ACM-1Q, ACM-1Q4, ACM-1Q3,ACM-XXX/B

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Reactive power transducers

ACM-1Q one- phase grid
ACM-1Q4 four-wire three phase grid balanced load
ACM-1Q3 three-wire three-phase grid balanced load
ACM-XXX/B loop powered variant

- **reactive power measurement**
- **universal power supply 19 – 300V DC a 90 – 250V AC**
- **variant B loop powered**
- **frequency range 40 … 1000Hz**
- **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 operates as a four-quadrant, converts instantaneous reactive power of an AC current and voltage to the unipolar voltage or current signal. The input of the transducer is a current transformer and voltage divider. The input signals are digitized and from them is calculated instantaneous reactive power. Information is transferred through the isolation optocoupler to the output circuit. The output signal is proportional to the measured reactive power. The current signal can be lead to a greater distance even with higher levels of interference. Input and output circuit is protected against overload.
The transducer can be also used for distorted input signals.

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
- standard measuring range:	0 ... 100% of rated input
- maximum measuring range:	0 ... 120% of rated input
- 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:

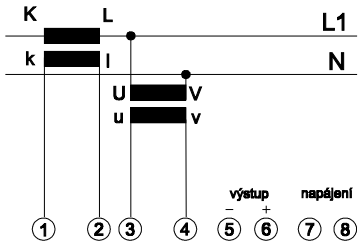
Basic type test:	in compliance with ČSN EN 60688
EMC:	in compliance with ČSN EN 61326-1
Safety:	in compliance with ČSN EN 61010-1

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.

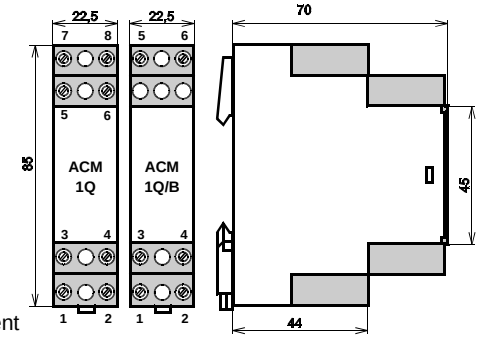
Transducer connection variants:

Dimensional drawing:

1- phase grid, type ACM-1Q, ACM-1Q/B



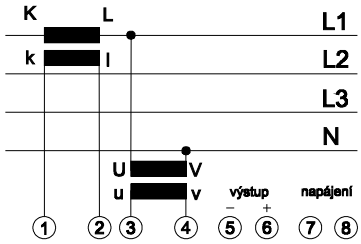
Reactive power:
Q = U . I . sin φ
U,I – phase current and voltage



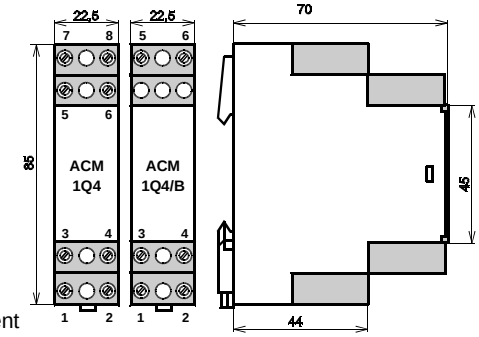
Terminals: ACM-1Q
1,2 ... input of the phase current
3,4 ... input of the phase voltage
5,6 ... output signal (6is +)
7,8 ... auxiliary power supply without polarity

ACM-1Q/B
1,2 ... input of the phase current
3,4 ... input of the phase voltage
5,6 ... output signal current loop (6 is+)
4..20mA

4-wire 3-phase balanced load grid, type ACM-1Q4, ACM-1Q4/B



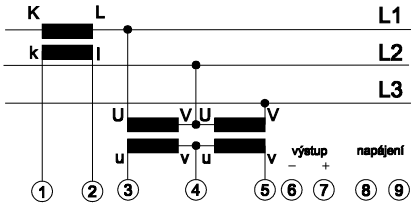
Reactive power:
Q = 3.Uf . If . sin φ
Uf,If – phase current and voltage



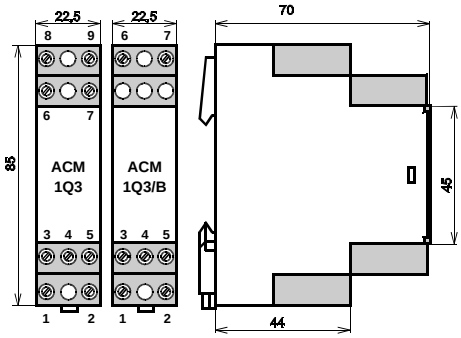
Terminals: ACM-1Q4
1,2 ... input of the phase current
3,4 ... input of the phase voltage
5,6 ... output signal (6is +)
7,8 ... auxiliary power supply without polarity

ACM-1Q4/B
1,2 ... input of the phase current
3,4 ... input of the phase voltage
5,6 ... output signal current loop (6 is+)
4..20mA

3-wire 3-phase balanced load symmetrical grid, type ACM-1Q3,ACM-1Q3/B



Reactive power:
Q = 3.Uf . If . sin φ
Q = √3 . Us . If . sin φ
Uf,If – phase current and voltage
Us – phase to phase voltage
If – phase current



Terminals: ACM-1Q3
1,2 ... input of the phase current
3,4,5 ... input of the phase voltage
6,7 ... output signal (6is +)
8,9 ... auxiliary power supply without polarity

ACM-1Q3/B
1,2 ... input of the phase current
3,4,5... input of the phase voltage
6,7 ... output signal current loop (7 is+)
4..20mA

Ordering instructions:
Your order should include:
- transducer type
- rated input voltage (transformer ratio)
- rated input current (transformer ratio)
- measuring range of power
- output range
- other requirements (other nominal frequency ..)
- quantity (No. of pieces)

Ordering example:
ACM-1Q 230V 100/5A -12..+20kVAr/4..20mA
1pcs
transducer for 1-phase grid
input voltage 230V,
input current with transformer 100/5A,
measuring supply energy 12kVAr
measuring consumption energy 20kVAr
output range 4..20mA.
input value 0kVAr corresponds to the 10mA output value

You can enter active power different from the rated power up to ± 30%. This should include transfers of current and voltage transformers and the required range of active power. When measurement of supply and consumption of energy it is necessary to mention it on the order. When supply and consumption of energy are unbalanced it is necessary to state their both size on the order. The transducer output is always unipolar.

Likvidaci po ukončení životnosti provést odděleným sběrem.
Rawet s.r.o. je členem sdružení RETELA www.retela.cz

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