

MEASURING TRANSDUCERS FOR PRESSURE TRANSMITTER (with four-armed strain gauge full bridge)

DMS-MU

General information	This operating manual is included with the equipment as standard. It contains the information required for correct usage. It is aimed at trained personnel and specialist staff who are familiar with the assembly, installation and commissioning of the product described here. If additional information is required, further details can be requested by the address given below.	
Conformity	This equipment conforms to the requirements of the Directive from the Council of the European Community on the harmonisation of the member states regarding electromagnetic compatibility, EMC Directive 2004/108/EC, as well as Low Voltage Directive 2006/95/EC.	
Application	The measuring transducers DMS-MU serve to convert and isolate a change of resistance of a four-armed strain gauge full bridge into a load-independent direct-current and direct-voltage signal. The calibrated double-outputs can be switched over between 0-20 mA / 0-10 V and 4-20 mA / 2-10 V.	
Function	The strain gauge measuring bridge is supplied with a constant reference voltage and the measuring signal is tapped in form of a voltage difference. The input lines at the terminals A, B, C and D are checked for line break. The galvanic separation is effected by means of an optocoupler. Both outputs are no-load resistant and short-circuit proof. Any connection between both outputs will be unacceptable. An auxiliary voltage will be required for all types.	
Technical data		
Input	Input quantity	Resistance change of a four-armed strain gauge full bridge with e.g. 350 Ohm (max. 170 Ohm - 450 Ohm)
	Rated values	Difference input voltage 2-3,3 mV/V, adjustable from 1,8 up to 3,6 mV/V (corresponds to 12 up to 24,5 mV)
	Bridge supply voltage	approx. 6,8 V
	Zero point	+/- 3 mV adjustable
Output	Output quantities	Load independent direct current and direct voltage
	Double-output	0-20mA /0-500 Ohm of load and 0-10V max. load 10 mA as well as 4-20mA /0-500 Ohm of load and 2-10V max. load 10 mA front-laterally switchable
	Option	<ul style="list-style-type: none"> • Frequency module - a value of 0 – 5 Hz up to 0 – 10 kHz <ul style="list-style-type: none"> ◦ „Open-collector“ NPN, max. 30V 100 mA loadable, impulse/break 50/50 % ◦ Square wave signal 5V, max. 10 mA loadable, impulse/break 50/50 %
Dynamic system behaviour	Accuracy	+/- 0,5 %
	Temperature range	-15°C up to <u>+20°C up to +30°C</u> up to +55 °C
	Temperature influence	< 0,2 % at 10 K
	Influence of aux.	none
	Load influence	none
	External magnetic field influence	none (up to 400 A/m)
	Residual ripple	< 30 mV _{ss}
	Response time	< 300 ms (with frequency module < 400 ms)
	No-load voltage	max. 24 V
	Current limitation	max. 2-fold in case of saturation
	Testing voltage	4 kV between input and output, input and aux., output and aux.
	Sensor break	In case of interruption of one of the input lines at the terminals A, B, C or D, the output of the measuring transducer changes to maximum output signal.
Adjustment	After taking off the plexiglass cover it is possible to adjust with the potentiometer which is named "SPAN" the final value and with the potentiometer which is named "ZERO" the zero-point. With the slide switch the output can be changed over between "LIVE ZERO" (4-20 mA/2-10 V) and "ZERO" (0-20 mA/0-10 V).	
Regulations	EMC	DIN EN 61326

MÜLLER ZIEGLER 
Elektrische Messgeräte

MÜLLER + ZIEGLER GmbH & Co. KG, Industriestr. 23, D-91710 Gunzenhausen
Tel. +49 (0) 98 31.50 04 0, Fax +49 (0) 98 31.50 04 20
<http://www.mueller-ziegler.de> ,email: info@mueller-ziegler.de

Mechanical strength	DIN EN 61010 part 1
Electrical security	DIN EN 61010 part 1 Housing all insulated, protection class II, at a working voltage up to 300V (network to neutral conductor) degree of pollution 2, overvoltage category CAT III
Accuracy, overload	DIN EN 60688
Separation	DIN EN 61010 part 1, 3,52 kV 50 Hz 1sec.
Air gaps and creep distances	DIN EN 61010 part 1
System of protection	DIN EN 60529 housing IP30, terminals IP20
Connection	DIN 43807

Auxiliary voltage

230 V AC \pm 20 %, 45-65 Hz, 2,5 VA

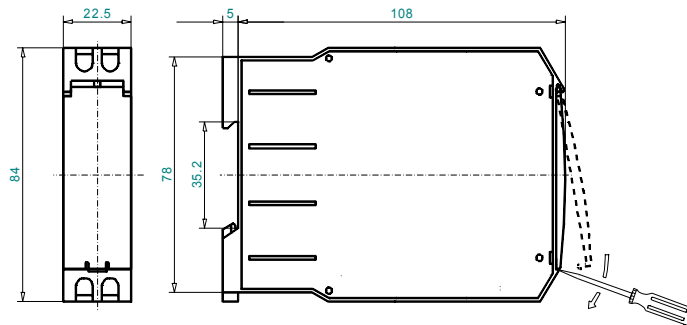
Option

- 110 V AC \pm 20 %, 45-65 Hz, 2,5 VA
- 24 V DC, -15 % bis +25 %, 2 W, (EMC DIN EN 61326 class A)
- 6-30 V AC + DC or 36-265 V AC + DC, 2 VA, (EMC DIN EN 61326 class A)

Weight

180g

Dimensions



Installation

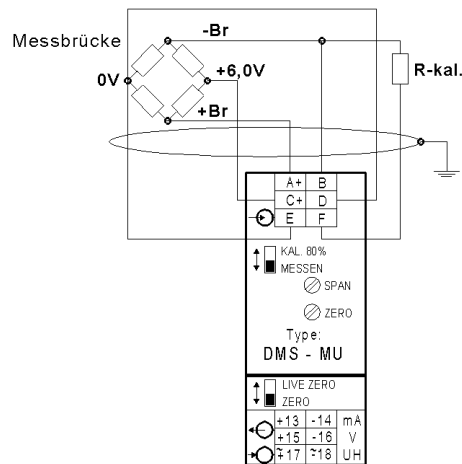
Attachement

snap-on mounting according to DIN EN 50 022

Electrical connection

threaded terminal end 4 mm² max.

Connection



Transducers with frequency module have no further outputs and no "LIVE-ZERO"-switching. At the clamps +13 and -14 the frequency output is available.

Warning!

Before starting any work on or in a device, it must be disconnected from the mains or switched to a voltage-free state.

Maintenance

The device is maintenance-free when used correctly.

Caution!

Servicing or maintenance work must only be carried out by trained specialist personnel.

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