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Wattmeter 3-Phase Type M9428B



Technical Data

This Watt transducer is a multiplying 3-phase vector transducer, which multiplies voltage by current in real time with the algebraic formula \pm voltage times \pm current = power. This multiplication occurs about 5000 times per second per phase. The resulting, accurate sum of all 3 phases is converted to a pulse with modulated signal which passes a 2-pole low pass filter, the signal isolation amplifier and outputs as a bipolar current signal or a frequency. Because voltage and current are multiplied at the same time, all imaginary values are suppressed. It measures the real power "Watt" only. 3-phase X:5-current transformers allow the measurement of unlimited current values in high power applications. With an option (no mixed DC/AC voltage) it is possible to measure the reactive power "VAR" in AC power lines. DC components are suppressed in this reactive mode.

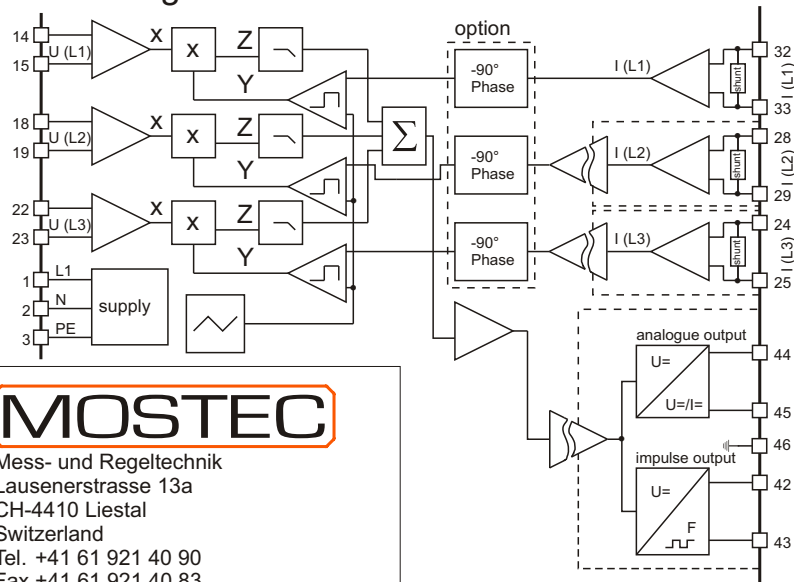
Application:

The M9428B is not - or less intended to be used for billing or energy cost analyzes, its primary application is in the field of measuring and control for industrial controls. Applications where an actual value of power has to be measured as input value to a control system. The generated signal is used to feed process control computers, programmable controllers, process guidance systems, viscosity measurements via the stirrer torque (=power), over or under power cutoffs, remote controls, data loggers and recorders etc. The transducer is build according to the newest CE requirements and fulfills all EMC conformities.

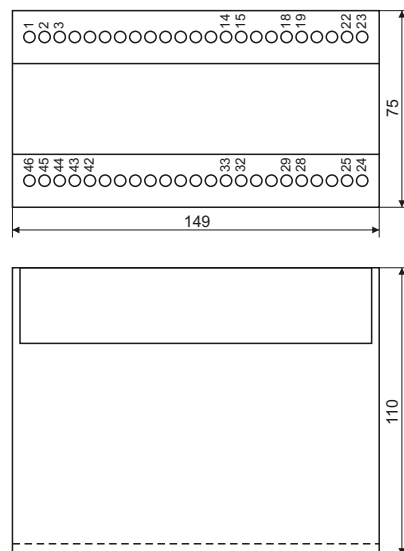
Technical Data:

Voltage (Um):	Max. standard values: 100V, 115V, 230V and 400V, AC/DC, others on request																				
Input impedance:	1,56M Ω at 400V (3.9k Ω /Volt)																				
Current (Im):	Standard values: 0...1, 0...2, 0...5 AC/DC, others on request																				
Current-shunt:	10m Ω ...100m Ω , manganin 25ppM/ $^{\circ}$ C																				
Max. overload:	10 X value, max. 1 second																				
Working principle:	Vector multiplication and integration																				
Output:	0...1V, 0...10V, 0...20mA, 4...20mA, others on request																				
Option pulse output:	Open collector, max. 48V/100mA standard 0...1kHz = 0...100%, others on request																				
Zero adjust:	adjustable from side panel, 0/4mA or 0V																				
Zero offset:	\pm 0.05%																				
Gain adjust:	adjustable from side panel, 20mA or 10V																				
Gain error:	\pm 0.1%																				
Max. rise time:	Typ. 400ms from 10% to 90%, others on request																				
Max. load at current:	\leq 500 Ω																				
Max. length of cable:	2000m, 2-wire shielded, grounded on both side of the cable																				
Max. load at voltage:	\leq 15mA																				
Galvanic isolation:	Test voltage 2500V/50Hz/1 minute																				
Accuracy:	\pm 0.1%																				
Reproducibility:	better than 0.02%																				
Temperature coefficient:	Zero drift typ. 30ppM/ $^{\circ}$ C, gain drift typ. 50ppM/ $^{\circ}$ C																				
Long time stability:	\leq 0.1% after 3 month																				
CE-conformity:	fulfilled																				
Power supply:	230VAC, 50-60Hz, 8VA, others on request																				
Fuse:	Thermo fuse 127 $^{\circ}$ C																				
Working temperature range:	-5 to 45 $^{\circ}$ C																				
Max. humidity:	95%, non-condensing																				
Terminal description:	<table border="0"> <tr> <td>1 = Power supply L1</td> <td>25 = Current L3 output</td> </tr> <tr> <td>2 = Power supply N</td> <td>28 = Current L2 input</td> </tr> <tr> <td>3 = Power supply PE</td> <td>29 = Current L2 output</td> </tr> <tr> <td>14 = Voltage input L1</td> <td>32 = Current L1 input</td> </tr> <tr> <td>15 = Voltage input N1</td> <td>33 = Current L1 output</td> </tr> <tr> <td>18 = Voltage input L2</td> <td>42 = Output pluse +</td> </tr> <tr> <td>19 = Voltage input N2</td> <td>43 = Output pulse -</td> </tr> <tr> <td>22 = Voltage input L3</td> <td>44 = Output +</td> </tr> <tr> <td>23 = Voltage input N3</td> <td>45 = Output -</td> </tr> <tr> <td>24 = Current L3 input</td> <td>46 = Output shield</td> </tr> </table>	1 = Power supply L1	25 = Current L3 output	2 = Power supply N	28 = Current L2 input	3 = Power supply PE	29 = Current L2 output	14 = Voltage input L1	32 = Current L1 input	15 = Voltage input N1	33 = Current L1 output	18 = Voltage input L2	42 = Output pluse +	19 = Voltage input N2	43 = Output pulse -	22 = Voltage input L3	44 = Output +	23 = Voltage input N3	45 = Output -	24 = Current L3 input	46 = Output shield
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Mounting:	35mm mounting rail, EN50022-35																				
Case:	Plastic case safety class II, IP20, IEC144 with finger proofed terminals																				
Dimensions:	149 x 110 x 75mm																				
Weight:	780g																				
Warranty:	2 years																				
Options:	- other power supply - special ranges - -90 $^{\circ}$ Phase, for reactive power measure "VAR"																				
Order Example:	M9428B, supply 230V, measure voltage 3x400V, measure current max. 5A, output 4...20mA = 0...1000Watt																				

Block diagram:



Dimensions:



MOSTEC

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