

Direction Detection

for inductive sensor NAMUR

- Type G84/124/... with MOS relay
- Type G84/120/... with optocoupler
- Type G84/96/... with relay

- Signal input by inductive sensor NAMUR
- Line fault monitoring for the connected switch
- Function reversal by jumper possible
- Output either with relay contact or semiconductor MOS relay.

Application

The direction detection system analyzes 2 overlapping pulses with a phase shift of 90° and switches the output relay according to the direction of movement by the passing wheel flange over the signal transmitter (wheel sensor).

Operating principle

The complete direction detection system consists of 2 signal transmitters and the direction detection unit. As signal transmitters, the following wheel sensor models can be used:

1. 2N59-1R-200-45 Double wheel sensor according to DIN 19234 (NAMUR)
2. 2N59-1R-200-40 Double wheel sensor according to DIN 19234 (NAMUR)

All signal transmitter conductors are monitored for line fault. The transmitters (wheel sensor) operate contactless, i.e. there is no mechanical link between the wheel flange (trigger element) and the wheel sensor (signal transmitter). When a ferromagnetic material such as the wheel flange moves along the active switching surfaces of the wheel sensor (signal transmitters), the wheel sensor generates an electric pulse which is fed to the direction detection unit. The 2 input pulses need to be shifted by 90° one with respect to the other and need to overlap by 90°.

This pulse sequence is analyzed by the direction detection unit and made available as an output in the form of a contact pulse. These output pulses can be set to a duration length of 5 to 250 ms.

Specifications

Input frequency:	≤ 500 Hz
Temperaturr range:	-25° C to +60° C
Operating voltage:	230 VAC, 115 VAC 48...60Hz, 12VDC or 24VDC ±15%, 3.5 VA, 2.5W
Protection class:	Casing IP 40, class IP 20
Casing material:	Polycarbonate/ABS
Installation:	On base plate or top hat rail DIN 50022
Dimensions:	L 75 x W 55 x H 110 mm
Weight:	AC version 350 g DC version 250 g
Terminal cross-section:	4 mm ²

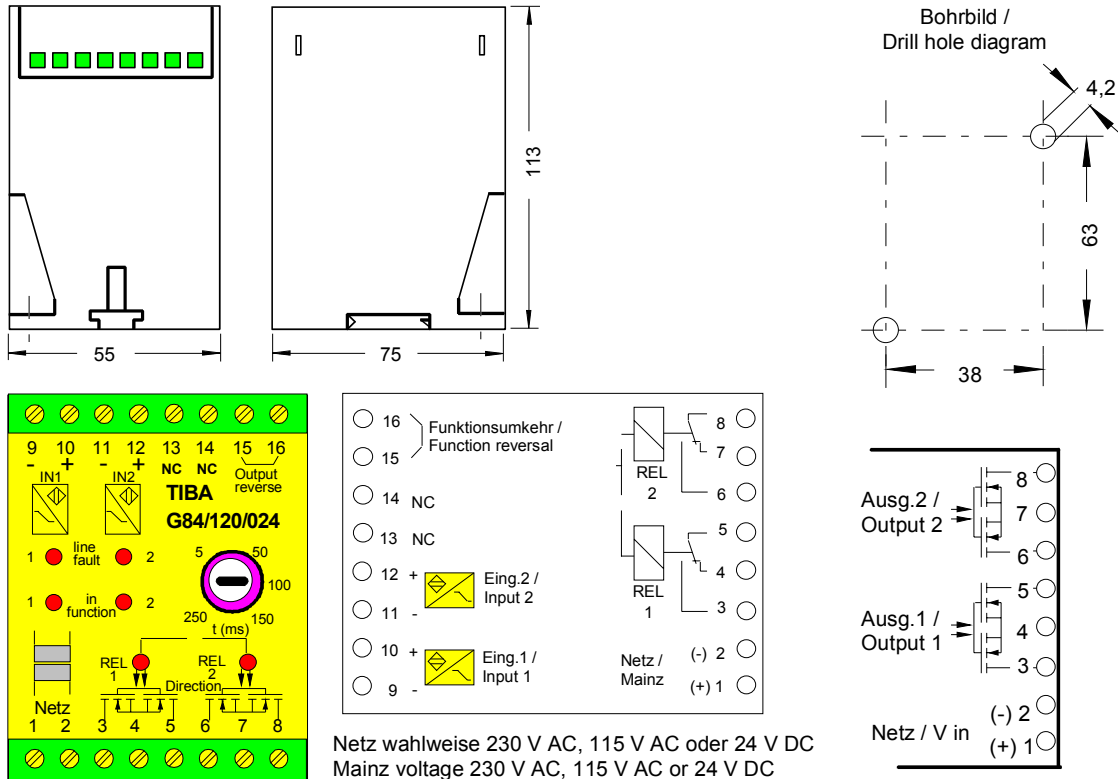
Input circuit:

2 NAMUR inputs	according to DIN 19234
Voltage:	8.2 VDC
Internal resistance:	2.5 KΩ
Switching threshold:	1.55 V
Switching hysteresis:	0.2 V
Line fault monitoring:	Display via LED and output on 1

Output circuit:

Delay:	5...250 ms
Photo MOS Relay	150 V AC/DC, 100mA
Resistance R _{on}	8 Ω
Relay	
Contact rating:	300 VDC / 250 VAC, 8 A 50 W / 2000 AV
Optocoupler rating	
Voltage:	80 V DC
Current:	100 mA
Voltage drop:	≤ 1.5 V at maximum current
Delay:	5 to 270 ms

Dimensions, wiring diagram and operator panel.



Type identification key

G84 96 115

- ↪ Operating voltage 230 = 230 V AC, 115 = 115 V AC, 012= 12V DC or 024 = 24 V DC
- ↪ Direction detection 96 with relay-type output (for other versions, see above)
- ↪ Casing type G84 = casing for use in enclosed cabinets and top hat rail installation

G84/96/230V AC Item No.: 072706
 G84/96/115V AC Item No.: 055611
 G84/96/12V DC Item No.: 055777

G84/96/24V DC Item No.:055778
 G84/120/24V DC Item No.: 058464
 G84/124/24V DC Item No.: 072584

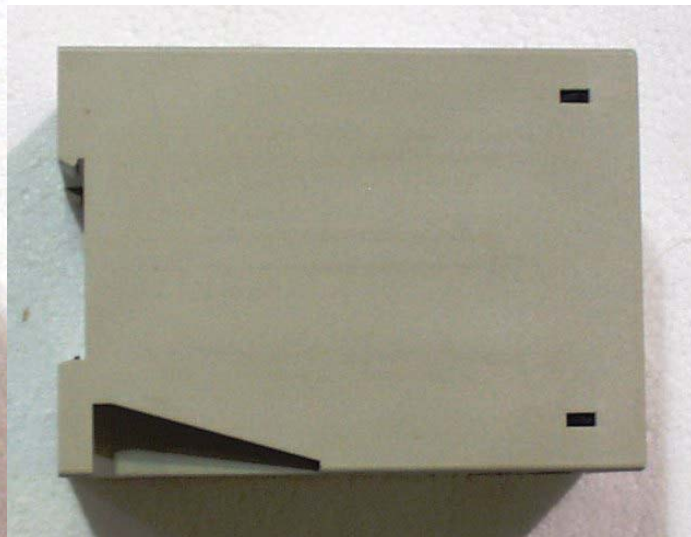
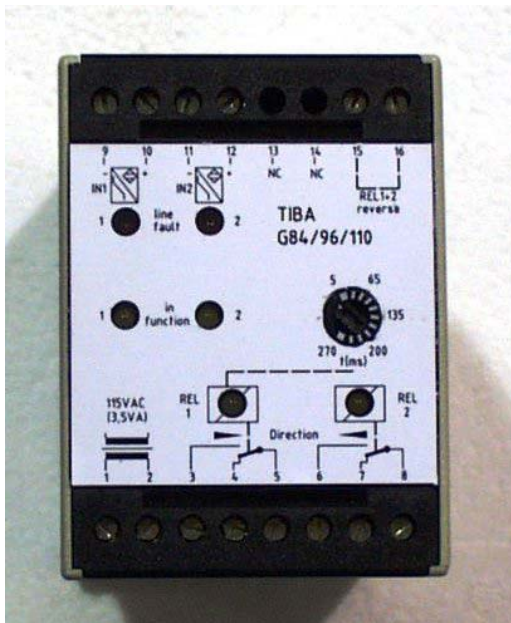
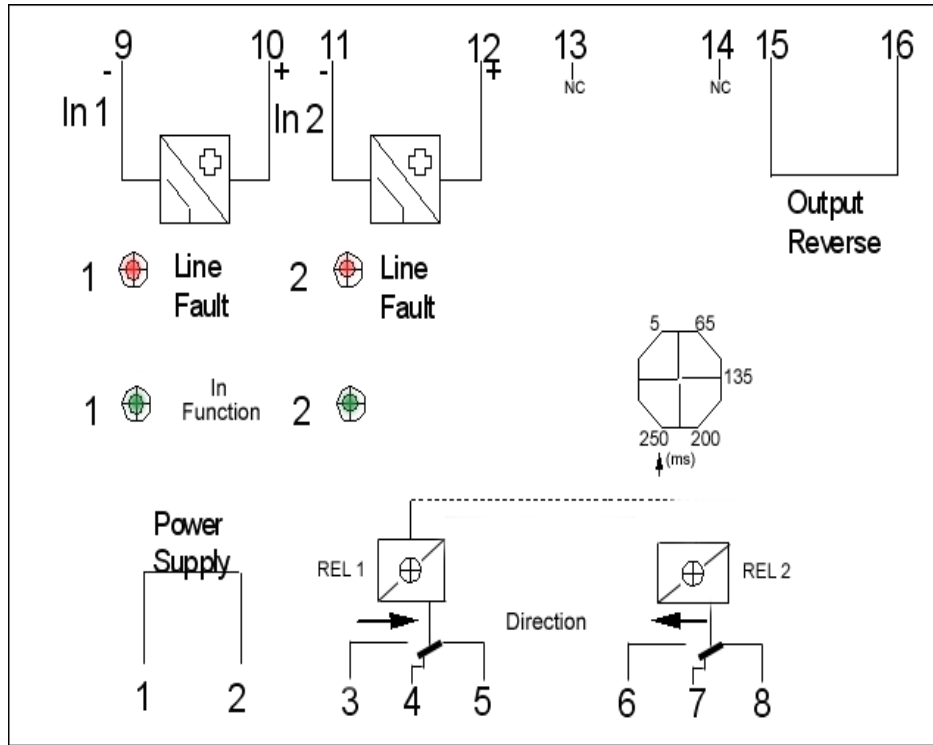
TERMINAL DESCRIPTION G84/96/*

Terminals	
1 / 2	Power Supply 12 VDC ±15% / 3.5 VA
3 / 4 / 5	Output Relay 1
5 / 6 / 7	Output Relay 2
7 / 8	Output 3
9 / 10	Input 1
11 / 12	Input 2
13 / 14	Not connected
15 / 16	Output reverse by jumper

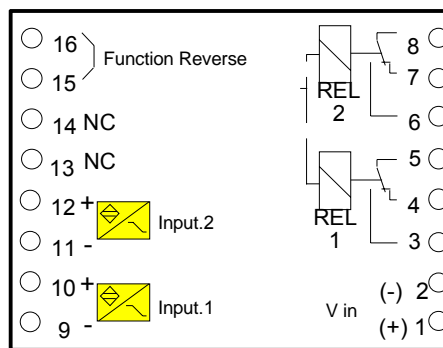
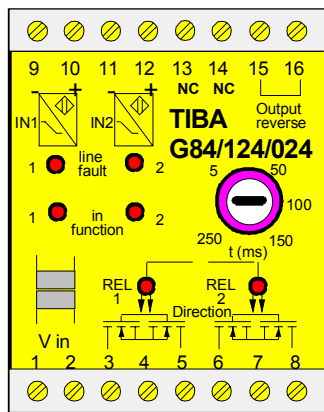
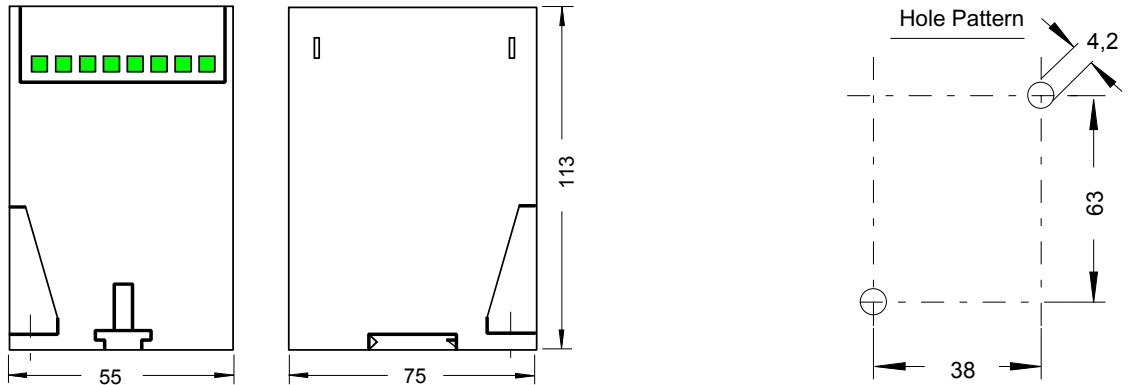
U_{max}: 300V -/250V
 I_{max}: 8A
 P_{max}: 50W/2000VA

U_c = 8V ±2.5%
 R_i = 2.5 KOhm ±5%

OUTPUT TERMINAL DIAGRAM - G84/96/*

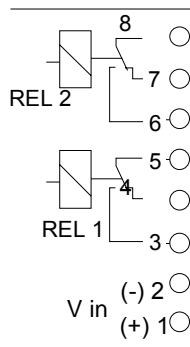


Dimensions, connection diagram and control panel.

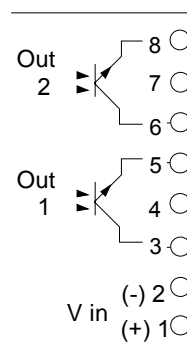


Netz (Main input voltage)
Versions in 230VAC, 115VAC or 24VDC

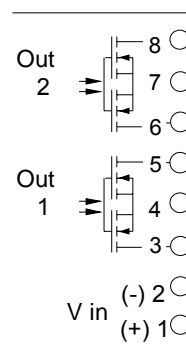
Electrical models



-96-

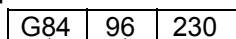


-120-



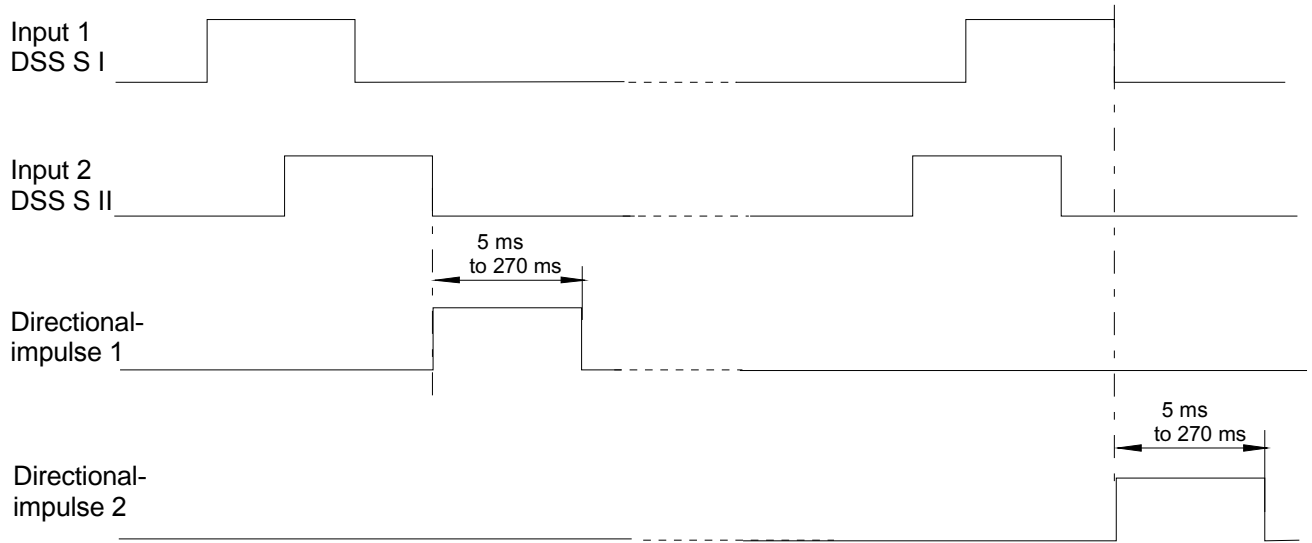
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Type Code



- ↳ Input operating voltage 230 = 230 V AC, 115 = 115 V AC or 024 = 24 V DC, 012 = 12 V DC
- ↳ Directional versions: 96 with relay output
120 with Optocoupler output
124 with Mos Relay output
- ↳ Body markings G84 = Cabinet housing for DIN Rail or wall mounting

Flow Chart (G84/120/24)



Leitungs-
störung = Line Fault

Optok. 1+2 = Function reverse

Richtung = Direction