

MVD2510

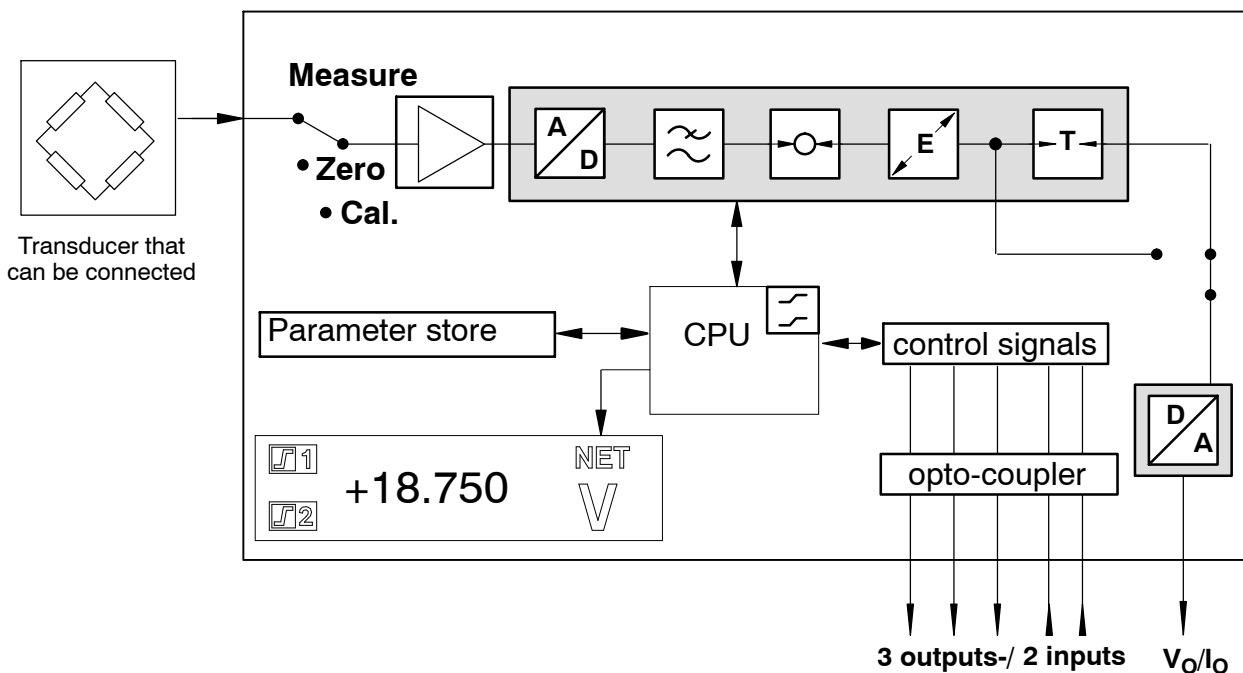
Amplifiers for Panel Mounting



Special features

- For weighing applications, e.g. for container and silo weighing
- DC amplifier for strain-gauge full bridges from 80...5000 Ω
- Easy operation via rugged, industrial keyboard
- 4 1/2 figure LED display with various special characters
- Auto-tare function
- 2 limit switches
- Analogue output (current/voltage) (± 10 V, ± 20 mA, 4...20 mA)

Block diagram



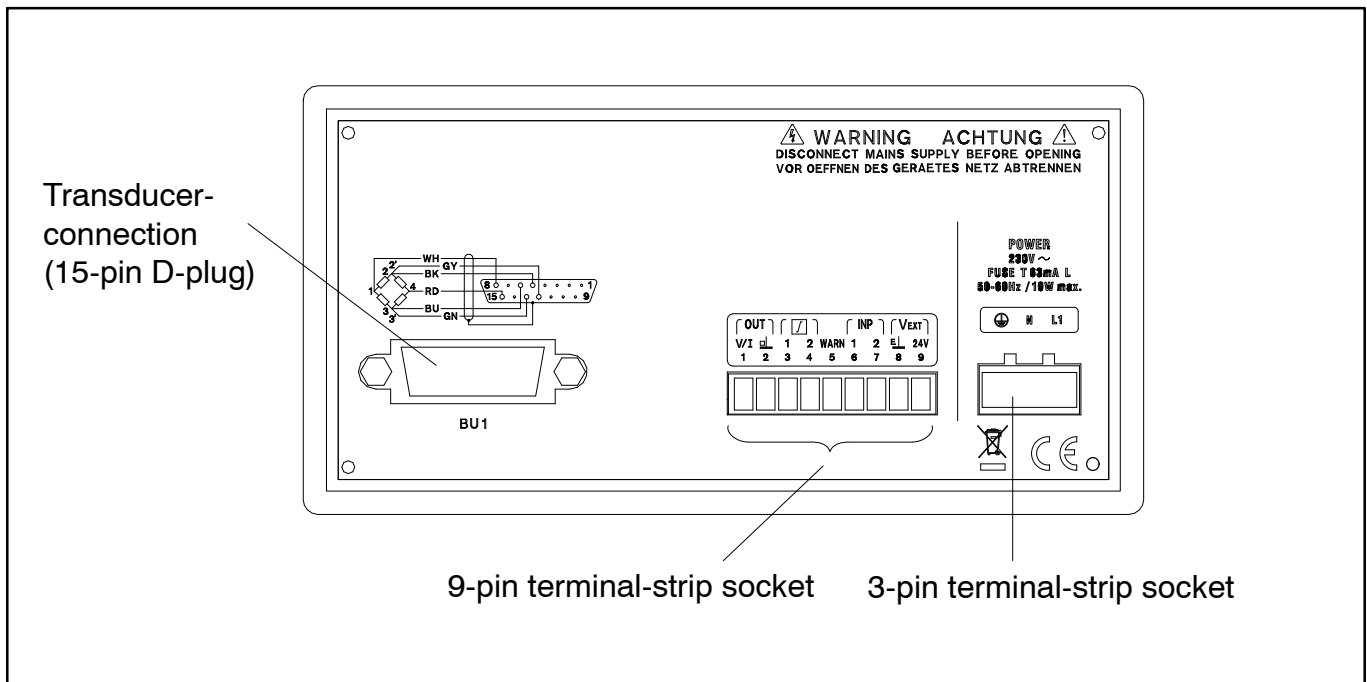
Specifications

Type		MVD2510					
Mains/supply voltage	V	115/230; +6 %; -10 %					
	Hz	48...60					
	Power consumption, max.	VA	8				
Fusible-link fuse (slow blow)	mA	T 125 mA L (115 V) / T 63 mA L (230 V)					
DC amplifier							
Bridge excitation voltage ($\pm 5\%$)	V _B	± 2.5 V					
Transducers that can be connected Strain-gauge full bridges	Ω	80...5000					
	m	500					
Permissible cable length between transducer and amplifier		500					
Measuring ranges, adjust. (-1 dB)	Hz	0.05...5					
Measuring range	mV/V	0.2...3.8					
Bridge balance range	mV/V	± 3.8					
Measuring frequency range Butterworth low pass (2nd order)		Nom. val.	-1 dB	-3 dB	Phase del	Rise time	Overshoot
		f _c	(Hz)	(Hz)	.	(ms)	(%)
		(Hz)	4.9	6.9	(ms)	(ms)	5
		5	2.0	3.6	100	54	-
		2	1.0	1.8	140	100	-
		1	0.48	0.86	200	196	-
		0.5	0.21	0.39	290	406	-
		0.2	0.105	0.195	580	900	-
		0.1	0.050	0.099	1070	1800	-
		0.05			2140	3600	-
Noise voltage (typical) without filter	$\mu\text{V}/V_{pp}$	<0.4					
with filter	$\mu\text{V}/V_{pp}$	<0.2					
Max. permissible comm. mode volt.	V	± 2					
Common-mode rejection	dB	>120					
Max. permissible voltage on input	V	± 5					
Linearity deviation	%	<0.02					
Long-term drift over 48 hours After 15 minutes warm-up	$\mu\text{V}/V$	<0.3					
Effect of 10 K ambient temperature change Zero point	$\mu\text{V}/V$	< 0.4					
Sensitivity	%	< 0.05					
Analogue output							
Impressed voltage	V	± 10 V					
Permissible load resistance, min.	k Ω	5					
Internal resistance, max.	Ω	1.5					
Impressed current	mA	± 20 ; 4...20					
Permissible load resistance, max.	Ω	500					
Internal resistance, min.	k Ω	100					
Analogue output can represent gross and net values							
Noise voltage	mV _{SS}	10, typ.					
Residual carrier (300 Hz)	mV _{SS}	5					
Long-term drift over 48 hours (After 30 minutes warm-up)	mV	< 3					
Effect of 10 K ambient temperature change (effect additional to digital value) Zero point	mV	< 5					
Sensitivity	%	< 0.1					

Specifications (continued):

Limit switches		
Quantity		2
Comparison level		Gross, net value
Reference voltage (independently adjust.)	V	-10 ...+10
Factory setup, hysteresis	V	0.1
Setting accuracy	mV	0.33
Response time	ms	25
Control outputs (Limits 1 & 2, Warning)		3
Nom. voltage, ext. supply voltage	V	24
Permissible supply voltage range	V	6...30
Output current, max.	A	0.5
Short-circuit current, typ.	A	0.8
Short-circuit duration		unlimited
Insulation voltage, typ.	V _{eff}	350
Control inputs		2
Input voltage range, LOW	V	0...5
Input voltage range, HIGH	V	10...24
Input current, typ., HIGH level=24 V	mA	12
Taring response time	ms	25
Parameter store (EEPROM)		1 set of data
Display		
No. of digits	mV	4 1/2 figure 7-segment display and various special characters
Digit height	mm	14.7
Type		LED display
Keyboard		Membrane keyboard covering 7 key elements on the circuit board
Effect of operating voltage with changes in the stated range, ref. to full scale		
Zero point	%	0.01
Sensitivity	%	0.01
Nominal temperature range	°C [°F]	-20...+60 [-4...140]
Service temperature range	°C [°F]	-20...+60 [-4...140]
Storage temperature range	°C [°F]	-20...+70 [-4...158]
Protection to IEC60 529		IP40 (whole instrument IP51 (front membrane keyboard))
Protection class		I
Dimensions, overall (WxHxD)	mm	153 x 72 x 212
Front panel dimensions	mm	144 x 72
Front panel cut-out (to DIN 43 700)	mm	138 x 68
Weight, approx.	kg	1

Back panel



Modifications reserved.

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