## EMU

## Electricity Measurement Units

## Highlights

- Three types of inputs
- Communication protocol: modbus RTU, addresses in range 1-247, broadcast address 0

■ Supported rates: 1200, 2400, 4800, 9600, 19200, 38400,57600 and 115200 bps

- Data formats available: 8 bits with No Parity, Even Parity or Odd Parity
■ Factory defaults: 9600bps, 1 start, 8 data, parity none, Modbus address 1
- Screw terminals connection


■ Power requirements: 10-28V DC / consumption less than 1W
■ Measurement isolation 3000 V DC
■ Plastic enclosure ( $35 \times 86 \times 58 \mathrm{~mm}$ ), DIN rail 35 mm mountable

## Description

DECODE EMU devices represent series of measuring devices for measurement of AC and DC voltages and currents with integrated RS-485 Modbus connection.
There are three different device options supported where the third one, with analogue input unit, offer several subtypes.

- EMU V3 - for AC voltages measurement $3 \times 230$ V AC
- EMU C3 - for AC currents measurement (current transformers) $3 \times$ CT 5A AC
- EMU A3-TTT - $3 x$ analogue input measurement (TTT designates input type, example: device EMU A3001 features first two inputs $0 / 4-20 \mathrm{~mA}$ where the third one features PT100 input)


## Technical specification

| DECODE EMU measuring devices | EMU V3 | $\begin{aligned} & \text { EMU } \\ & \text { C3 } \end{aligned}$ | EMU A3-TTT |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\begin{aligned} & \text { Type } \\ & T=0 \end{aligned}$ | $\begin{aligned} & \text { Type } \\ & \text { T=1 } \end{aligned}$ | $\begin{aligned} & \text { Type } \\ & T=2 \end{aligned}$ | $\begin{aligned} & \text { Type } \\ & T=3 \end{aligned}$ | $\begin{aligned} & \text { Type } \\ & T=4 \end{aligned}$ |
| Measured parameters | L1, L2, L3, <br> L12, L23, <br> L31, <br> frequency | $\begin{aligned} & \text { CT1, } \\ & \text { CT2, } \\ & \text { CT3 } \end{aligned}$ | $\begin{gathered} 0-20 \mathrm{~mA}, \\ 4-20 \mathrm{~mA} \\ \text { input } \\ \text { resistance } \\ 40 \Omega \end{gathered}$ | PT 100 | PT 100 | 0-5V DC | $\begin{gathered} 0-10 \mathrm{~V} \\ \mathrm{DC} \end{gathered}$ |
| Measurement range | $\underset{\mathrm{rms}}{0-250 \mathrm{~V} \text { AC }}$ | $\underset{\mathrm{rms}}{0-5 \mathrm{AAC}}$ | $\begin{gathered} 0-25 \mathrm{~mA} \\ \mathrm{DC} \end{gathered}$ | $\begin{aligned} & \text { from -50 } \\ & { }^{\circ} \mathrm{C} \text { to } \\ & +150{ }^{\circ} \mathrm{C} \end{aligned}$ | $\begin{aligned} & \text { from }-50^{\circ} \mathrm{C} \\ & \text { to }+150^{\circ} \mathrm{C} \end{aligned}$ | 0-5V DC | $\begin{gathered} 0-10 \mathrm{~V} \\ \mathrm{DC} \end{gathered}$ |
| Resolution | 10 mV rms | 1 mArms | 0.01 mA | $0.1{ }^{\circ} \mathrm{C}$ | $0.1{ }^{\circ} \mathrm{C}$ | 1 mV | 1 mV |
| Measurement type | True | MS | - | - | - | - | - |



## Connection diagram

Jumpers KS1 and KS2 are to be placed only if RS-485 line termination is required. For short distances the termination is not needed. Distances longer than 100 m , as well as presence of notable disturbances, require line termination at one of slave devices, specifically the one positioned at the end of line.

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