

TRANSMITTERS

Model : TR-xxxxxx

ISO-9001, CE, IEC1010

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- * transmitters :
 - Humidity Light
 - pH Conductivity
 - Dissolved Oxygen
 - Vibrattion
 - Sound Level
 - Temperature (type K)
 - Temperature (Pt 100 Ω)
 - RPM
 - Frequency
 - Load cell
 - Potential Meter Pressure
 - ACV ACA DCV DCA
 - 2000 A DC/AC Clamp
 - WATT VAR
 - Power Factor
- * 4 - 20 mA
- Controller/Indicator

Lutron

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The Art of Measurement

TRANSMITTERS

Humidity, Light, pH, Dissolved Oxygen, Conductivity, Vibration

Model : TR-xxxxxx

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Item	Humidity Transmitter	Anemometer Transmitter	Light Transmitter	pH Transmitter	Dissolved Oxygen Transmitter	Conductivity Transmitter	Vibration Transmitter
Model	TR-HUM1A4	TR-AMT1A4	TR-LXT1A4	TR-PHT1A4	TR-DOT1A4	TR-CDT1A4	TR-VBT1A4
Measure Range	10 %RH to 95 %RH	0.4 m/s to 30 m/s	Range 1 : 0-2,000 Lux Range 2: 2,000-20,000 Lux Range 3 : 20,000-50,000 Lux	0 - 14 pH	Range 1 : CAL. Range 2 : DO : 0 -20 mg/L	Range 1 : 0 - 200 uS Range 2: 0.2 - 2 mS Range 3 : 2 - 20 mS	Acc. : 0.5-200 Velocity : 0.5-200 mms
Output	4 - 20 mA 10 %RH = 5.6 mA 50 %RH = 12 mA 95 %RH = 19.2 mA	4 - 20 mA 0 m/s = 4 mA 0.4 m/s = 4.21 mA 10 m/s = 9.33 mA 30 m/s = 20 mA	4 - 20 mA Range 1 : 0 Lux = 4 mA 1,000 Lux = 12mA 2,000 Lux =20 mA Range 2: 0 Lux = 4 mA 2,000 Lux=5.6mA 20,000 Lux=20mA Range 3 : 0 Lux = 4 mA 20,000 Lux = 10.4 mA 50,000 Lux = 20 mA	4 - 20 mA 0 pH = 4 mA 7 pH = 12 mA 14 pH = 20 mA	4 - 20 mA Range 1 : 20.9 % = 12 mA Range 2: DO : 0 mg/L = 4 mA 10 mg/L = 12 mA 20 mg/L = 20 mA	4 - 20 mA Range 1 : 0 uS = 4 mA 200uS = 20mA Range 2 : 0 mS = 4 mA 0.2 mS=5.6mA 2 mS = 20 mA Range 3 : 0 mS = 4 mA 2 mS = 5.6mA 20 mS = 20 mA	4 - 20 mA Acc. : 0 = 4 mA 0.5 m/s ² = 4.4 mA 200 = 20 mA Velocity : 0 mm/s = 4 mA 0.5 mm/s = 4.4 mA 200mm/s = 20 mA
External Adjustment	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR
Power Supply	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz
Operation Temperature	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F
Operation Humidity	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH
Accessory Included	Humidity probe	Anemometer probe (Vane type)	Light probe	<i>Electrode is optional.</i>	DO Probe Electrolyte Diaphragms	Conductivity Prob	Vibration Sensor Magnetic base
Optional Accessories	Humidity calibrators : RHA-33A RHA-75A	None	None	pH Electrode PE-03 PE-11 PE-01	*Probe-filling electrolyte *Spare diaphragms	1.413 mS standard solution	None
Mounting	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall
Case	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic
Dimension	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1
Others	Separate probe with plug	Separate probe with plug	Separate probe with plug	* High input impedance * BNC input socket	Separate probe with plug	Separate probe with plug	Spectrum meet ISO 2954 10 Hz-1 kHz

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TRANSMITTERS

Pressure Transmitter

Model : TR-xxxxxx

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<i>Item</i>	Pressure Transmitter						
<i>Model</i>	TR-PST1A4 -2BAR	TR-PST1A4 -5BAR	TR-PST1A4 -10BAR	TR-PST1A4 -20BAR	TR-PST1A4 -50BAR	TR-PST1A4 -100BAR	TR-PST1A4 -400BAR
<i>Measure Range</i>	0 - 2 bar	0 - 5 bar	0 - 10 bar	0 - 20 bar	0 - 50 bar	0 - 100 bar	0 - 400 bar
<i>Output</i>	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA
	0 bar = 4 mA	0 bar = 4 mA	0 bar = 4 mA	0 bar = 4 mA	0 bar = 4 mA	0 bar = 4 mA	0 bar = 4 mA
	1 bar = 12 mA	2.5 bar = 12 mA	5 bar = 12 mA	10 bar = 12 mA	25 bar = 12 mA	50 bar = 12 mA	200 bar = 12 mA
	2 bar = 20 mA	5 bar = 20 mA	10 bar = 20 mA	20 bar = 20 mA	50 bar = 20 mA	100 bar = 20 mA	400 bar = 20 mA
<i>External Adjustment</i>	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR
<i>Power Supply</i>	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz
<i>Operation Temperature</i>	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F
<i>Operation Humidity</i>	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH
<i>Accessory Included</i>	2 bar pressure sensor	5 bar pressure sensor	10 bar pressure sensor	20 bar pressure sensor	50 bar pressure sensor	100 bar pressure sensor	400 bar pressure sensor
<i>Optional Accessories</i>	None	None	None	None	None	None	None
<i>Mounting</i>	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall
<i>Case</i>	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic
<i>Dimension</i>	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1
<i>Others</i>	Separate pressure probe	Separate pressure probe	Separate pressure probe	Separate pressure probe	Separate pressure probe	Separate pressure probe	Separate pressure probe

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TRANSMITTERS

Sound, Temp.(type K), Temp.(Pt 100), RPM, Hz, Load cell, Potential Meter

Model : TR-xxxxxx

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Item	Sound level Transmitter	Temperature (type K)	Temperature (Pt 100 ohm)	RPM Transmitter	Frequency Transmitter	Load cell Transmitter	Potential Meter Transmitter
Model	TR-SLT1A4	TR-TMK1A4	TR-TMP1A4	TR-RPM1A4	TR-HZT1A4	TR-LDT1A4	TR-PTT1A4
Measure Range	Range 1 : 30 - 80 dB Range 2 : 50 - 100 dB Range 3 : 80 - 130 dB	0 to 500 °C	-100 °C to 400 °C	Range 1 : 100-2,000RPM Range 2 : 1,000 RPM - 20,000 RPM	45 Hz to 65 Hz (50-300 ACV) * Isolated	Available for load cell 1 - 2 mV/V (Variable exciting voltage DC 4V-12V)	200 ohm to 50 Kohm * Excitation voltage is DC 9V
Output	4 - 20 mA Range 1 : 30 dB:7.69 mA 80 dB:13.84mA Range 2 : 50dB:10.15 mA 100dB:16.3mA Range 3 : 80dB:13.84mA 130 dB:20 mA	4 - 20 mA 0 °C = 4 mA 250 °C = 12 mA 500 °C = 20 mA	4 - 20 mA -100 °C = 4 mA 0 °C = 7.2 mA 400 °C = 20 mA	4 - 20 mA Range 1 : 100 RPM = 4.8 mA 1,000 RPM = 12 mA 2,000 RPM = 20 mA Range 2 : 1,000 RPM = 4.8 mA 10,000 RPM = 12 mA 20,000 RPM = 20 mA	4 - 20 mA 45 Hz = 4 mA 50 Hz = 8 mA 60 Hz = 16 mA 65 Hz = 20 mA	4 - 20 mA 0 weight = 4 mA 1/2 weight = 12 mA F.S. weight = 20 mA	4 - 20 mA 0 ohm = 4 mA 1/2 load = 12 mA Full scale = 20 mA
External Adjustment	94 dB Cal. VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR
Power Supply	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz
Operation Temperature	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F	0 - 50 °C 32 - 122 °F
Operation Humidity	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH
Accessory Included	Sound level probe	Type K probe is optional.	Pt 100 ohm probe is optional.	RPM sensor is optional.	None	Load cell is optional.	None
Optional Accessories	Sound calibrator SC- 941 SC-942	TP-01 TP-02A TP-03 TP-04	TP-100 TP- 100A	Proximity sensor:PX-01 Photo sensor:PI-06	None	200 g load cell 2 Kg load cell 5 Kg load cell 100 Kg load cell 150 Kg load cell	None
Mounting	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall
Case	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic
Dimension	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1
Others	Separate probe	Type K standard input socket	Four wires connection	*3 wires connection *Exciting voltage DC 12 V	Two wires input	Four wires connection	Three wires connection

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TRANSMITTERS

ACV, ACA, DCV, DCA

Model : TR-xxxxxx

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Item	DCA Transmitter					2000 A DC/AC Clamp Transmitter	
Model	TR-DCA1A4-200UA	TR-DCA1A4-2MA	TR-DCA1A4-20MA	TR-DCA1A4-200MA	TR-DCA1A4-2A	TR-DCA1A4-5A	TR-CLP1A4
Measure Range	0 - 200 μ A DC <i>* Isolated</i>	0 - 2 mA DC <i>* Isolated</i>	0 - 20 mA DC <i>* Isolated</i>	0 - 200 mA DC <i>* Isolated</i>	0 - 2 A DC <i>* Isolated</i>	0 - 5 A DC <i>* Isolated</i>	Range 1 : 0 - 200 A Range 2 : 0 - 2000 A <i>* Isolated</i>
Output	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA
	0 μ A DC = 4 mA 100 μ A DC = 12 mA 200 μ A DC = 20 mA	0 mA DC = 4 mA 1 mA DC = 12 mA 2 mA DC = 20 mA	0 mA DC = 4 mA 10 mA DC = 12 mA 20 mA DC = 20 mA	0 mA DC = 4 mA 100 mA DC = 12 mA 200 mA DC = 20 mA	0 A DC = 4 mA 1 A DC = 12 mA 2 A DC = 20 mA	0 A DC = 4 mA 2.5 A DC = 12 mA 5 A DC = 20 mA	Range 1 : 0 A = 4 mA 100 A = 12 mA 200 A = 20 mA Range 2 : 0 A = 4 mA 1000 A = 12mA 2000 A = 20mA
External Adjustment	94 dB Cal. VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR	ZERO VR SPAN VR
Power Supply	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz	90 - 260 ACV 50 Hz/60 Hz
Operation Temperature	0 - 50 $^{\circ}$ C 32 - 122 $^{\circ}$ F	0 - 50 $^{\circ}$ C 32 - 122 $^{\circ}$ F	0 - 50 $^{\circ}$ C 32 - 122 $^{\circ}$ F	0 - 50 $^{\circ}$ C 32 - 122 $^{\circ}$ F	0 - 50 $^{\circ}$ C 32 - 122 $^{\circ}$ F	0 - 50 $^{\circ}$ C 32 - 122 $^{\circ}$ F	0 - 50 $^{\circ}$ C 32 - 122 $^{\circ}$ F
Operation Humidity	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH	Less than 80 %RH
Accessory Included	None	None	None	None	None	None	200/2000 A inductive DC/AC clamp
Optional Accessories	None	None	None	None	None	None	None
Mounting	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall	Din rail or Wall
Case	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic	ABS plastic
Dimension	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1	See Fig. 1
Others	Two wires input, 500 mA fuse	Two wires input, 500 mA fuse	Two wires input, 500 mA fuse	Two wires input, 500 mA fuse	Two wires input, 2 Amp fuse	Two wires input, 6 Amp fuse	Separate 200/2000 A inductive DC/AC clamp

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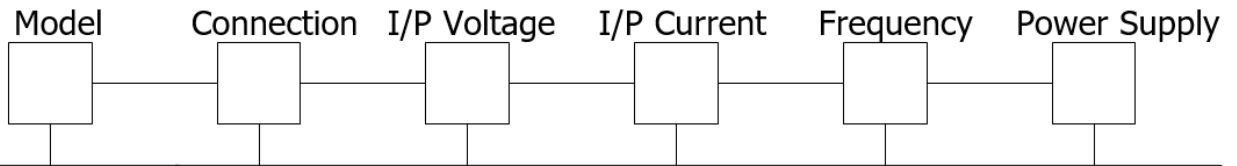
POWER TRANSMITTERS

WATT, VAR, Power Factor (2 phase/2 wires, 3 phase/3 wires, 3 phase/4 wires)

Model : TR-xxxxxx

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Order Code



Item	Model	Connection	Input Voltage	Input Current	Frequency	Power supply
WATT	TR-WAT	1 : 1P 2W	1 : 110 V	1 : 1 A	5 : 50 Hz	1 : 110 ACV
VAR	TR-VAR	3 : 3P 3W	2 : 220 V	5 : 5 A	6 : 60 Hz	2 : 220 ACV
PF	TR-PFT	4 : 3P 4W	3 : 380 V			

* PF = Power Factor P = Phase W = Wire

* 3P4W Input Voltage is specified to Line-Neutral voltage , for example 3P4W Input Voltage (Line-Neutral) is 220 ACV, then the Line-Line voltage is 380 ACV.

* Order code example : Item (WATT), Connection (3P 4W), Input Voltage (220V, Line-Neutral), Input Current (5 A), Frequency (50 Hz), Power Supply (220 ACV)/ The order code will be TR-WAT42552

Item

WATT Transmitter, VAR (apparent power) Transmitter, Power Factor (PF) Transmitter

Connection

1P 2W (1 phase 2 wires), 3P 3W (3 phase 3 wires), 3P 4W (3 phase 4 wires)

Input Voltage * Isolated

110 V Effective Range : 30 ACV - 150 ACV.

220 V Effective Range : 30 ACV - 300 ACV. * 3P4W Input Voltage is specified

380 V Effective Range : 40 ACV - 500 ACV. to Line-Neutral voltage.

Input Current * Isolated

1 A Effective Range : 0 - 1.5 A AC. 5 A Effective Range : 0 - 7.5 A AC.

Frequency

50 Hz, 60 Hz

Output of Watt, VAR Transmitter

4 - 20 mA, Zero output (No Load) = 4 mA, Full Load (Full Scale) output = 20 mA.

Full Load (Full Scale) value list of WATT & VAR transmitter

INPUT		1P2W	3P3W	3P4W
		WATT; VAR	WATT; VAR	WATT; VAR
100 V to 120 V	1 A	100	200	300
	5 A	500	1000	1500
200 V to 240 V	1 A	200	400	600
	5 A	1000	2000	3000
380 V to 440 V	1 A	400	800	1200
	5 A	2000	4000	6000

Output of Power Factor Transmitter

4 - 20 Ma

- 0.5 Power Factor value = 4 mA output

0 Power Factor value = 12 mA output

+ 0.5 Power Factor value = 20 mA output

Output Protection

Without damage for output open or short circuit..

Common Mode Rejection

≥ 120 dB, 50/60 Hz.

Operation Temperature Humidity

0 to 60 °C 32 - 140 °F

Less than 85 % RH (Non condensed).

Housing Material

ABS plastic, self-extinguishing to UL 94 V-0.

Size

120 H x 110 W x 80 L mm.

Mounting

Din rail or Wall.

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