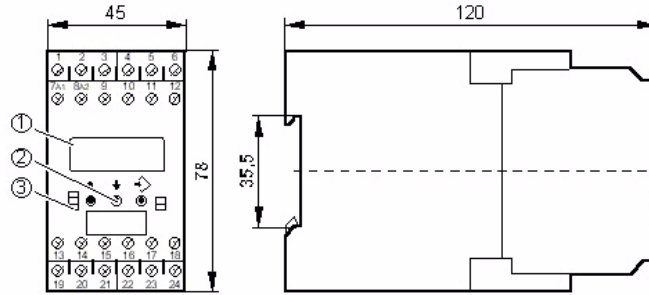


**DD2003**

MONITOR FR-1  
Housing for DIN rail mounting

- 2 relay outputs
- 2 transistor outputs
- Analogue output
- 0...20 mA
- 4...20 mA
- programmable
- Test function without external frequency
- Key function



1: LCD display; 7/14-segment, 2: Programming button, 3: LED

Application	single pulse evaluation system with $\mu$ processor for frequency; rotational speed; speed and machine cycles
Setting range [pulses/min.]	1...60000 (0,1...1000 Hz)
Nominal voltage [V]	110...240 AC/DC (50...60 Hz) / 27 DC; (typ. 24 DC)
Voltage tolerance [%]	-20...+10
Contact rating	6 A (250 V AC); B300, R300
Power consumption [VA]	5 (3 W)
Analogue output	0/4...20 mA (500 $\Omega$ ) limitation: 20,5 mA; accuracy: 1% (of the final value)
Inputs	pnp/npn; Namur (24 V) auxiliary supply: typ. 24 V DC / 15 mA; short-circuit protected threshold pnp: > 12 V on; < 5 V off threshold npn: > 15 V off; < 8 V on input frequency (max): 5 kHz (corresponds to min. pulse length / space 0,1 ms)
Transistor outputs	pnp; external supply switching voltage/current: 24 V DC / max. 15 mA; short-circuit protected
Measuring error [% of the final value]	< 1
Switching function	2 switch points for monitoring overspeed/underspeed and acceptable range
Max. relative air humidity [%]	75 (35°C)
Operating temperature [°C]	-20...+60
Storage temperature [°C]	-25...+80
Protection housing / terminals	IP 50 / IP 20
EMC	EN 61010: 1993 +A2: 1995; EMC 89/336/EEC; EN 50081-1; EN 61000-6-2
Housing material	plastics
Function display	
Switching status LED	green (light when the relay is energised / the transistor is closed)
Input pulses LED	yellow
Function LED	LCD display; 7/14-segment
Connection	dual-chamber terminals 2 x 2,5 mm <sup>2</sup> (2 x AWG 14)

Wiring

- 1: DC Supply voltage (L-)
- 2: DC Supply voltage (L+)
- 3: supply transistor outputs (L+)
- 4: sensor signal pnp
- 5: DC Sensor supply (L+)
- 6: DC Sensor supply (L-)
- 7: AC/DC Supply voltage
- 8: AC/DC Supply voltage
- 9: n.c.
- 10: sensor signal npn

- 11: n.c.
- 12: n.c.
- 13: relay 1 (common)
- 14: relay 1 (normally open)
- 15: relay 1 (normally closed)
- 16: transistor output 1 pnp
- 17: Reset 1 pnp
- 18: Reset 2 pnp
- 19: relay 2 (common)
- 20: relay 2 (normally open)
- 21: relay 2 (normally closed)
- 22: analogue output (+)
- 23: analogue output (-)
- 24: transistor output 2 pnp

Remarks

overvoltage category II; degree of soiling 2

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Essen

— We reserve the right to make technical alterations without prior notice. — GB - DD2003 — 06.03.2003