

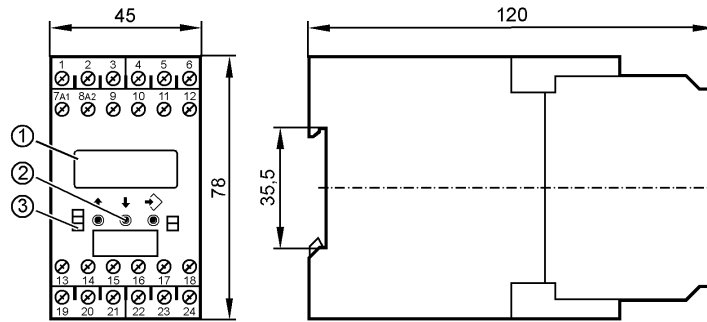
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ecomat200[®]
 DD2003



MONITOR/FR-1 /110-240VAC/DC

Evaluation systems, power supplies



- 1: LCD display; 7/14-segment
- 2: Programming buttons
- 3: LEDs



Product characteristics

MONITOR	
FR-1	
Housing for DIN rail mounting	
2 relay outputs	
2 transistor outputs	
Analog output	
0/4...20 mA	
programmable	
Test function without external frequency	
Key function	
Application	
Application	single pulse evaluation system with μ processor for frequency; rotational speed; speed and machine cycles
Switching function	2 switch points for monitoring overspeed/underspeed and acceptable range
Electrical data	
Nominal voltage [V]	110...240 AC (50...60 Hz) / 27 DC (typ. 24 DC)
Voltage tolerance [%]	-20...+10
Power consumption [VA]	5 (3 W)
Inputs	
Inputs	<p>pnp/npn; NAMUR (24 V)</p> <p>auxiliary supply: typ. 24 V DC / 15 mA; short-circuit protected</p> <p>threshold pnp: > 12 V on; < 5 V off</p> <p>threshold npn: > 15 V off; < 8 V on</p> <p>input frequency (max): 5 kHz (corresponds to min. pulse length / space 0.1 ms)</p>
Outputs	
Relay	
Contact rating	6 A (250 V AC); B300, R300
Transistor	
Transistor outputs	<p>pnp; external supply</p> <p>switching voltage/current: 24 V DC / max. 15 mA; short-circuit protected</p>
analog	
Analog output	0/4...20 mA
Max. load [Ω]	500

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	limitation: 20.5 mA; accuracy: 1 % (of the final value)
Measuring / setting range	
Setting range [pulses/min.]	1...60000 (0.1...1000 Hz)
Accuracy / deviations	
Measuring error [% of the final value]	< 1
Environment	
Ambient temperature [°C]	-20...60
Storage temperature [°C]	-25...80
Max. relative air humidity [%]	75 (35°C)
Protection housing / terminals	IP 50 / IP 20
Tests / approvals	
EMC	EN 61010 : 2001 EMC 89/336/EEC EN 61000-6-3 : 2007 EN 61000-6-2 : 2005
Mechanical data	
Housing materials	plastics
Weight [kg]	0.364
Displays / operating elements	
Input pulses LED	yellow
Output status indication LED	green (lights when the relay is energised / the transistor is closed)
Function display LED	LCD display; 7/14-segment
Electrical connection	
Connection	dual-chamber terminals 2 x 2.5 mm ² (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 Supply voltage (L1)	
8: AC Supply voltage (N)	
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: analog output (+)	
23: analog output (-)	
24: transistor output 2 pnp	
Remarks	
Remarks	overvoltage category II; degree of soiling 2
Pack quantity [piece]	1

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