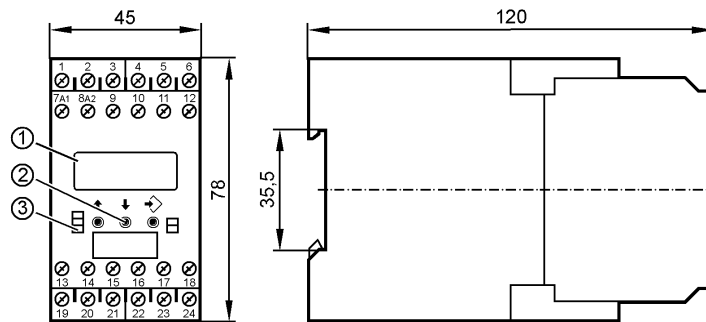


DD2104

MONITOR/FR-1N/ 23-60VAC/DC

Evaluation systems, power supplies

Article available until 31 March 2014



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



Made in Germany

Product characteristics

MONITOR

FR-1N

Housing for DIN rail mounting

NAMUR input with wire monitoring

2 relay outputs

2 transistor outputs

Analogue 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]: 23...60 AC/DC (50...60 Hz) / 27 DC (typ. 24 DC)

Voltage tolerance [%]: -20...+10

Power consumption [VA]: 5 (3 W)

Inputs

Inputs: NAMUR (EN 50227)
 auxiliary supply: typ. 8.2 V DC; short-circuit protected
 wire monitoring: < 0.1 mA / > 6.0 mA
 input frequency (max): 5 kHz (corresponds to min. pulse length / space 0.1 ms)

Outputs

Relay

Contact rating: 6 A (250 V AC); B300, R300

Transistor

Transistor outputs: pnp; external supply
 switching voltage/current: 24 V DC / max. 15 mA; short-circuit protected



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analogue

Analogue output	0/4...20 mA
Max. load [Ω]	500
limitation: 20.5 mA; accuracy: 1 % (of the final value)	

Measuring / setting range

Setting range [pulses/min.]	1...60000 (0.1...1000 Hz)
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Accuracy / deviations

Measuring error [% of the final value]	< 1
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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]	0.38

Displays / operating elements

Input pulses LED	yellow (input pulses); red (wire fault)
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)
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Wiring

- 1: DC Supply voltage (L-)
- 2: DC Supply voltage (L+)
- 3: supply transistor outputs (L+)
- 4: error output pnp
- 5: 8.2 V DC Sensor supply (L-)
- 6: 8.2 V DC Sensor supply (L+)
- 7: AC/DC Supply voltage
- 8: AC/DC Supply voltage
- 9: n.c.
- 10: stepping output sensor signal
- 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



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Remarks	overvoltage category II; degree of soiling 2
Pack quantity [piece]	1

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