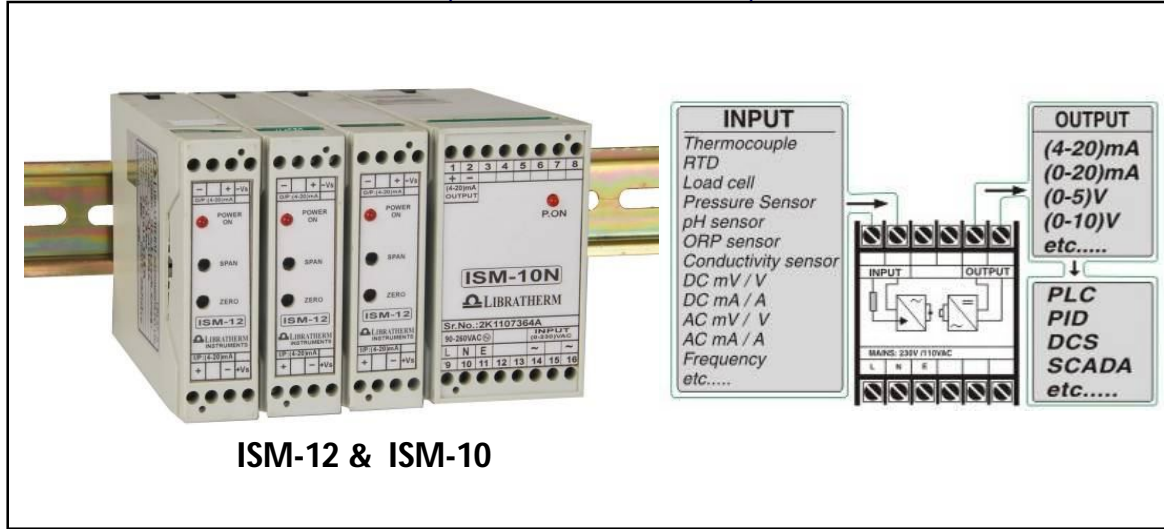


## Signal Convertor / Isolator Modules

(Product Code 19.1 To 19.5)



### Model Wise Description:

Sr. No.	Model	Product Description	Size w x h x d (mm.)
19.1	ISM-10	Single input & Single output operating on 230VAC supply	45 x 75 x 100
19.2	ISM-10-X	Single input & Multi output (X = 2, 3 or 4) 230VAC operated	45 x75 x 100
19.3	ISM-12	Single input & Single output operating on 24VDC supply	22 x 75 x 100
19.4	ISM-12-2	Single input & Two outputs operating on 24 VDC supply	22 x75 x 100
19.5	ISM-12-X	Single input & Multi output (X = 2, 3 or 4) - 24 VDC supply	45 x75 x 100
19.5.1	ISM-12-2-2	Two input and Two Output operating on 24VDC supply	45 x 75 x 100
19.5.2	ISM-12-2-4	Two input and Four Output operating on 24VDC supply	45 x 75 x 100

### Description:

Libratherm offers AC / DC Signal Convertor cum Isolator (Model: ISM-10), designed in 35 mm. DIN Rail compatible modules. These modules accepts AC/DC input signal and provides optically / galvanically isolated output in the form of (4-20)mA or (0-5)V or (0-10)V proportional to the input signal. Both the input and output levels have their grounds optically / galvanically isolated. Thus the process signals received from the Transducers or transmitters or Sensors can be directly connected through ISM-10 to the PLC, DCS or to any other electronics in the process industry accepting such signals, without any signal loss or ground line interference. The ZERO and SPAN presets are accessible to the user for onsite calibration and matching.

These modules operate on 230 VAC or 110 VAC supply or 24VDC. The module with single input and multiple parallel outputs (Model ISM-10-X and ISM-12-X) can also be provided to meet the process control requirement requiring simultaneous change of 2 to 4 outputs proportional to the single input variation. These modules are rugged, reliable, field proven and economically priced.

New model ISM-12-2-X for two input and two/four output is also available for V to V, V to I, I to I or I to V conversion.

These modules operate on 230 VAC or 110 VAC supply or 24VDC. The module with single input and multiple parallel outputs (Model ISM-10-X and ISM-12-X) can also be provided to meet the process control requirement requiring simultaneous change of 2 to 4 outputs proportional to the single input variation. These modules are rugged, reliable, field proven and economically priced.

### Features:

- ❖ Accepts AC/DC signal inputs and provides optically/galvanically isolated proportional analogue output.
- ❖ On site calibration facility-using ZERO/SPAN presets.
- ❖ Operates on 230VAC/110VAC or 24VDC.

### Applications:

- Interface of low-level signals coming from the sensors or transducers from the plant to DCS, SCADA, PLC or PID process controllers without ground line interferences.
- Signal multiplier – single input and 2 to 4 outputs

### Technical Specifications:

<b>Input</b>	1) DC input - RTD (Pt-100) / 2 or 3 wire or Thermocouple (Type to be specified), or mV, mA input or Load cell, pressure sensor, pH/ORP sensor etc. generating DC current or voltage. 2) AC input - Current (through external CT) (0-1)A or (0-5)A or Voltage (0-110)VAC or (0-230)VAC. 3) Frequency input DC levels of clock pulses of max. 10KHZ. @ (12-24)VDC
<b>Range</b>	User may specify the required temperature range (for RTD or T/C input). For other inputs the required calibration range can be specified.
<b>Output</b>	(4-20) mA, (0-20) mA, (0-1) VDC, (0-5) VDC, (0-10) VDC, Frequency (0-1)KHz, (0-5)KHz, (0-10)KHz etc. proportional to the specified input range. For current output, RL (max.) = 500 Ohms. For voltage output, RL (min) = 100K Ohms.
<b>No. Of Outputs</b>	Maximum 4 parallel independent outputs can be provided for single input. Each output can be of different signal type.
<b>Accuracy</b>	For Thermocouple and RTD Input, the calibration of output is done for the best straight line fit to give accuracy of +/- 0.5% to +/-1% of the range. For other input the linearity depends on the input signal, where output accuracy is absolute to the input.
<b>Cold junction Compensation</b>	Automatic for Thermocouple Input.
<b>Calibration</b>	On site calibration facility through ZERO and SPAN presets accessible to the user.
<b>Isolation</b>	Input and Output are optically isolated for DC inputs and galvanically isolated for the AC inputs. Power supply is also isolated from Input and Output.(3 way isolation)
<b>Isolation Voltage</b>	Greater than 1 KV.
<b>Mounting</b>	35-mm. DIN rail mounting ABS enclosure.
<b>Supply</b>	AC Supply : 90-240VAC, 50/60Hz <b>or</b> DC Supply : 24VDC +/- 10%.
<b>Size</b>	As given in the table.

### Input and Range Selection Table:

Code	Input	Range (°C)	
A1	J type : Fe/Con thermocouple	0 to 400 °C	A15 (0-20) mA
A2	J type : Fe/Con thermocouple	0 to 760 °C	A16 (4-20) mA
A3	K type : Cr/Al thermocouple	0 to 400 °C	A17 (0-5)VDC
A4	K type : Cr/Al thermocouple	0 to 600 °C	A18 (0-10) VDC
A5	K type : Cr/Al thermocouple	0 to 800 °C	A19 (0-75)mVDC
A6	K type : Cr/Al thermocouple	0 to 1000 °C	A20 (0-50)mVDC
A7	K type : Cr/Al thermocouple	0 to 1200 °C	A21 (0-5)AAC
A8	Pt-100 (Alpha = 0.00385) DIN 43760	-100 to +100 °C	A22 (0-230)VAC
A9	Pt-100 (Alpha = 0.00385) DIN 43760	-50 to +50 °C	A23 (0-110)VAC
A10	Pt-100 (Alpha = 0.00385) DIN 43760	0 to 50 °C	A24 FREQ 0-1KHZ
A11	Pt-100 (Alpha = 0.00385) DIN 43760	0 to 100 °C	A25 FREQ 0-5KHZ
A12	Pt-100 (Alpha = 0.00385) DIN 43760	0 to 150 °C	A26 FREQ 0-10KHZ
A13	Pt-100 (Alpha = 0.00385) DIN 43760	0 to 200 °C	A27 pH sensor
A14	Pt-100 (Alpha = 0.00385) DIN 43760	0 to 400 °C	A28 LOAD CELL
			A29 Any other please specify in the Remark column

### Ordering Information:

MODEL	A- INPUT and RANGE	B- Output 1	C- Output 2	D- Output 3	E- Output 4
ISM-10	Any one of <b>A1</b> to <b>A29</b> as per the above table	<b>B1-</b> (0-20) mA <b>B2-</b> (4-20) mA <b>B3-</b> (0-5)VDC <b>B4-</b> (0-10)VDC	<b>C1-</b> (0-20) mA <b>C2-</b> (4-20) mA <b>C3-</b> (0-5)VDC <b>C4-</b> (0-10)VDC	<b>D1-</b> (0-20) mA <b>D2-</b> (4-20) mA <b>D3-</b> (0-5)VDC <b>D4-</b> (0-10)VDC	<b>E1-</b> (0-20) mA <b>E2-</b> (4-20) mA <b>E3-</b> (0-5)VDC <b>E4-</b> (0-10)VDC
ISM-10-X (X = 2, 3 or 4)					
ISM-12					
ISM-12-2					
ISM-12-X (X = 2, 3 or 4)					

### Example:

MODEL	A- INPUT and RANGE	B- Output 1	C- Output 2	D- Output 3	E- Output 4
ISM-10	A3	B2	00	00	00
ISM-12-2	A16	B2	C4	00	00
ISM-10-3	A19	B2	C2	D2	00
ISM-12-4	A18	B1	C2	D3	E4

Example	Ordering Code	Description
1	ISM-10-A3-B2-00-00-00	This is signal isolator or convertor for K type thermocouple and calibrated in the range of 0 to 400°C with 4-20mA output, where 4mA = 0°C and 20mA = 400°C operating on AC supply.
2	ISM-12-2-A16-B2-C4-00-00	This is signal isolator and repeater for 4-20mA input and 1 <sup>st</sup> output of 4-20mA and 2 <sup>nd</sup> output of 0-10VDC, operating on 24VDC
3	ISM-10-3-A19-B2-C2-D2-00	This is signal isolator and repeater for 0-75mVDC input and three outputs of 4-20mA, operating on AC supply.
4	ISM-12-4-A18-B1-C2-D3-E4	This is signal isolator and repeater for 0-10VDC input and 1 <sup>st</sup> output of 0-20mA, 2 <sup>nd</sup> output of 4-20mA, 3 <sup>rd</sup> output of (0-5)VDC and 4 <sup>th</sup> output of (0-10)VDC, operating on 24VDC.

REMARK :