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ACM-P, ACM-P/B

Phase angle transducers
in single-phase or 3-phase grid with symmetrical load

- **measurement sinus and distorted input signal with dominant fundamental wave**
- **output linear with phase angle in degrees**
- **universal power supply 19 – 300V DC a 90 – 250V AC**
- **variant B loop powered**
- **input frequency 50 or 60Hz**
- **isolation input-output-power supply: 4000Vef**
- **measuring range 0-120% of rated input**
- **conversion accuracy 0,2%**
- **compact design**
- **designed for DIN 35 rail mounting**

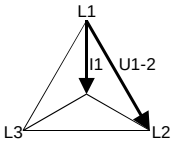
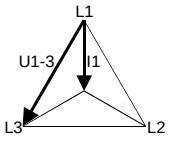
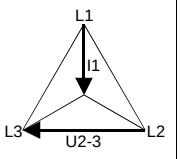
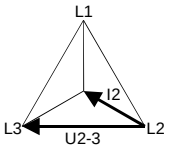
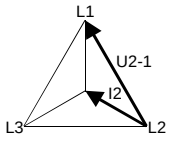
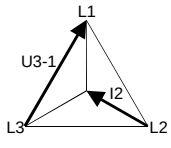
The transducer converts the size of the phase shift φ between current and voltage in a single grid, between voltage and current in symmetrical three-phase balanced grid or between two different voltages of the same frequency in different grids to the unipolar voltage or current signal. Compares the time difference between the zero-crossing of two input signals with a length of period. Current input is separated from the measuring signal via the input transformer. The input signals are digitized and from them is calculated phase shift. Information is transferred through the isolation optocoupler to the output circuit. The output signal is proportional to the phase shift between the two input signals. The current signal can be lead to a greater distance even with higher levels of interference. Input and output circuit is protected against overload.

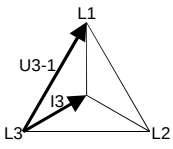
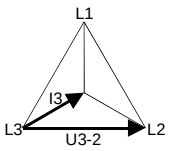
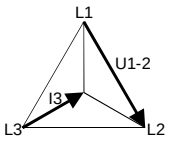
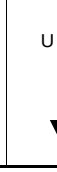
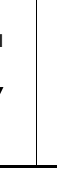
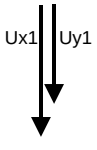
In the absence of 20-120% of rated input signal, the output signal is about 3,6 mA for output 4..20mA. If the output range starts from zero, the output signal is zero.

When measuring voltages between different networks is the Uy1 reference signal.

The transducer can be also used for distorted input signals.

Variants of input connection:

Input current phase	L1	L1	L1	L2	L2	L2
Terminals	1 2 I1 I1	1 2 I1 I1	1 2 I1 I1	1 2 I2 I2	1 2 I2 I2	1 2 I2 I2
Input voltage between phase	L1 - L2	L1 - L3	L2 - L3	L2 - L3	L2 - L1	L3 - L1
Terminals	3 4 L1 L2	3 4 L1 L3	3 4 L2 L3	3 4 L2 L3	3 4 L2 L1	3 4 L3 L1
Vector diagram						

Input current phase	L3	L3	L3	L1	L2	L3	Voltage Uy1 (reference network)
Terminals	1 2 I3 I3	1 2 I3 I3	1 2 I3 I3	1 2 I1 I1	1 2 I2 I2	1 2 I3 I3	1 2 L1y N
Input voltage between phase	L3 - L1	L3 - L2	L1 - L2	L1 - N	L2 - N	L3 - N	Voltage Ux1
Terminals	3 4 L3 L1	3 4 L3 L2	3 4 L1 L2	3 4 L1 N	3 4 L2 N	3 4 L3 N	3 4 L1x N
Vector diagram							

Electrical specifications:

- operating temperature range:	-25 ... +70℃
- storage temperature range:	-40 ... +80℃
- supply voltage:	universal 19 – 300V DC and 90 – 250V AC, to order 20 – 60V AC
variant B	12..30V DC loop powered
- consumption:	max. 1,2VA
- protection:	resettable thermal cut-out in primary circuit
- rated input:	1A, 2,5A, 5A AC
	50 … 500V AC
- measuring range of inputs:	20 ... 120% of rated inputs
- standard measuring range:	±60°, ±90°, ±120°, oth er after agreement
- nominal frequency:	50Hz (60Hz)
- impedance voltage input:	1,5MΩ
- consumption current input:	0,015VA
- input overload capacity voltage	2 Ujm – 1s
current	2 Ijm – 1min., 20 Ijm – 1s
- output:	4-20mA, 0-20mA, 0-10V, other after agreement
- output limit:	about 125% of rated output
- maximum burden of current loop:	15V / Iout (ohm)
- maximum current of voltage output:	max. 10mA
- transmission:	linear
- maximum transmission error:	<0,2%
- temperature induced error:	<0,01%/℃
- test voltage:	4000Vrms
- response time:	300ms
- weight:	100g
- protection housing:	IP40
- protection terminal board	IP20
- pollution degree:	2
- installation category:	III

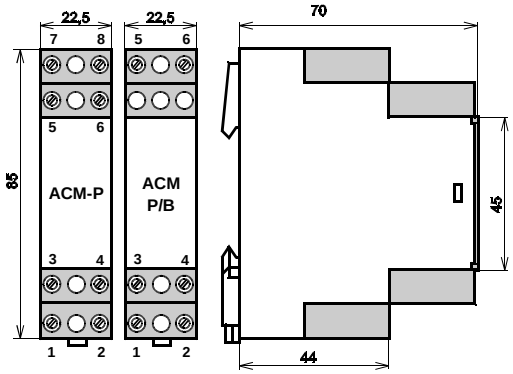
Type test:

Basic type test:	in compliance with ČSN EN 60688
EMC:	in compliance with ČSN EN 61326-1
Safety:	in compliance with ČSN EN 61010-1

Connection terminals:

The terminals accept conductors up to 4 mm2. We recommend using a cable with a core cross section of 0.5 mm2. In noisy environments, use shielded cable.

Dimensional drawing:



Terminals:

ACM-P:
1,2 ... current input (reference voltage Uy1)
3,4 ... voltage input (Ux1)
5,6 ... output signal (6 is +)
7,8 ... auxiliary power supply without polarity

ACM-P/B:
1,2 ... current input (reference voltage Uy1)
3,4 ... voltage input (Ux1)
5,6 ... output current loop 4..20mA (6 is +)

Ordering instructions:

Your order should include:
- transducer type and connection by vector diagram
- rated input voltage
- rated input current
- measuring range of phase
- output range
- other requirements (other power supply…)
- quantity (No. of pieces)

Likvidaci po ukončení životnosti provést odděleným sběrem.
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