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1. EINFÜHRUNG

This peripheral module from the compact COMATRELECO_DIN industrial series (grid dimension 17,5mm) is designed as a 2-channel interface module.

As a switching amplifier with time response, very short impulses ($\geq 0,5\text{ms}$) can be lengthened for simple processing by the following controller (SPS).

The triggering can be done by 3 wire proximity sensors, contacts or also by Namur sensor.

One limited short-circuit-proof semiconductor output each is available as outputs for $0,15\text{A}/\leq 45\text{V}$.

Thus direct relays or valves can also be controlled.

The drain limitation is at $\leq 300\text{mA}$.

Subject to technical alterations

2. ORDER DESIGNATION

Pulse lengthener COMAT CPF22/DC24V

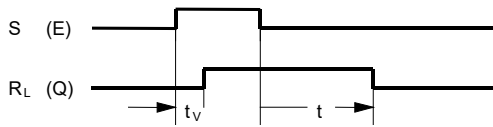
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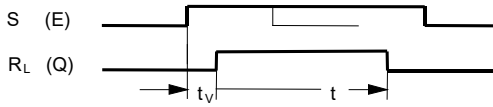
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3. FUNCTION

3.1. A- Function

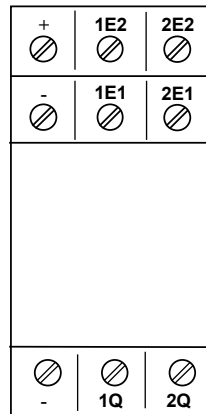


3.2. K-Function



4. PIN CONFIGURATION, CIRCUIT

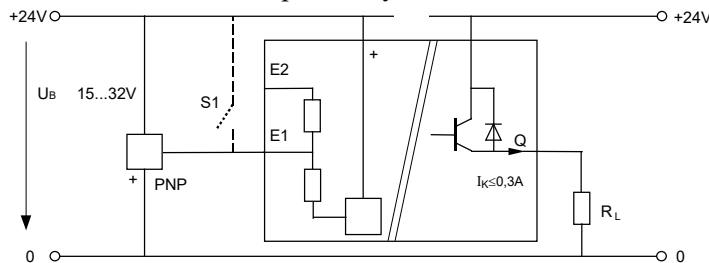
4.1. Connection



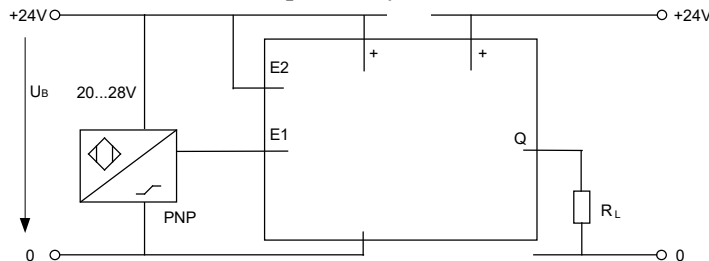
4.2. Application circuit

Shown for 1 channel

4.2.1. Activation with 3-wire proximity sensor



4.2.2. Activation with Namur proximity sensor



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5. TECHNICAL DATA

5.1. General data

5.1.1. Mechanical Data

Case	DIN case C3, grid dimension 17,5mm
Protection	Case. IP40; terminals IP20
Case material	Noryl SE1 = UL94V-1 (Xantar MX100)
Weight	approx. 60g.
Fastening	TS35 DIN/EN 50022 Screw mounting
Vibration resistance	IEC 68-2-6/FC IEC 571
Shock resistance	TW80 (>>20g)
Connections	Screw terminals 2 x 1,5mm ² / 2 x 2,5mm ² clamp area 3,3 x 4mm

5.2. Ambient conditions

Storage temperature	-40°C ÷ +85°C
Operating temperature	-25°C ÷ +60°C
Relative humidity	10 ÷ 95% non condensing
Climatic class DIN 40040	HUF

5.3. Electrical data

5.3.1. Power supply

Nominal supply voltage (switching voltage)	24V
Supply voltage range (switching voltage range)	15 ÷ 32V DC
Power consumption	5 ÷ 15mA per channel/24V
Parallel load energy	Single pulse 600W/100µs 500V / 50mWs / 1,5Hz Limitation voltage: 56V

5.3.2. Trigger signal

5.3.2.1. Input XE1

Input resistance	Ri 8k5/24V
Input level	inactive active
	-32 ÷ 3V ≥ 12V
Max. input voltage	±32V (100% ED)
Parallel load energy	Single pulse 500V/1ms 500V / 50mWs / 1Hz

5.3.2.2. Input XE2

Input resistance	20k/48V
Input resistance XE2-XE1	11k
Input level	inactive active
	-60 ÷ 5V ≥ 18V
Max. input voltage	±60V
Parallel load energy	Single pulse 750V/1ms 500V / 50mWs / 1Hz

5.3.2.3. Namur application

If the Namur sensor is used at XE1, the following conditions apply:

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XE2 +20 ÷ 28V

5.4. Output XQ

Output circuit	Transistor PNP
Switching voltage	≤45V
Switching current	150mA
Short-circuit limitation	180 ... 300mA
Voltage drop	≤ 1,5V
Cut off current	≤ 100μA
Cut-off voltage limitation	-56V against + potential
Admissible limiting energy	≤ 50mWs/1Hz Single pulse 600W/100μs
Short circuit protection	≤5s/24V
Electrical isolation input/output	4kV
Coupling capacity input/output	≤pF

Note

In view of the current limitation, capacitive loads can be switched without difficulty (e.g. long lines). The cut-off voltage limitation is sufficient for e.g. max. 3 standard industrial relays or corresponding solenoid valves. Additional external diodes are superfluous.

5.5. Time response

5.5.1. Triggering

Minimum trigger duration 0,5/2,5ms
reversible separate for each channel

5.5.2. Time function

Time function A, K
reversible jointly for both channels

Time range 50ms/200ms⁺¹⁵ -⁵ %
reversible separate for each channel

Repeat accuracy ≤ 0,1%

Temperature dependence ≤ 2%

Voltage dependence ≤ 0,5%

6. OPERATION

6.1. DIP switch setting

t_{VE} input filter setting for suppression of interference's

t _{V1E} 2,5ms	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0,5ms
t _{V2E} 2,5ms	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0,5ms
Function 1,2 A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	K
t _{1Q} 50ms	<input checked="" type="checkbox"/>	<input type="checkbox"/>	200ms
t _{2Q} 50ms	<input checked="" type="checkbox"/>	<input type="checkbox"/>	200ms

6.2. Function

In contrast to the time setting which is possible for each of the channels separately, the functional setting can only be done jointly for both channels.

6.3. Display

The LED display lights up while the relevant output Q is activated.

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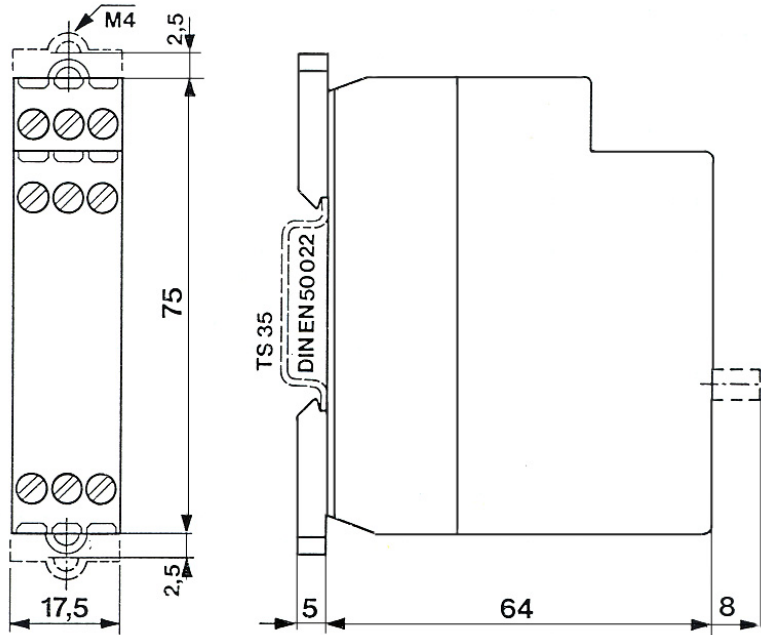
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7. **STANDARDS, SPECIFIKATION**

Vibration	IEC 571; IEC 68-2-6-FC
Shock	TW 80
Fastening	DIN/EN 50022
Dimensions	DIN 43660

8. **CASE**



9. **BRIEF DESCRIPTION**

The CPF22 circuit is constructed with the most up-to-date components and makes use of SMD technology. Extreme reliability and long service life are ensured thanks to suitable circuit design and the right selection of components.

The functions:

- Discretionary input filter setting
- 2 inputs with the possibility of Namur sensor handling (DIN 19234) or simple logical operations (signal inversion; $A \wedge B$), etc.
- time functions A resp. K with the reversible output-pulse time 50/200ms with the properties of the electrical isolation for greater noise immunity and separate power supply.
- The output with limited short-circuit protection, suitable for inductive and lamp loads, for use as peripheral equipment to SPS systems or other automation components, or as independent function module for the direct control of contactors and valves.

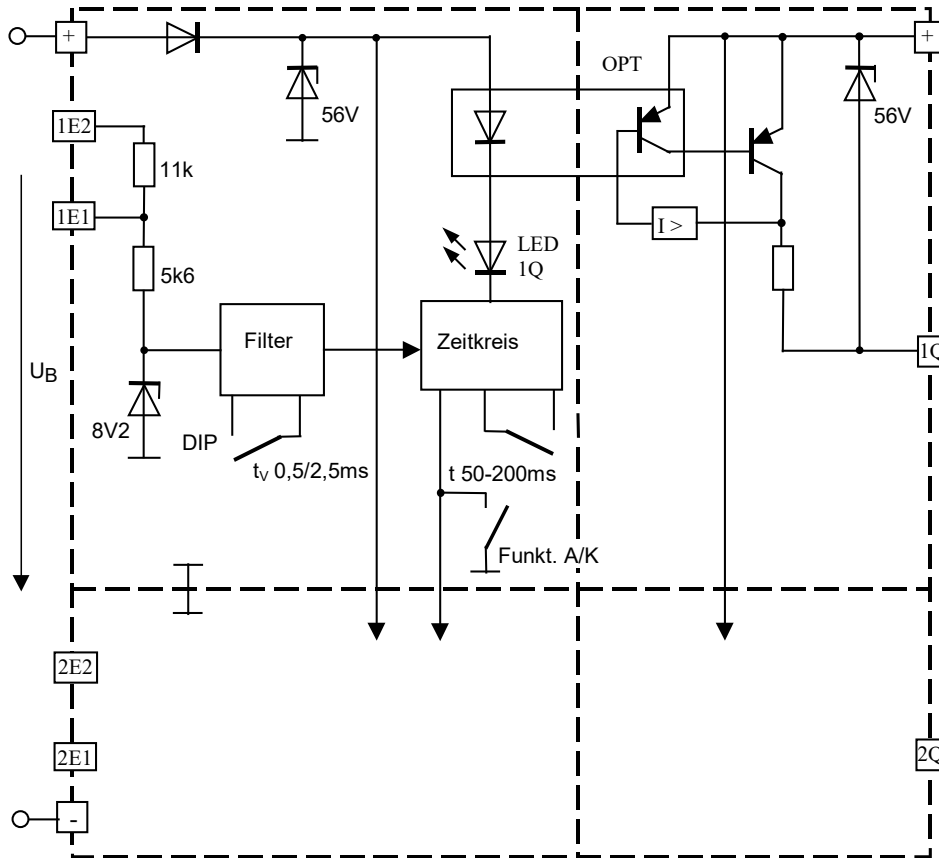
The 2-channel design in a single case allows maximally economic use of the equipment.

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10. BLOCK DIAGRAM



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