

## 2 - Range - Torque Transducer Type DRDL with Speed or Angle detection



### Special features:

- no maintenance needed
- contactless
- build-in measurement amplifier
- single supply voltage
- wide application range
- 2 ranges
- small outline
- low moment of inertia
- speed detection (option)
- angle detection (option)

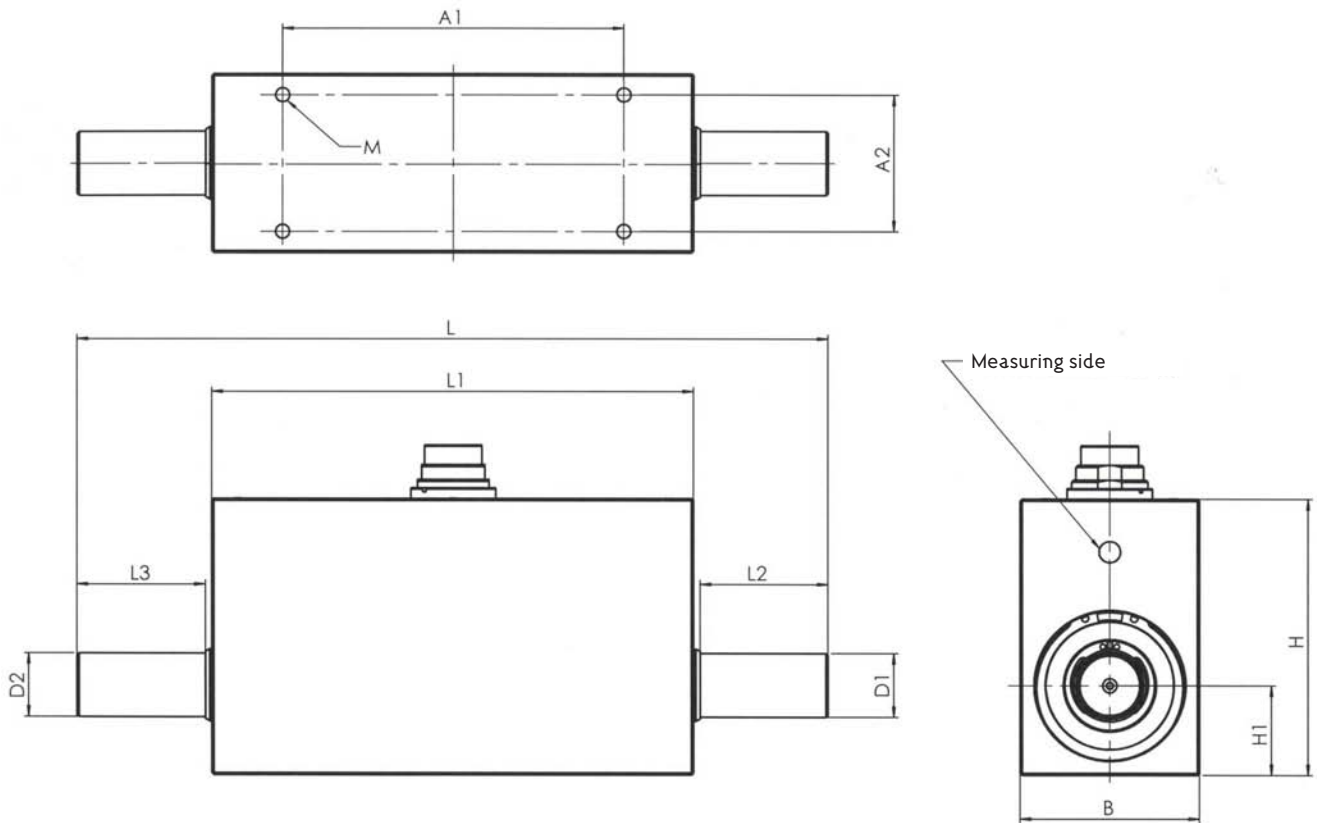
### Description:

The torque transducers series DRDL are suitable for applications in laboratory as well as in industrial environment because of their compact outline. 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 or angle detection. The integrated measurement amplifier is supplied with 12V DC and outputs an analog signal of 0 to  $\pm 10V$  per range, which is galvanic isolated against supply voltage.

Supply Voltage:	12V DC $\pm 10\%$	<b>Option Speed:</b>	<b>(n)</b>
Current Consumption:	approx. 200mA	rev. max:	up to 10 000 rpm *
Rise Time 10-90%	2ms	Output:	Open- Collector
Limit Frequency -3dB	200Hz	Internal Pull Up	10k $\Omega$ (5 V level)
Voltage Output:	0 to $\pm 10V$	External Pull Up	24 V max / 20mA
Internal Resistance:	100 $\Omega$	Pulses/rev.:	60
Ripple:	< 100mVss	<b>Option Angle:</b>	<b>(w)</b>
Nonlinearity:	< 0,1%	rev. max:	up to 3 000 min <sup>-1</sup> **
Hysteresis:	< 0,1%	Output:	Open- Collector
Deviation at zero point:	$\leq \pm 100mV$	Internal Pull Up	10k $\Omega$ (5 V level)
Maximum Measurement Fault:	0,1% (of full scale)	External Pull Up	24 V max / 20mA
Operating Temperature:	0-60°C	Pulses/rev.:	360
Compensated Temperature Range:	5-45°C	Resolution:	1°
Temperature Fault		Phase shift:	Channel A 90° at right spin of propulsion side
Zero Point:	0,02%/K		
Sensitivity:	0,01%/K		
Mechanical Overload:	100%		
Internal Protection:	IP 40 DIN 40050	With suitable external wiring	* 20.000 min <sup>-1</sup>
Connection:	12 pin Connector		** 15.000 min <sup>-1</sup> (or speed max.)

## Mechanical Dimensions:



Type	DRDL-I	DRDL-II	DRDL-III	DRDL-IV	DRDL-V
1.Measurement range: [Nm]	0,5/1/2	5/10/20/50	50/100 /200/300	500/1000 /1500	2000/3000 /4000/5000
2.Measurement range: [Nm]	choice on order (from 1/10 to 1/2 of the 1. measurement range)				
Dimensions:	Different measurement ranges on demand				
L [ mm ]	108	176	184	280	352
L1 [ mm ]	76	113	92	107	129
L2 [ mm ]	14	30	45	85	110
L3 [ mm ]	14	30	45	85	110
B [ mm ]	44	42	60	97	125
H [ mm ]	65	65	75	106	136
H1 [ mm ]	20	21	28	45	58
D1 g6 [ mm ]	Ø6	Ø15	Ø26	Ø45	Ø70
D2 g6 [ mm ]	Ø6	Ø15	Ø26	Ø45	Ø70
A1 [ mm ]	60	80	70	70	105
A2 [ mm ]	32	32	45	70	100
M	M3 x 6	M4 x 8	M5 x 10	M6 x 15	M8 x 16
General tolerances DIN 2768-m					
Weight approx.: [ g ]	420	800	1500	5600	14000
rev. max.[rpm ]	36000	19000	13500	7900	7900

## Technical Data:

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

Type	i. Measurement range [Nm]	Spring Constant C [Nm/rad]	Mass Moment of Inertia J [g·cm <sup>2</sup> ]	Max. Axial Load [N]	Max. Radial Load [N]
DRDL-I	0,5	32	16	120	1,8
	1	59	18	280	3,4
	2	130	18	349	6,9
DRDL-II	5	508	126	880	10
	10	1183	127	1300	20
	20	2318	127	1300	40
	50	4322	130	1300	103
DRDL-III	50	9488	905	1820	77
	100	20354	911	1820	153
	200	37724	927	1820	309
	300	49069	945	1820	461
DRDL-IV	500	161773	10677	4560	414
	1000	280730	10813	4560	829
	1500	350925	10974	4560	1199
DRDL-V	2000	5650	6550	881 x 10 <sup>3</sup>	71566
	3000	5650	9765	1176 x 10 <sup>3</sup>	71970
	4000	5650	11300	1385 x 10 <sup>3</sup>	72429
	5000	5650	11300	1535 x 10 <sup>3</sup>	72930

### Ordering example: DRDL-III-100-10-n

Torque transducer measurement range 100 Nm / 10 Nm, option speed detection

### Available Accessories:

Measuring cable, counterplug, supply and display unit, couplings