

WPT sensors

Type CWPTA...

Wheel pulse transducers

For the detection and measurement of wheel rotation for the calculation of wheel speed, vehicle speed and traveled distance.

- Easy installation
- Compact design and lightweight
- Rugged housing
- Reverse-polarity protection
- Degree of protection IP67

Description

The WPT Sensors are universally adaptable sensors for the detection of the wheel speed rotation. Regardless of the powertrain of the vehicle (electrical, hybrid, internal combustion, hydrogen, etc), the WPTs are the perfect sensors for the measurement of the wheel motion. The sensors deliver from 10 and up to 5,000 pulses per wheel rotation (standard, other pulse values available on request).

The WPT Sensors are compact and lightweight. For maximum flexibility, the incremental transducer for the wheel pulse transducer unit can be exchanged quickly and easily.

Given that the estimation of many state variables depend on the longitudinal slip and on the dynamic circumference of the wheels, the measurements generated by the WPT sensors form the basis for the calculation of wheel speed, wheel acceleration, vehicle speed, vehicle acceleration, traveled distance, and much more.

Application

The WPT Sensors can be used, among others, for the following measurement applications:

- Measurement of the longitudinal slip of the wheel
- Acceleration and braking tests
- ABS testing
- Measurement of the wheel speed difference between different wheels (each wheel requires a WPT sensor)



CWPTA_000-811e-05.24

Technical Data

Basic mechanical data

Permissible rotational speed		
Maximum	min ⁻¹	6,000
Continuous operation	min ⁻¹	3,000
Available pulse values		
Standard	pulses/U	10 ... 5,000
Other	pulses/U	on request
Operating temperature range	°C	-40 ... 85
Degree of protection		IP67
Schock resistance (DIN IEC 68-2-27)	m/s ²	2,500
	ms	6
Vibration resistance (DIN IEC 68-2-27)	m/s ²	100
	Hz	10 ... 2,000

General electrical data

Max. permissible load/channel	mA	±20
Max. pulse frequency	kHz	300
Reverse polarity protection for the power supply		yes
Output signal ¹⁾		2 channels A+B 90° shifted 1 zero impulse/ rotation
Electrical connection ²⁾		8-pin M12

Electrical data RS-422 (TTL compatible)

Power supply, U _B	VDC	5 ... 30
Power consumption without load		
Typical	mA	40
Maximum	mA	90
Signal level		
High (min.)	V	2.5
Low (max.)	V	0.5
Rise and fall time (max.)	ns	200
Short-circuit proof outputs		max. 1 connected channel

¹⁾ All signals with inversion

²⁾ Radial flange connector on the housing, pins individually sealed, IP67 in unplugged condition

Dimensions

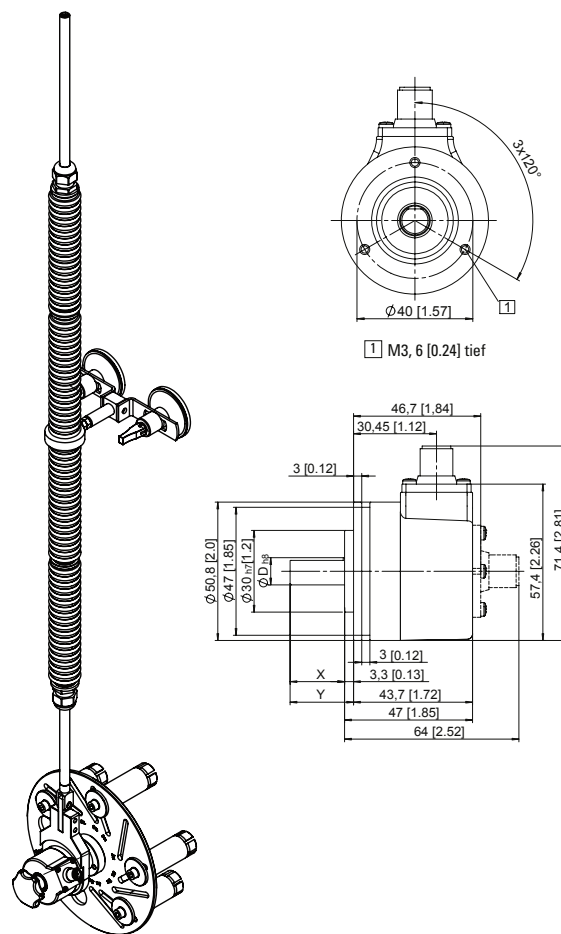


Fig. 1: WPT sensor dimensions (left side: including holder WPT)

Mounting

WPT sensors mount to the wheel lug nuts via adjustable collets. The torsional protection rod (which maintains rotation around the wheel axis) is attached to the vehicle body with suction holders (see next page suitable accessories).



Fig. 2: WPT sensor mounted at the front wheel

Included accessories

- Power cable (5 m)
- Holder WPT
- Open-end wrench 10-13
- Hexagon wrench
- Transport case, complete
- Software/manuals

Type/Art. No.

18012536
18012627
55061923
55061933
55089428
55082182

Optional accessories

- Collet 17 mm
- Collet 19 mm
- Collet 21 mm
- Centering star 5-lug
- Centering star 4-lug
- Centering star 3-lug
- Suction holder for attaching the safety line
- Signal cable, l = 5 m, IP67, Open End
- Signal cable, l = 10 m, IP67, Open End,
- Signal cable, l = 5 m, 3 pin Lemo
- Signal cable, l = 10 m, 9 pin D-Sub

Type/Art. No.

22000263
22000264
22000265
18012420
18012419
18012421
55065535
18012532
55064382
55064393
55064484

Other specifications as well as truck adaptations available on request

Ordering key

Type CWPTA

Sensor head

10 pulses	1
100 pulses	2
250 pulses	3
1,000 pulses *	4
2,000 pulses	5
3,600 pulses	6
500 pulses	7
360 pulses	8
5,000 pulses	9

Signal cable / converter

Without cable	0
9-pin D-Sub, l = 5 m	1
9-pin D-Sub, l = 10 m	2
Open end, l = 5 m	3
Open end, l = 10 m	4
3-pin LEMO, l = 5 m	5

Mount

Without mount	0
Mount for cars *	1

* Standard configuration

Ordering example

Type CWPTA411

WPT sensor, 1,000 pulses, 9-pin D-Sub, l = 5 m, mount for cars