

■ FT 9004 Frequency divider for quadrature encoders

Characteristics

- Divider for incremental encoder
- A/B IN, A/B out
- Dividing factor from 2 to 999
- Divider adjustment by DIP-Switches
- Input level adjustable: 5, 12 or 24 V
- Low power consumption
- High reliability
- Standard housing for DIN rail mounting



General

The **FT 9004** is an easy to handle frequency divider. The unit is designed for dividing frequencies respectively pulse chains of incremental encoders. Two input pulse chains 90° out of phase are divided by an user adjustable value and are outputted as two pulse chains 90° out of phase. It is understood that Up-down counting is possible without loss of pulses. A second function can be selected by an internal DIP-switch. Using this function input A is used as input for a pulse chain, input B is used for controlling the direction of the pulse chain. As described above the output signals of the output channels A and B are two pulse chains 90° out of phase. Using uneven dividing factors <10 may result in a phase shift which differs from 90°

Input channels

All input channels are optically isolated. Applied sensors must have pnp or push-pull output circuits (source currents > 5 mA). The input frequency for the two input channels A and B may not exceed 90 kHz.

Output channels

There are two output channels A and B. They are performed as open-collector transistor outputs and are able to switch currents up to 50 mA and voltages up to 30 V. For correct operating external pull-up-resistors are necessary.

Digital adjustment

There are two internal 8-pol DIP-switches for adjustments provided. For adjusting the case must be opened. Following adjustments are available:

- A 3-decade divider value can be selected using BCD-code. Divider values from 2 to 999 are allowed.
- One DIP-switch is provided selecting the desired input function, two pulse chains, 90° out of phase or one pulse chain and a direction input signal.

Attention! Changes of DIP-switch settings become active only after a power up.

Power supply

The FT 9004 is designed for a power supply voltage of nominal 24 VDC. Voltages from 18 to 36 VDC are allowed. The power supply input is isolated from all input and output channels.

Housing

The FT 9004 is provided for DIN-rail mounting according to EN 50022. The case is of Polyamid PA 6.6. For connecting inputs, outputs and power supply there are 12 screw terminals provided.

Technical specifications

Input channels

Input voltage level	: 24 V, 12 V, 5 V selectable
Tolerance	: +/-20% of selected level
Isolation	: 500 V
Input current	: > 5 mA, pnp or push-pull
Frequency channel A and B	: 0... 90000 Hz
Input channel C	: reserve

Divider value adjustment

3-decade	: 2...999
----------	-----------

Outputs

Open-collector current	: max. 50 mA
Open collector voltage	: max. 30 VDC

Power supply

Voltage	: 18...36 VDC
Current	: max. 15 mA (24 V DC)

Case

Dimensions	: 99 x 114,5 x 17,5 mm
Screw terminals	: 12
Protection	: IP40
Mounting	: EN 50022 (DIN-rail mounting)

Environmental

CE	: 2014/30/EU, 2014/35/EU, 2011/65/EU+2015/863
Operating temperature	: -5 to +55 °

Ordering Information

FT 9004 -				
				Reserve
				0 reserved
				1 reserved
				Frequency inputs
				0 Standard
				1 48 V
				Power supply
		0	4,5 ... 9 V DC, (Option)	
		1	9 ... 18 V DC, (Option)	
		2	18 ... 36 V DC, (Standard)	
		3	36 ... 48 V DC, (Option)	