

T82N

Analog transducers





T82N Range

Analog transducers for AC electrical quantities, class 0.5

PRODUCT ADVANTAGES

- + Ideal for the requirements of the **NUCLEAR MARKET**
- + **PLATE-MOUNTED AND PLUG-IN** versions
- + **CONFIGURABLE ON REQUEST:** Input quantities, transfer curve, output signal, etc.



Plug-in version with special socket for plate mounting or DIN rail mounting

> Description

The T82N models measure an AC electrical quantity and converts it into a standardized, low-level DC current or voltage signal (e.g. 4...20 mA).

They are normally used in conjunction with analog or digital measuring instruments (panel meters, recorders, etc.), supervision systems (PLCs, SCADA, building management automation systems, etc.) and are also incorporated in measurement and control loops.



T82N Range

> Electrical specifications

■ Inputs

- Short-term overload:
U input: 2 U_n during 1s repeated 10 times
I input: 20 I_n during 1s repeated 10 times
- DC overload :
U input: 1.2 U_n
I input: 1.2 I_n
- Frequency:
50 Hz (45...55 Hz)
60 Hz (55...65 Hz)

■ Analog output

- Accuracy: class 0.5 according to IEC 60688 April 2013
- Response time: 120 ms to 260 ms at 95 % of output current
- Current output operating resistance: 20V / I_s
- Influence of operating resistance: ± 0.1 % from 0 Ω to max. operating resistance
- Peak-to-peak ripple: 0,2 à 0,4 %

■ Auxiliary power supply:

- Operating range:
 ± 10 % from 100/ $\sqrt{3}$ Vac to 440 Vac
 ± 20 % from 24 to 125 Vdc
- Consumption :
 ≤ 3 VA from 100/ $\sqrt{3}$ to 440 Vac
 ≤ 3 W from 24 to 125 Vdc

> Reference standards

■ Electromagnetic compatibility:

2014/30/CE(EMC)
IEC 61326-1 (07/2013)

■ Safety:

2006/95/CE
IEC 61010-1 (01/2011)

■ Metrological:

IEC 60688 (04/2013)

■ Climatic:

IEC 60688 (04/2013)

■ Mechanical:

IEC 60068-2-6 (04/2008)
IEC 60068-2-27 (07/2009)

> Operating environment

- Operating temperature: -10 to +60 °C
- Operating humidity: Up to 95 % at 45 °C
- Storage temperature: -25 to +70 °C

> Casings

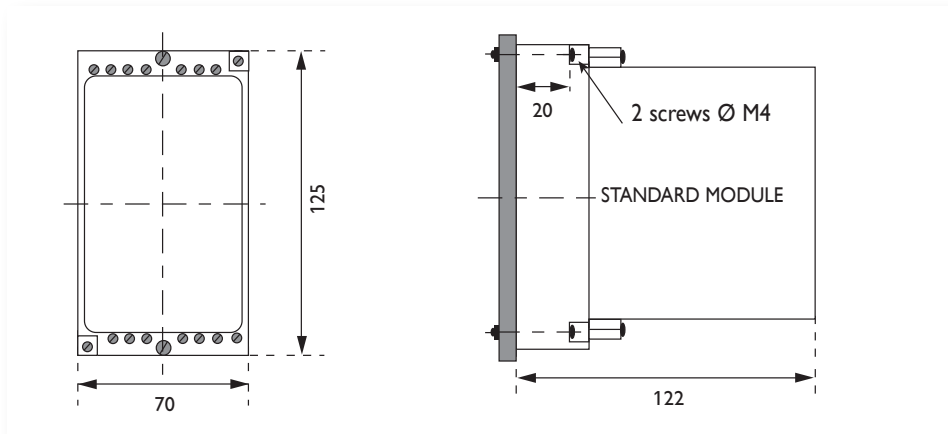
Screw connection terminals, 2 x 2.5 mm² or 1 x 6 mm²

- IP20 protection rating as per IEC 60529

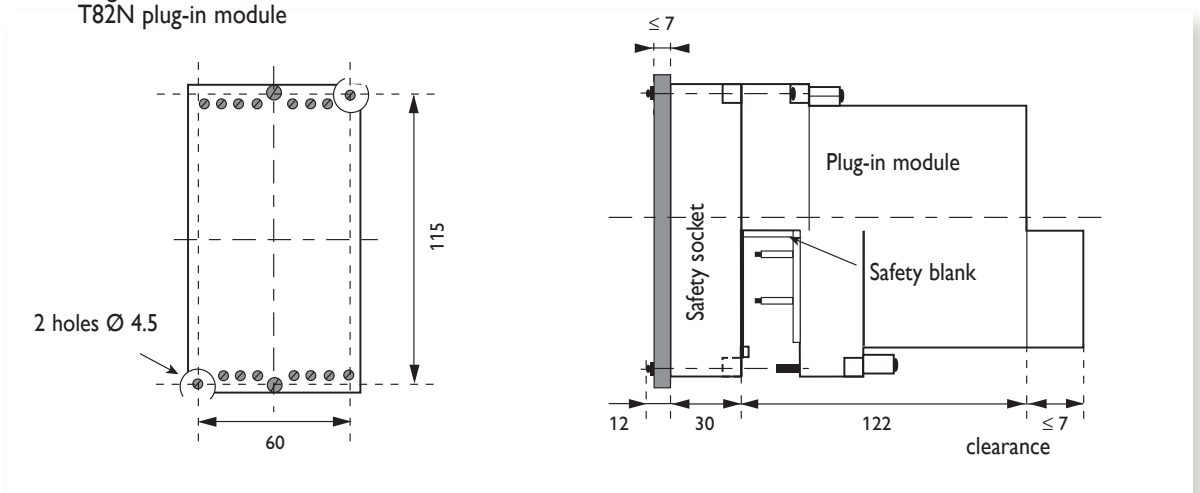
- Weight: 0.60 to 0.85 kg (Socket: 0.25 kg)

> Dimensions (in mm)

T82N plate-mounting module



Plug-in
T82N plug-in module





T82N Range

> Mounting accessories

- Connection socket for plug-in module



| Model | Socket | |
|-----------|--------|-----------|
| | Type | Reference |
| UAR 1210B | 5 | EMBB 4005 |
| IAR 1210B | 4 | EMBB 4004 |
| PAR 1232B | 3 | EMBB 4003 |
| QAR 1232B | 3 | EMBB 4003 |

- Mounting on DIN rail for plate-mounting or plug-in module



| Model | Reference |
|-----------------------------------|-----------|
| Mounting on symmetrical DIN rail | PDIN SYME |
| Mounting on asymmetrical DIN rail | PDIN ASYM |

> Electrical connections

See document MS 0/I-7343.

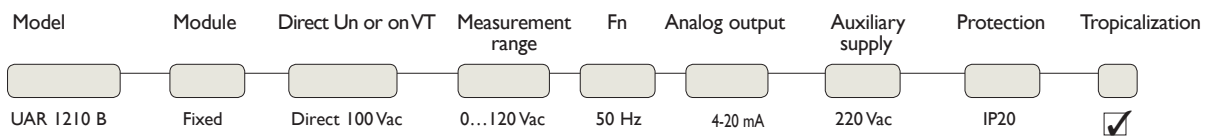


RMS AC voltage



| | |
|---------------------------------|---|
| Model | UAR 1210 B |
| Transfer curve | |
| Linear | • |
| Module | |
| Plate-mounting | 0.7 kg |
| Measurement input | |
| Voltage Un | Direct or on VT: "100/√3" "110/√3" "115/√3" "120/√3" "132/√3" "90" "100" "110" "115" "120" "127" "132" "138" "180" "220" "250" "300" "360" "380 Vac |
| Frequency Fn | 50 Hz ±5 Hz and 60 Hz ±5 Hz |
| Measurement range 0...Xmax | 0...1.25 Un |
| Consumption | 1 kΩ/V or 0.4VA at 400Vac |
| Analog output | |
| Current | 0...Ymax Ymin...Ymax |
| | "0/1 mA" "0/2.5 mA" "0/5 mA" "0/10 mA" "0/20 mA" |
| | "1/5 mA" "2/10 mA" "4/20 mA" |
| Voltage | 0...Ymax Ymin...Ymax |
| | "0/1 V" "0/5 V" "0/10 V" |
| | "1/5 V" "2/10 V" |
| Accuracy | 0.5 % |
| Auxiliary supply | |
| Alternating current | "100/√3 VAC" "110/√3 VAC" "115/√3 VAC" "100 VAC" "110 VAC" "115 VAC" "127 VAC" "220 VAC" "230 VAC" "240 VAC" "380 VAC" "400 VAC" "440 VAC" |
| Direct current | "24 VDC" "48 VDC" "110 VDC" "125 VDC" |
| Module protection rating | |
| Plate-mounting | IP20 |

> Customized product



> Associated products

Normeurope analog panel meters



Sockets for plug-in modules



Mounting on DIN rail (plate-mounting or plug-in)





T82N Range



AC RMS voltage



| | | |
|---------------------------------|--|--|
| Model | IAR 1210 B | |
| Transfer curve | | |
| Linear | ● | |
| Module | | |
| Plate-mounting | 0.7 kg | |
| Measurement input | | |
| Current In | Direct or on CT : "0.5" "0.6" "1" "1.2" "1.3" "1.5" "2.5" "5" "6" "6.5" "7" "7.5" "10" | |
| Frequency Fn | 50 Hz ±5 Hz and 60 Hz ±5 Hz | |
| Measurement range 0...Xmax | 0 to In and 0 to 1.3 In if CT present | |
| Consumption | ≤ 0.2 VA | |
| Analog output | | |
| Current | 0...Ymax | "0/1 mA" "0/2.5 mA" "0/5 mA" "0/10 mA" "0/20 mA" |
| | Ymin...Ymax | "1/5 mA" "2/10 mA" "4/20 mA" |
| Voltage | 0...Ymax | "0/1 V" "0/5 V" "0/10 V" |
| | Ymin...Ymax | "1/5 V" "2/10 V" |
| Accuracy | 0.5 % | |
| Auxiliary supply | | |
| Alternating current | "100/√3 VAC" "110/√3 VAC" "115/√3 VAC" "100 VAC" "110 VAC" "115 VAC" "127 VAC" "220 VAC" "230 VAC" "240 VAC" "380 VAC" "400 VAC" "440 VAC" | |
| Direct current | "24 VDC" "48 VDC" "110 VDC" "125 VDC" | |
| Module protection rating | | |
| Plate-mounting | IP20 | |

> Customized product

| Model | Module | Direct Un or on VT | Measurement range | Fn | Analog output | Auxiliary supply | Protection | Tropicalization |
|------------|--------|--------------------|-------------------|-------|---------------|------------------|------------|-------------------------------------|
| IAR 1210 B | Fixed | 1000 / 5A | 0...1300 A | 50 Hz | 4..20 mA | 48 Vdc | IP20 | <input checked="" type="checkbox"/> |

> Associated products

Normeurope
analog panel meters



Sockets for plug-in
modules



Mounting on DIN rail
(plate-mounting or plug-in)





Active power



| | | |
|--------------------------------------|--|---|
| Model | PAR 1232 B | |
| Network + connections | | |
| Balanced three-phase - 3 wires | ● | |
| Unbalanced three-phase - 3 / 4 wires | ● | |
| Transfer curve | | |
| Linear | ● | |
| Module | | |
| Plate-mounting | 0.7 kg | |
| Module | | |
| Current In | Direct or on CT: "1" "5" "10" | |
| Ph-N voltage Un | Direct or on VT: "57.73" "63.51" "66.4" "230" | |
| Ph-Ph voltage Un | Direct or on VT: "100" "110" "115" "120" "127" "230" "240" "380" "400" | |
| Frequency Fn | 50 Hz ± 5 Hz and 60 Hz ± 5 Hz | |
| Measurement range 0...Xmax | $\pm 1.35 \geq S_n^{(1)} \geq \pm 0.50$ | |
| Consumption | I input: ≤ 0.2 VA ; U input: ≥ 500 Ω /V | |
| Analog output | | |
| Current | 0...Ymax | "0/1 mA" "0/2.5 mA" "0/5 mA" "0/10 mA" "0/20 mA" |
| | Ymin...Ymax | "1/5 mA" "2/10 mA" "4/20 mA" |
| | | "1/3/5 mA" "2/6/10 mA" "4/12/20 mA" |
| Voltage | 0...Ymax | "-1/0/1 mA" "-2.5/0/2.5 mA" "-5/0/5 mA" "-10/0/10 mA" "-20/0/20 mA" |
| | Ymin...Ymax | "0/1V" "0/5V" "0/10V" |
| | | "1/5V" "2/10V" |
| Accuracy | 0.5 % | |
| Auxiliary supply | | |
| Alternating current | "100/ $\sqrt{3}$ VAC" "110/ $\sqrt{3}$ VAC" "115/ $\sqrt{3}$ VAC" "100 VAC" "110 VAC" "115 VAC" "127 VAC" "220 VAC" "230 VAC" "240 VAC" "380 VAC" "400 VAC" "440 VAC" | |
| Direct current | "24 VDC" "48 VDC" "110 VDC" "125 VDC" | |
| Module protection rating | | |
| Plate-mounting | IP20 | |

(1) $S_n = V \times I \times \cos \varphi$ (single-phase network) $S_n = 3 \times V \times I \times \cos \varphi$
 (Balanced three-phase, Unbalanced three-phase 4 wires)
 $S_n = \sqrt{3} \times U \times I \times \cos \varphi$ (Balanced three-phase, Unbalanced three-phase 3 wires)

Parameters to be specified when ordering

> Customized product

| Model | Network | Module | Direct Un or on CT | Direct Un or on VT | Measurement range | Fn | Analog output | Auxiliary supply | Protection | Tropicalization |
|------------|--------------------|--------|--------------------|--------------------|-------------------|-------|---------------|------------------|------------|-------------------------------------|
| PAR 1232 B | Unbal. 3ph 4 wires | Fixed | CT 1000 / 5 A | VT 20 kV / 100 V | 0...2.77 MW | 50 Hz | 4...20 mA | 220 Vac | IP 20 | <input checked="" type="checkbox"/> |

> Associated products

Normeurope analog panel meters



Sockets for plug-in modules



Mounting on DIN rail (plate-mounting or plug-in)





T82N Range



Reactive power



| Model | QAR 1232 B | |
|--------------------------------------|--|--|
| Network + connections | | |
| Balanced three-phase - 3 wires | ● | |
| Unbalanced three-phase - 3 / 4 wires | ● | |
| Transfer curve | | |
| Linear | ● | |
| Module | | |
| Plate-mounting | 0,7 kg | |
| Measurement input | | |
| Current In | Direct or on CT : "I" "5" "10" | |
| Ph-N voltage Un | Direct or on VT "57.73" "63.51" "66.4" "230" | |
| Ph-Ph voltage Un | Direct or on VT "100" "110" "115" "120" "127" "230" "240" "380" "400" | |
| Frequency Fn | 50 Hz ±5 Hz and 60 Hz ±5 Hz | |
| Measurement range 0...Xmax | ±1.35 ≥Sn ⁽¹⁾ ≥ ±0.50 | |
| Consumption | I input: ≤ 0.2 VA ; U input: ≥ 500 Ω/V | |
| Analog output | | |
| Current | 0...Ymax | "0/1 mA" "0/2.5 mA" "0/5 mA" "0/10 mA" "0/20 mA" |
| | Ymin...Ymax | "1/5 mA" "2/10 mA" "4/20 mA" |
| | | "1/3/5 mA" "2/6/10 mA" "4/12/20 mA" |
| Voltage | 0...Y max | "0/1V" "0/5 V" "0/10 V" |
| | Ymin...Ymax | "1/5 V" "2/10 V" |
| | | "-1/0/1V" "-5/0/5 V" "-10/0/10 V" |
| Accuracy | 0.5 % | |
| Auxiliary supply | | |
| Alternating current | "100/√3 Vac" "110/√3 Vac" "115/√3 Vac" "100 Vac" "110 Vac" "115 Vac" "127 Vac" "220 Vac" "230 Vac" "240 Vac" "380 Vac" "400 Vac" "440 Vac" | |
| Direct current | "24 Vdc" "48 Vdc" "110 Vdc" "125 Vdc" | |
| Module protection rating | | |
| Plate-mounting | IP20 | |

(1) $S_n = V \times I \times \cos \varphi$ (single-phase network) $S_n = 3 \times V \times I \times \cos \varphi$

(Balanced three-phase, Unbalanced three-phase 4 wires)

$S_n = \sqrt{3} \times U \times I \times \cos \varphi$ (Balanced three-phase, Unbalanced three-phase 3 wires)

Parameters to be specified when ordering

> Customized product

| Model | Network | Module | Direct Un or on CT | Direct Un or on VT | Measurement range | Fn | Analog output | Auxiliary supply | Protection | Tropicalization |
|------------|--------------------|--------|--------------------|--------------------|-------------------|-------|---------------|------------------|------------|-------------------------------------|
| QAR 1232 B | Unbal. 3ph 4 wires | Fixed | CT 1000 / 5 A | VT 20 kV / 100 V | 0...2.77 MW | 50 Hz | 4...20 mA | 220 Vac | IP 20 | <input checked="" type="checkbox"/> |

> Associated products

Normeurope analog panel meters

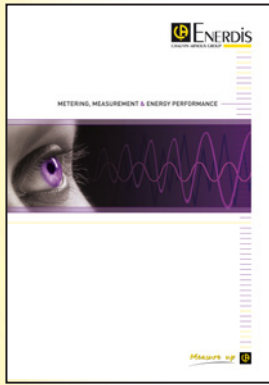


Sockets for plug-in modules



Mounting on DIN rail (plate-mounting or plug-in)





ENERDIS is the company specialized in fixed equipment for measurement, testing, metering and supervision of electrical networks, as well as energy-control solutions for all utilities.

The company joined the CHAUVIN ARNOUX Group in 1998, benefiting from the global R&D teams integrated production facilities to offer comprehensive expertise covering everything from electrical measurement through to energy performance.

Its offering is based around four major fields:

- **Network supervision:** quality analyzers, measurement transducers, tariff meters, etc.
- **Energy management systems:** submeters, power monitors, current transformers, environmental measurement sensors, energy information systems, etc.
- **Automation relays:** instantaneous relays, time-delay relays, function relays and sockets.
- **Tailored services and solutions:** tailored diagnostics, recommendations, training and development.

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