

# PULSE INTERFACE



- Pulse stretcher
- Pulse inverter
- Pulse amplifier
- Programmable functions
- S0 input
- Integrated NAMUR supply



## Applications:

Pulse stretcher for use in processes where the pulses are short and the connected equipment has a long scan time. ● Interface between pulse sensors and relays, electromechanical counters, etc. ● Amplifier for inductive, capacitive, or optical sensors.

## Technical specifications:

### Input:

Programmable input for connection of standard pulse generators as well as NAMUR input according to DIN 19234 and S0 input according to DIN 43864. By contact input the filter 10 ms / 50 Hz should be switched on.

The input may be programmed to trig on leading edge or trailing edge of the input pulse.

### Outputs:

Outputs PNP, NPN, TTL, and opto-isolated NPN.

The TTL output is protected by a PTC resistor.

The output pulse time may be programmed as direct pulse (output pulse width = input pulse width). The variable pulse width is adjustable in two ranges between 10...100 ms and 100...1000 ms. Fixed pulse width = 50 ms.

A LED in the cassette front indicates signal on input.

Active output is established by connecting the PNP and the NPN output and by inverting the NPN output (JP8 1-2).

## Electrical specifications:

### Specifications range:

-20°C to +60°C

### Common specifications:

Supply voltage.....	19.2...28.8 VDC
Internal consumption.....	1 W
Isolation test / operation.....	1.4 kVAC / 150 VAC
Calibration temperature.....	20...28°C
Auxiliary voltages:	
NAMUR.....	8 VDC, I <sub>max.</sub> : 8 mA
S0 .....	Max. 27 VDC, I <sub>max.</sub> 27 mA, I <sub>min.</sub> 800 Ω, load 10 mA
EMC immunity influence .....	< ±0.5%
Humidity .....	< 95% RH (non-cond.)
Dimensions (HxWxD).....	80.5 x 35.5 x 84.5 mm
Tightness .....	IP50
Weight .....	115 g

### Electrical specifications:

#### Input:

Max. frequency.....	10 kHz
Min. pulse width .....	50 μs
Max. frequency (with input filter) .....	50 Hz
Min. pulse width (with input filter).....	10 ms

#### Output:

Output voltage:	
PNP .....	V <sub>supply</sub> -1.5 VDC
NPN .....	Max. 30 VDC
NPN R <sub>ON</sub> .....	30 Ω
TTL.....	5 VDC ±0.5 V
Output current:	
PNP, NPN .....	100 mA (140 mA for 50 ms at 50% duty cycle)
TTL.....	10 mA
Minimum pulse length .....	50 μs
Maximum pulse length .....	1 s

#### Opto-coupled output:

Max. frequency.....	5 kHz
Pulse width .....	≥ 0.1 ms
Load .....	100 mA / 30 VDC
Voltage drop at 25 mA / 100 mA.....	< 2.0 VDC / < 4 VDC
Isolation test / operation.....	1.4 kVAC / 150 VAC

#### GOST R approval:

VNIIM, Cert. no..... Ross DK.ME48.V01899

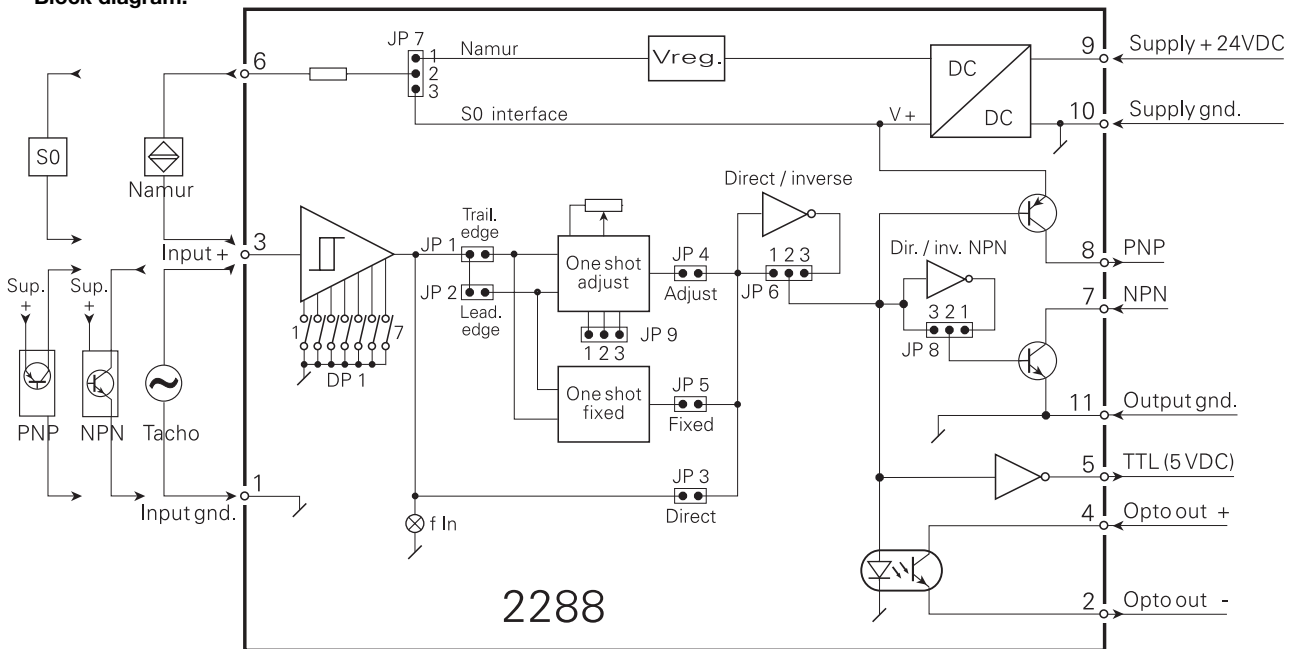
#### Observed authority requirements: Standard:

EMC 2004/108/EC	
Emission and immunity.....	EN 61326
LVD 73/23/EEC.....	EN 61010-1

Order: 2288

Type	Sensor	Input filter	Trig	Output pulse width	Output
2288	Tacho : A	Spec. : 0	Trailing edge : A	Spec. : 0	Direct : A
	NAMUR : B	> 10 ms : 1	Leading edge : B	Direct : 1	Inverse : B
	NPN : C	(max. 50 Hz)		Adjust. : 2	
	PNP : D	None : 2		(10...1000 ms)	
	TTL : E			Fixed (50 ms) : 3	
	S0 : F				
	Spec. : X				

**Block diagram:**



**Programming:**

JUMPER PROGRAMMING		
	ON	OFF
Trailing edge	JP1	JP2
Leading edge	JP2	JP1
Pulse width 1:1	JP3	JP4, JP5
Pulse width fixed 50 ms	JP5	JP3, JP4
Pulse width adjustable	JP4 <b>ON</b> and	JP3, JP5
10...100 ms	JP9 in pos. 2-3	
100...1000 ms	JP9 in pos. 1-2	
Direct output	JP6 in pos. 1-2	
Inverse output	JP6 in pos. 2-3	
NAMUR supply	JP7 in pos. 1-2	
S0 supply	JP7 in pos. 2-3	
Active output	JP8 in pos. 1-2	
Normal output	JP8 in pos. 2-3	

DP1: INPUT TYPE		
INPUT	ON	OFF
Tacho	5	1,2,3,4,7
NAMUR	3,5 and JP7 in 1-2	1,2,4,7
NPN	1	2,3,4,5,7
PNP	2	1,3,4,5,7
TTL	4	1,2,3,5,7
S0 (DIN 43864)	3,6,7 and JP7 in 2-3	1,2,4,5
Input filter: > 10 ms/max. 50 Hz	6	

Sensor	Trig level		Input resistance
	VTL	VTH	
Tacho	200 mV	350 mV	> 100 kΩ
NAMUR	1.2 mA	2.1 mA	
NPN, PNP	4.5 V	5.5 V	3.3 kΩ
TTL	0.8 V	2.0 V	> 100 kΩ
S0 input	2.2 mA	9.0 mA	