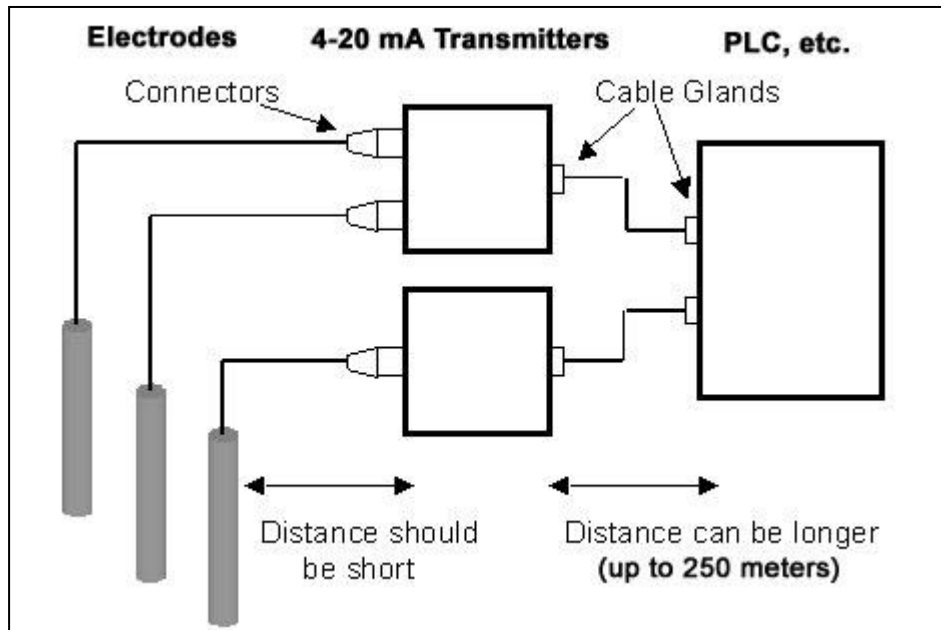


4-20 mA, Loop-powered Signal Transmitters

Convert mV signals from Ion-selective, ORP and pH electrodes to 4-20 mA format to allow connection to PLCs, Displays, Controllers, Instruments and Automation Systems



We offer seven types of Electrode Signal Transmitter

Signal Transmitter Specifications					End User Price (GBP) Exc. VAT
Type	Input	Output	Max. Distance	Electrode	
TRA-ISE	Ion (mV, selectable range) ¹	4 - 20 mA	250 meter	1xIon Selective electrode	210.00
TRA-PHF	pH (± 400 mV, 0 to 14 pH) ²	4 - 20 mA	250 meter	1xpH electrode	130.00
TRA-PHR	pH (± 200 mV, 3.5 to 10.5 pH) ³	4 - 20 mA	250 meter	1xpH electrode	130.00
TRA-PHFT	pH (± 400 mV, 0 to 14 pH) ² + PT1000 (mV) ⁴	4 - 20 mA	250 meter	1xpH electrode + 1xPT1000 Temperature sensor	180.00
TRA-PHRT	pH (± 200 mV, 3.5 to 10.5 pH) ³ + PT1000 (mV) ⁴	4 - 20 mA	250 meter	1xpH electrode + 1xPT1000 Temperature sensor	180.00
TRA-PHF-DIN	pH (± 400 mV, 0 to 14 pH) ²	4 - 20 mA	250 meter	1xpH electrode	105.00
TRA-PHR-DIN	pH (± 200 mV, 3.5 to 10.5 pH) ³	4 - 20 mA	250 meter	1xpH electrode	105.00

DIN models can be mounted on standard DIN-rail – others can be wall mounted

TRA-ISE Transmitter



- Dimensions: 115 x 90 x 55 mm (without connectors)
- Mounting: Can be wall-mounted (4 x M4 screw)
- Enclosure: ABS, Protection Class: IP 52
- Connectors:
 - One BNC Socket (50 Ohm type) for Electrode signal Input
 - One 2 mm socket for external Reference Electrode
 - One 4 to 20 mA Output with cable gland (cables are screwed to the on-board terminals marked "+" and "-").
- Power Supply: Output loop-powered (12 V DC to 36 V DC)
- Input range: On-board selectable settings with rotary switches and trimming potentiometer
- Input Impedance: typical 1 Tera Ohm (10 exp 12 Ohm)
- Input Bias Current: typical 0.1 pA (10 exp -13)
- Load Resistance: must be less than 200 Ohm for 12V and 800 Ohm for 36 V loop-power
- Transfer Characteristic:
 - Converts the selected input range of the Ion concentration to the full output range (4-20 mA). when **The lowest ion concentration** gives output of 4 mA;
 - The highest ion concentration**, gives output of 20 mA

TRA-PHFT and TRA-PHRT Transmitters



- Dimensions: 115 x 90 x 55 mm (without connectors)
- Mounting: Can be wall-mounted (4 x M4 screw)
- Enclosure: ABS, Protection Class: IP 52
- Connectors:
 - One BNC Socket (50 Ohm type) for Electrode signal Input
 - One 2 mm socket for external Reference Electrode
 - One 3.5 mm socket Pt1000 Temperature sensor
 - One 4 to 20 mA Output with cable gland (cables are screwed to the on-board terminals marked "+" and "-").
- Power Supply: Output loop-powered (12 V DC to 36 V DC)
- Input Impedance: typical 1 Tera Ohm (10 exp 12 Ohm)
- Input Bias Current: typical 0.1 pA (10 exp -13)
- Load Resistance: must be less than 200 Ohm for 12V and 800 Ohm for 36 V loop-power
- 2 types of Transfer Characteristic are available:
 - TRA-PHFT:** pH 0-14 to full output range (4-20 mA)
 - pH = 0 input gives output of 4 mA;
 - pH = 14 input gives output of 20 mA
 - TRA-PHRT:** pH 3.5-10.5 to full output range (4-20 mA)
 - pH = 3.5 input gives output of 4 mA;
 - pH = 10.5 input gives output of 20 mA
 - Pt1000 Temperature sensor Input**
 - 0°C input gives output of 4 mA;
 - 100°C input gives output of 20 mA

TRA-PHF and TRA-PHR Transmitters



- Dimensions: 115 x 90 x 55 mm (without connectors)
- Mounting: Can be wall-mounted (4 x M4 screw)
- Enclosure: ABS, Protection Class: IP 52 (NEMA 2/3)
- Connectors:
 - One BNC Socket (50 Ohm type) for Electrode signal Input
 - One 2 mm socket for external Reference Electrode
 - One 4 to 20 mA Outputs with cable gland (cables are screwed to the on-board terminals marked "+" and "-").
- Power Supply: Output loop-powered (12 V DC to 36 V DC)
- Input Impedance: typical 1 Tera Ohm (10 exp 12 Ohm)
- Input Bias Current: typical 0.1 pA (10 exp -13)
- Load Resistance: must be less than 200 Ohm for 12V and 800 Ohm for 36 V loop-power
- 2 types of Transfer Characteristic are available:
 - TRA-PHF:** pH 0-14 to full output range (4-20 mA)
pH= 0 input gives output of 4 mA;
pH = 14 input gives output of 20 mA
 - TRA-PHR:** pH 3.5-10.5 to full output range (4-20 mA)
pH = 3.5 input gives output of 4 mA;
pH = 10.5 input gives output of 20 mA

TRA-PHF-DIN and TRA-PHR-DIN Transmitters



"R" and "R" - Terminals
for External Reference

"-" and "+" : Terminals
for 4-20 mA Output

- Dimensions: 80x 70 x 20mm (without BNC connector)
- Mounting: Can be wall-mounted on small or large DIN - Rails (snap-on fixing)
- Enclosure: ABS, Protection Class: IP 50
- Connectors:
 - One BNC Socket (50 Ohm type) for Electrode signal Input
 - Two additional parallel Screw-terminals "R" (one can be used to extend the reference to multiple transmitters) as reference input additional to the outer metal part of the BNC connector (connected to the screen of the coax cable)
 - Two Screw-terminals marked "+" and "-" for 4 to 20 mA Output. Wrong Polarity will not damage the transmitter and will not cause an electrical shortcut.
- Power Supply: Output loop powered (12 V DC to 36 V DC)
- Input Impedance: typical 1 Tera Ohm (10 exp 12 Ohm)
- Input Bias Current: typical 0.1 pA (10 exp -13)
- Load Resistance: must be less than 200 Ohm for 12V and 800 Ohm for 36 V loop-power
- 2 type of Transfer Characteristic are available:
 - TRA-PHF-DIN:** pH 0-14 to full output range (4-20 mA)
pH= 0 input gives output of 4 mA;
pH = 14 input gives output of 20 mA
 - TRA-PHR-DIN:** pH 3.5-10.5 to full output range (4-20 mA)
pH = 3.5 input gives output of 4 mA;
pH = 10.5 input gives output of 20 mA