

# Torque transducer Type DRBK with speed detection



## Special features:

- Very short construction
- Broad input voltage range
- Current output and voltage output
- Measurement accuracy:  
 $\leq 0,5\%$  of full scale
- Measurement ranges from 5 to 1000 Nm
- Contactless transfer of measured signal
- Approved strain gauge technology
- Internal measurement amplifier
- Speed detection optional available
- Simple power supply
- Multipurpose use

## Description:

The torque transducers series DRBK are suitable for applications in laboratory as well as in industrial environment because of their compact outline and their multiple mounting options. The contactless transmission of supply voltage and measuring signal enables continuous operation with low wear out and no service.

For varying applications these transducers are available

also with optional speed detection. The integrated measurement amplifier is supplied with 11,5 to 30 V DC and outputs an analog signal of 0 to  $\pm 5$  V and also a current output of 10 mA  $\pm 8$  mA. Due to the broad range of supply voltage the transducer can be operated directly at a PLC. This transducer should be used only with the especially designed couplings.

## Technical Data:

Supply voltage:	11,5 to 30V DC	Option speed:	(n)
Current consumption:	ca. 200mA	Output:	Open- Kollektor
Rise time 10-90%	1ms	Internal Pull Up:	4,7k $\Omega$ (5 V level)
Limit frequency -3dB	1kHz	External Pull Up:	24 V max / 20mA
Voltage output:	0 to $\pm 5$ V	Pulses / rev:	60
Internal resistance:	100 $\Omega$		
Current output:	10 $\pm$ 8mA		
Burden at UB=12V	250 $\Omega$		
Burden at UB=24V	500 $\Omega$		
Ripple:	< 100mVss	<b>Ordering example :</b>	
Nonlinearity:	< 0,3%	<b>DRBK10-n</b>	
Hysteresis:	< 0,3%	Torque transducer measurement range 10 Nm	
Deviation at zero point:	$\leq \pm 100\text{mV} / \pm 200\mu\text{A}$	Option speed detection	
Max. Measuerment fault:	0,5% (bez. a. d. Endwert)	<b>Available accessories :</b>	
Operating temperature:	0-60°C	Measurement cable, Couplings, Evaluation device	
Compensated temperature:	5-45°C		
Temperature fault:			
Zero point:	0,05%/K		
Sensitivity:	0,02%/K		
Mechanical overload:	100%		
Internal protection:	IP 40 DIN 40050		
Connection:	12pin connector		

The values for axial and radial load refer to the non-fixed housing

Size	Measure- ment range [Nm]	Spring constant C [Nm/rad]	Mass moment of inertia J [g·cm <sup>2</sup> ]			Maximum axial load [N]	Maximum radial load [N]
			Total	Drive side	Measure- ment side		
I	5	1100	134	116	18	930	25
	10	2700	135	117	18	930	45
	20	5400	136	117	19	930	90
II	50	20 x 10 <sup>3</sup>	398	292	106	1580	210
	100	36 x 10 <sup>3</sup>	405	296	109	1580	420
	200	52 x 10 <sup>3</sup>	424	305	119	1580	845
III	500	290 x 10 <sup>3</sup>	3350	1879	1471	3920	1420
	1000	420 x 10 <sup>3</sup>	3519	1963	1556	3920	2875