

Universal AC / DC transmitter

4179



- Measures AC current and voltage signals
- Outputs passive or active current signals
- Programming, process monitoring and diagnostics via 4511 / 4501
- Response time < 0.75 s and excellent accuracy better than 0.3%
- Universally powered by 21.6...253 VAC / 19.2...300 VDC



Application

- The 0...5 AAC RMS range makes it possible to accurately measure a typical current transformer.
- The 0...300 VAC RMS range allows accurate supply voltage monitoring.
- The 4179 measures standard input ranges, and can be freely configured to customer-defined input range.
- Converts narrow AC current / voltage inputs to wide bipolar or unipolar outputs, e.g. 0...1 VAMS input = ± 10 volt or 4...20 mA output with a minimum span of 0.5 AAC RMS or 0.5 VAC RMS.
- Configurable input limits control the output value for increased safety.

Technical characteristic

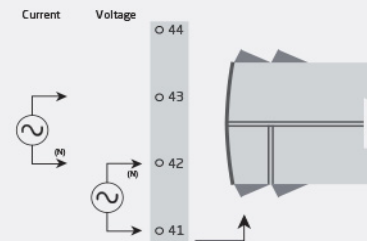
- The latest analog and digital techniques are used to obtain maximum accuracy and immunity to interference.
- Possibility of output safety feedback by selecting S4...20 mA output.
- The current output can drive up to 800 Ohms, with an adjustable response time of 0.0...60.0 seconds.
- Exceptional mA output load stability of <0.001% of span / 100 Ohm.
- Meets the NAMUR NE21 recommendations, ensuring high accuracy in harsh EMC environments.
- Meets the NAMUR NE43 recommendations, allowing the control system to easily detect an input error.
- Each unit is tested to a high 2.3 kVAC, 3-port galvanic isolation level.
- Excellent signal to noise ratio of > 60 dB.

Mounting / installation / programming

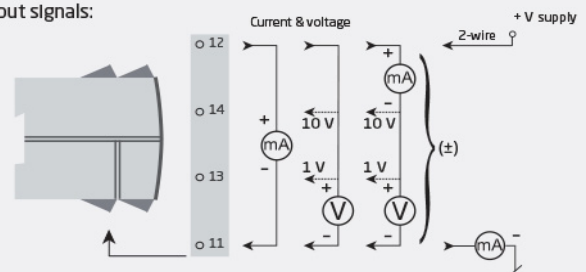
- Very low power consumption means units can be mounted side by side without an air gap – even at 60°C ambient temperature.
- Configuration, monitoring, 2-point process calibration and more are accomplished using either the 4501 detachable display or the 4511 detachable digital communication enabler.
- All programming can be password-protected.

Applications

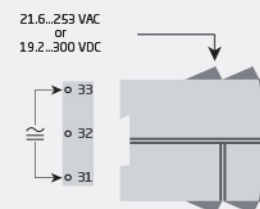
Input signals:



Output signals:



Power connection:



Order:

Type
4179

Environmental Conditions

Operating temperature.....	-20°C to +60°C
Storage temperature.....	-20°C to +85°C
Calibration temperature.....	20...28°C
Relative humidity.....	< 95% RH (non-cond.)
Protection degree.....	IP20
Installation in.....	Pollution degree 2 & measurement / overvoltage cat. II

Mechanical specifications

Dimensions (HxWxD).....	109 x 23.5 x 104 mm
Dimensions (HxWxD) w/ 4501 / 4511.....	109 x 23.5 x 116 / 131 mm
Weight approx.....	250 g
Weight incl. 4501 / 4511 (approx.).....	285 g / 350 g
DIN rail type.....	DIN EN 60715/35 mm
Wire size.....	0.13...2.08 mm ² AWG 26...14 stranded wire
Screw terminal torque.....	0.5 Nm
Vibration.....	IEC 60068-2-6
2...13.2 Hz.....	±1 mm
13.2...100 Hz.....	±0.7 g

Common specifications**Supply**

Supply voltage, universal.....	21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Max. required power.....	≤ 1.8 W nom.
Internal power dissipation.....	≤ 2.5 W

Isolation voltage

Test voltage.....	2.3 kVAC
Working voltage.....	250 VAC (reinforced) / 500 VAC (basic)

Response time

Response time (0...90%, 100...10%)..... < 0.75 s

Programming..... Communication enabler 4511 / Programming front 4501

Signal dynamics, input..... 20 bit

Signal dynamics, output..... 18 bit

Signal / noise ratio..... > 60 dB

Output referred common mode rejection ratio..... 0.02 ppm / VHz

Accuracy..... Better than 0.3% of selected range*

EMC immunity influence..... < ±0.5% of span*

Extended EMC immunity: NAMUR NE21, A criterion, burst..... < ±1% of span*

of span..... = of selected standard range

Input specifications**Current input**

Signal range.....	0...5 AAC / 40...400 Hz
Maximum input limit.....	6.00 AAC @ 40°C
Programmable measurement ranges.....	0...0.5; 0...1; 0...2.5 & 0...5 AAC

Custom configurable signal range..... 0...5 AAC / 40...400 Hz

Min. measurement range (span)..... 0.5 AAC

Input resistance..... Nom. < 0.007 Ω

Voltage input

Signal range..... 0...300 VAC / 40...400 Hz

Programmable measurement ranges..... 0...0.5, 0...1, 0...2.83, 0...5, 0...120, 0...230 & 0...300 VAC

Custom configurable signal range..... 0...300 VAC / 40...400 Hz

Min. measurement range (span)..... 0.5 VAC

Input resistance..... Nom. 3 MΩ || 100 pF

Output specifications**Active unipolar and bipolar mA output**

Programmable ranges..... 0...20, 4...20 and S4...20 mA

Programmable ranges..... ±10 and ±20 mA

Programmable ranges..... Direct or Inverted Action

Load (@ current output)..... ≤ 800 Ω

V-curve function, active signals, 100-0-100%..... 20-0-20 mA

Passive 2-wire mA output

Programmable ranges..... 0...20 and 4...20 mA

Programmable ranges..... Direct or Inverted action

V-curve function, 100-0-100%..... 20-0-20 mA

External loop supply..... 3.5...30 V

Current output

Signal range..... 0...23 mA (unipolar)

Signal range..... -23...+23 mA (bipolar)

Current limit..... ≤ 28 mA (unipolar)

Current limit..... ± 28 mA (bipolar)

Load stability..... ≤ 0.001% of span / 100 Ω

Response time, programmable..... 0.0...60.0 s

Voltage output

Programmable signal ranges..... 0/0.2...1; 0/1...5; 0/2...10; 1...0.2/0; 5...1/0; 10...2/0 V

Programmable signal ranges..... ±1, ±5 and ±10 V

Programmable signal ranges..... Direct or Inverted action

V-curve function, 100-0-100%..... 1-0-1, 5-0-5 and 10-0-10 V

Load (@ voltage output)..... ≥ 500 kΩ

Response time, programmable..... 0.0...60.0 s

Observed authority requirements

EMC..... 2014/30/EU

LVD..... 2014/35/EU

RoHS..... 2011/65/EU

Approvals

UL..... UL 508 / C22.2 no. 14

NB

* / **..... For custom configurable signal ranges, general accuracy and EMC specifications are 0.3% of full scale