

Datasheet

Torque Sensor

DRBK + DRBK-A

Torque ranges from 0,5 Nm to 1000 Nm



Features

- Low-Cost Torque sensor
- Current output and voltage output
- Very short
- Measurement accuracy: $\leq 0.5\%$ of full scale
- Contactless transfer of measurement signal
- Proven strain gage technology
- Integrated signal amplifier
- Single power supply
- wide range of applications
- Optional speed measurement

The Series DRBK torque sensors are suitable for lab and industrial applications because of their small size and multiple mounting options.

As supply voltage and output signal are transmitted without contact, the device can operate continuously with low wear and no maintenance. These sensors are also available with speed measurement for a host of applications.

Extra Features DRBK-A

- Simultaneous speed/torque indication
- 4-segment display with sign
- Peak mode (clockwise only)
- Indication area on LCD display 30 x 11 mm
- Speed indication updated 1x sample/second
- Torque updated 1,000 samples/second

Series DRBK-A torque sensors are custom made for applications where an extra analyzer should not be used or is not needed.

Production monitoring data can be clearly displayed at very small cost!

Technical Specifications: DRBK + DRBK-A

Supply voltage:	11,5 to 28,8 V DC
Current consumption:	DRBK approx. 200 mA / DRBK-A approx. 250 mA
Rise time 10-90 %:	1 ms
Limit frequency –3 dB:	1 kHz
Voltage output:	0 to ± 5 V
Internal resistance:	100 Ω
Current output:	10 \pm 8 mA Burden max 500 Ω
Ripple:	< 100 mVpp
Nonlinearity:	< 0,3 %
Hysteresis:	< 0,3 %
Deviation at zero point:	$\leq \pm 100$ mV / ± 200 μ A
Max. measurement error	0,5 % (FS / of full scale)
Operating temperature:	0 - 60 °C
Compensated temperature range:	5 - 45 °C
Temperature error	
Zero point:	0,05 % / K
Sensitivity:	0,02 % / K
Mechanical overload:	100 %
Internal protection:	IP40
Connection:	12pin- connector

EMV Immunity for interference (DIN EN 61326-1 / EN 61000-6) *1

Enclosure	Severity	Criterion
HF line interference 150 kHz - 80 MHz (AM)	3 V	A
(ESD) Electrostatic discharge	Air 8 kV Contact 4 kV	A A
Enclosure		
Electromagnetic Field		
80 MHz - 1000 MHz (AM)	10 V/m	A
80 MHz - 2700 MHz (AM)	10 V/m	A
Leads - Connection Cable		
Burst (fast transients)	2 kV	A
Surge voltage (Surge)	1 kV	B
Interference Emission (EN 61326-1 / EN 55011)		
Disturbance Voltage (Electromagnetic Disturbances)	-	Class B (150 kHz - 30 MHz)
Radiated Emission (Electromagnetic Disruption axis)	-	Class B (30 MHz - 1000 MHz)

Speed Option (n) only DRBK *2

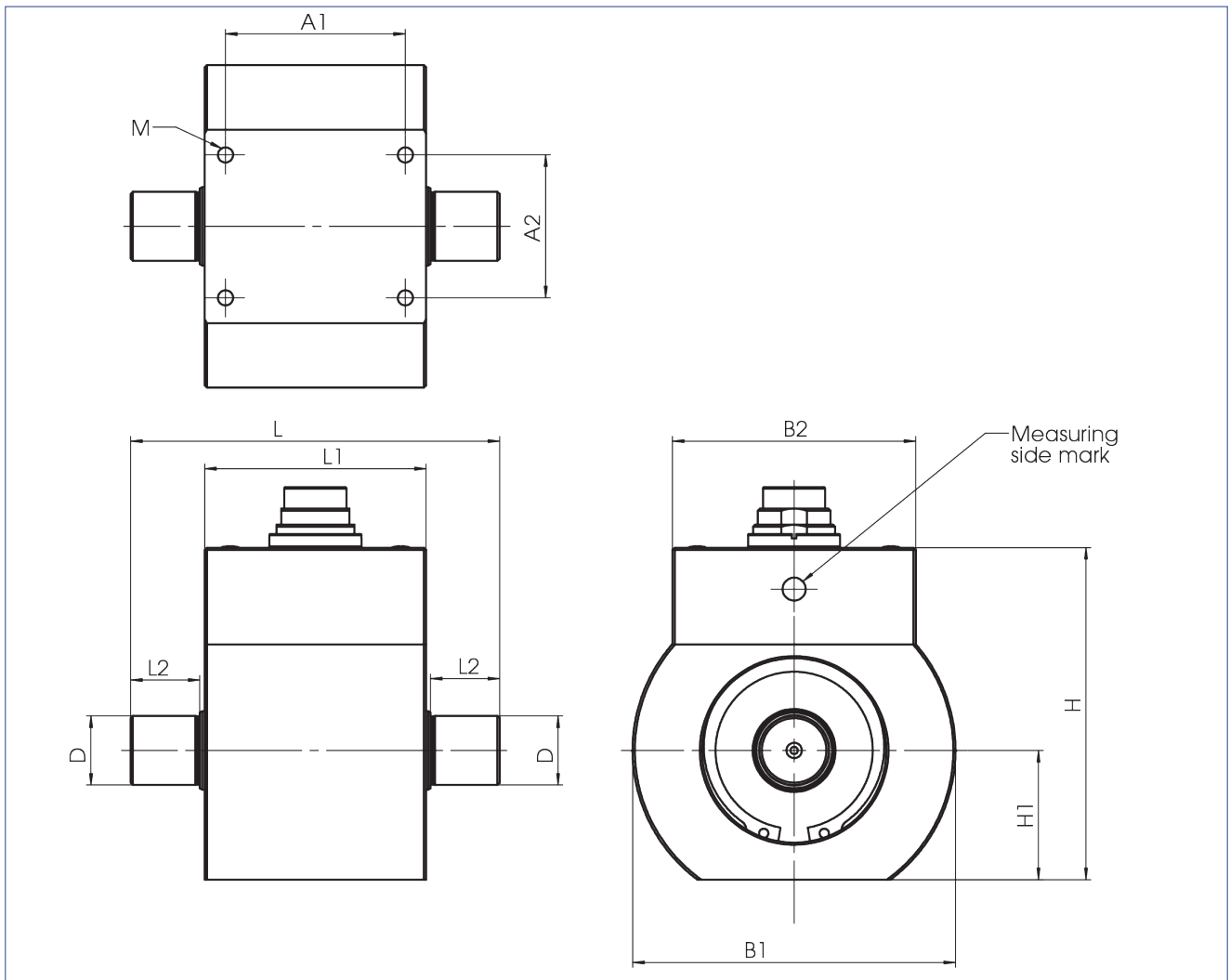
max. rev.:	up to 10 000 min ⁻¹ *3
Output:	Open-Collector
Internal pull up:	4,7 k Ω (5 V level)
External pull up:	24 V max / 20 mA
Pulses/rev.:	60

*1 Severity / Criterion: industrial environment;
Cable length \leq 30m.
Application not outside buildings.

*2 standard on DRBK-A

*3 by proper external connections til speed max.

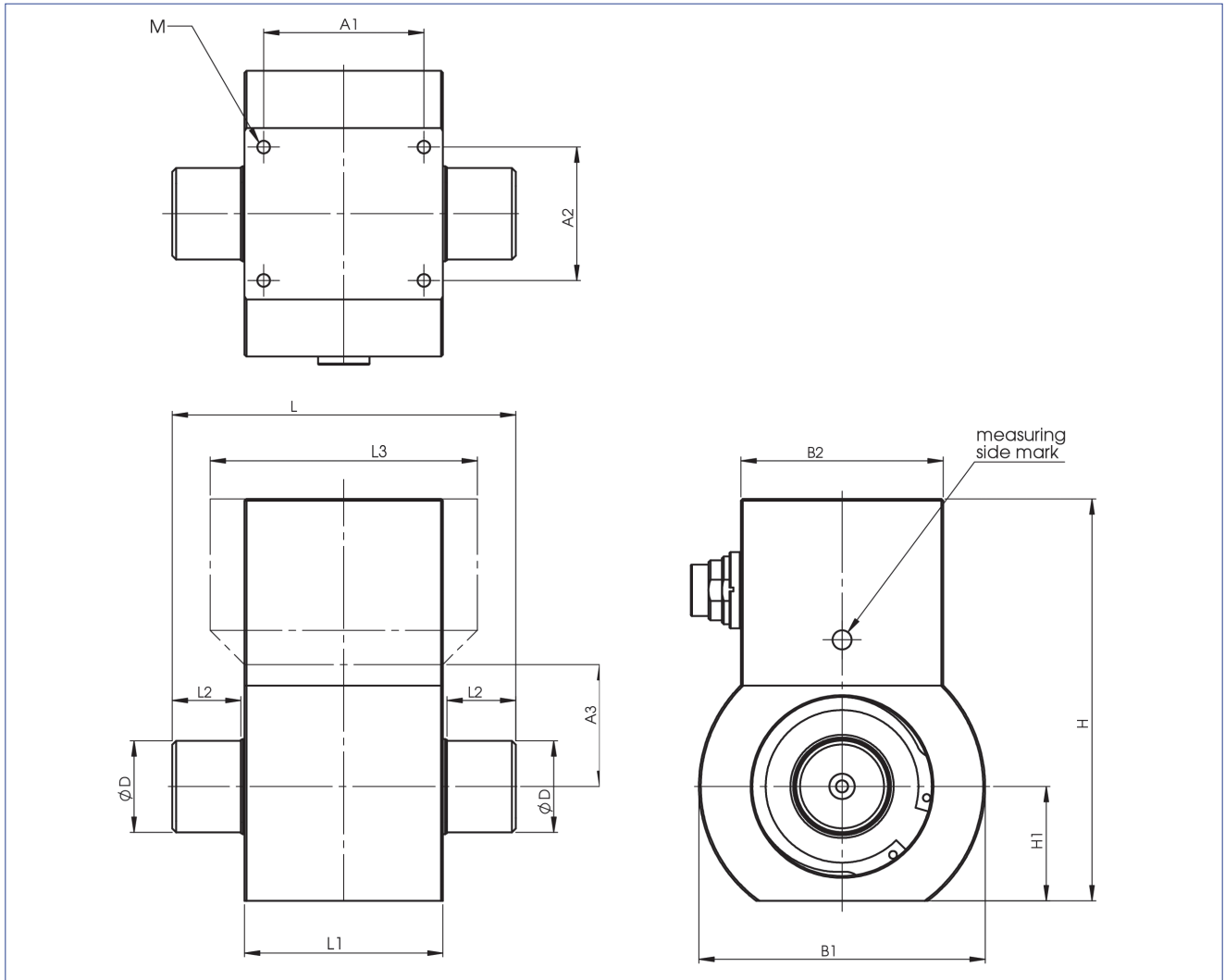
Mechanical Dimensions DRBK



Sizes DRBK

Type:	0	I	II	III
Torque Ranges: (Nm)	0,5 1 2	5 10 20	50 100 200	500 1000
Dimensions:				
L (mm)	66	80	90	120
Ø B1 (mm)	45	70	75	105
B2 (mm)	45	53	53	76
H (mm)	56	72	77,5	97,5
H1 ± 0,05 (mm)	18	28	30	40
Ø D g6 (mm)	6	15	24	40
L1 (mm)	42	48	52	65
L2 (mm)	10	15	18	26
A1 (mm)	33	39	42	50
A2 (mm)	20	31	35	55
M	M3 x 5 deep	M4 x 6 deep	M4 x 6 deep	M5 x 10 deep
	General tolerances DIN 2768 - m			
Weight approx.: (g)	230	550	850	2450
Speed max.: (1/min)	20000	18000	16000	9000

Mechanical Dimensions DRBK-A



Sizes DRBK-A

Sizes	0	I	II	III
Torque Ranges (Nm)	0,5 1 2	5 10 20	50 100 200	500 1000
Dimensions:				
L (mm)	66	80	90	120
$\varnothing B1$ (mm)	45	70	75	105
B2 (mm)	54	53	53	76
H (mm)	90	100	106	122
H1 \pm 0,05 (mm)	18	28	30	40
$\varnothing D$ g6 (mm)	6	15	24	40
L1 (mm)	42	48	52	65
L2 (mm)	10	15	18	26
L3 (mm)	51	48	52	65
A1 (mm)	33	39	42	50
A2 (mm)	20	31	35	55
A3 (mm)	22	-	-	-
M	M3 x 5 deep	M4 x 6 deep	M4 x 6 deep	M5 x 10 deep
General tolerances DIN 2768 - m				
Weight approx. (g)	310	610	910	2530
Speed max. (min ⁻¹)	20000	18000	16000	9000

Technical Specifications DRBK + DRBK-A

Sizes	Torsion Shaft-Type	Measuring Range (Nm)	Spring Constant C (Nm/rad)	Mass Moment J (g•cm ²)			Permitted Axial load (N) *	Permitted Radial load (N) *
				Total	Drive Side	Measuring Side		
0	DRBK-0.5	0,5	144	14,9	14,3	0,6	190	30
	DRBK-1	1	144	14,9	14,3	0,6	190	30
	DRBK-2	2	287	14,9	14,3	0,6	190	60
I	DRBK-5	5	1100	100	82	18	930	25
	DRBK-10	10	2700	100	82	18	930	45
	DRBK-20	20	5400	101	82	19	930	90
II	DRBK-50	50	20 x 10 ³	339	233	106	1580	210
	DRBK-100	100	36 x 10 ³	347	237	110	1580	420
	DRBK-200	200	52 x 10 ³	364	246	118	1580	845
III	DRBK-500	500	290 x 10 ³	3265	1794	1471	3920	1420
	DRBK-1000	1000	420 x 10 ³	3434	1878	1556	3920	2875

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

Features

- The outputs are short-circuit proof
- Signal output for „transducer ready“ 100 mA, level = power supply

Available Accessories

Cables, Analyzers, Couplings

Compatible Couplings

for Size 0 KB2/20-38-6-x

for Size I KB4K/20-39-15-x

for Size II KB4K/200-60-24-x

for Size III KB4K/1000-84-40-x

Ordering Code Coupling

Model/Size - Length - ØD1 - ØD2

Ordering Code

