NORDIC TRANSDUCER
Please contact NTT ☎ +45 98581444
ntt@transducer.dk Fax +45 98581866

Type DR-2112, Type DR-2112-R

Torque sensor, analog output

- ❍ Active output signal ±5V
- ❍ Sample rate 10 kSample

Type DR-2412, Type DR-2412-R

Miniatur *torque sensor, RS485-interface*

- ❍ *RS485 interface*
- ❍ *Auto identification of: measuring range, serial number, date of calibration*
- ❍ *Sample rate 4 kSample*

Both types have a contactless and digital signal transmission from shaft to case, that means no failure of transmission and maintenance free.

Artikel-Nr. *Art. No.* **DR-2112,**	**Artikel-Nr.** *Art. No.* **DR-2412**	***nominal torque*** **[Nm]**	**max.** *speed* **[min^{-1}]**		***spring rate*** **[Nm/rad]**	*moment of inertia* **J in [kg m^2]**		**Axial** *max. thrust load* **[N]**
			standard	*special*		*drive side*	*test side*	
103069	104137	0,03	10000	15000	$3{,}2{\cdot}10^{-1}$	$1{,}5{\cdot}10^{-6}$	$1{,}7{\cdot}10^{-7}$	10
103795	104138	0,05	10000	15000	$5{,}9{\cdot}10^{-1}$	$1{,}5{\cdot}10^{-6}$	$1{,}7{\cdot}10^{-7}$	10
102570	104139	0,1	10000	15000	1,0	$1{,}9{\cdot}10^{-6}$	$2{,}8{\cdot}10^{-7}$	15
101930	104140	0,2	10000	15000	1,0	$1{,}9{\cdot}10^{-6}$	$2{,}8{\cdot}10^{-7}$	20
101709	104141	0,5	10000	15000	9,9	$1{,}9{\cdot}10^{-6}$	$2{,}8{\cdot}10^{-7}$	30
101597	104142	1	10000	15000	9,9	$1{,}9{\cdot}10^{-6}$	$2{,}8{\cdot}10^{-7}$	40
102348	104143	2	10000	15000	$3{,}6{\cdot}10^{2}$	$1{,}9{\cdot}10^{-6}$	$2{,}9{\cdot}10^{-7}$	50
101840	104144	5	10000	15000	$6{,}5{\cdot}10^{2}$	$1{,}9{\cdot}10^{-6}$	$3{,}0{\cdot}10^{-7}$	50
102761	104145	10	10000	15000	$8{,}5{\cdot}10^{2}$	$2{,}1{\cdot}10^{-6}$	$3{,}9{\cdot}10^{-7}$	50
101922	104146	15	10000	15000	$8{,}5{\cdot}10^{2}$	$2{,}1{\cdot}10^{-6}$	$3{,}9{\cdot}10^{-7}$	100
102263	104147	20	8000	15000	$4{,}5{\cdot}10^{3}$	$1{,}2{\cdot}10^{-5}$	$9{,}9{\cdot}10^{-6}$	300
102111	104148	30	8000	15000	$4{,}5{\cdot}10^{3}$	$1{,}2{\cdot}10^{-5}$	$9{,}9{\cdot}10^{-6}$	1000
102451	104149	50	6000	15000	$8{,}5{\cdot}10^{3}$	$1{,}3{\cdot}10^{-5}$	$1{,}2{\cdot}10^{-5}$	1600
101979	104150	100	6000	12000	$8{,}5{\cdot}10^{3}$	$1{,}3{\cdot}10^{-5}$	$1{,}2{\cdot}10^{-5}$	2600
102177	104151	200	6000	12000	$6{,}7{\cdot}10^{4}$	$1{,}0{\cdot}10^{-4}$	$9{,}0{\cdot}10^{-5}$	3200
102316	104152	500	5000	10000	$7{,}8{\cdot}10^{4}$	$1{,}0{\cdot}10^{-4}$	$9{,}2{\cdot}10^{-5}$	7500
103652	104153	1000	4000	7000	$3{,}1{\cdot}10^{5}$	$1{,}6{\cdot}10^{-3}$	$1{,}1{\cdot}10^{-3}$	10000
103349	104154	2000	3500	5500	$7{,}2{\cdot}10^{5}$	$5{,}3{\cdot}10^{-3}$	$4{,}3{\cdot}10^{-3}$	18000
103797	104155	5000	3500	5500	$8{,}0{\cdot}10^{5}$	$5{,}4{\cdot}10^{-3}$	$4{,}3{\cdot}10^{-3}$	32000
105483	105871	10000	3000	5000	$1{,}2{\cdot}10^{6}$	$4{,}1{\cdot}10^{-2}$	$3{,}9{\cdot}10^{-2}$	125000
105484	105872	20000	3000	5000	$2{,}1{\cdot}10^{6}$	$4{,}1{\cdot}10^{-2}$	$4{,}3{\cdot}10^{-2}$	200000

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Artikel-Nr. *Art. No.* **DR-2112-R**	**Artikel-Nr.** *Art. No.* **DR-2412-R**	**Messbereich** *nominal torque* **[Nm]**	**max. Drehzahl** *max. speed* **[min $^{-1}$]**		**Federkonstante** *springrate* **[Nm/rad]**	**Massen-trägheits-moment** *moment of inertia* **J in [kg m²]**		**zul. Axiallast** *max. thrust load* **[N]**
			Standard *standard*	Sonder *special*		Antriebsseite *drive side*	Messseite *test side*	
108678	108708	0,1	10000	15000	1,0	$1{,}9\cdot10^{-6}$	$2{,}8\cdot10^{-7}$	15
108679	108709	0,2	10000	15000	1,0	$1{,}9\cdot10^{-6}$	$2{,}8\cdot10^{-7}$	20
108680	108710	0,5	10000	15000	9,9	$1{,}9\cdot10^{-6}$	$2{,}8\cdot10^{-7}$	30
108681	108711	1	10000	15000	9,9	$1{,}9\cdot10^{-6}$	$2{,}8\cdot10^{-7}$	40
108682	108712	2	10000	15000	$3{,}6\cdot10^{2}$	$1{,}9\cdot10^{-6}$	$2{,}9\cdot10^{-7}$	50
108683	108713	5	10000	15000	$6{,}5\cdot10^{2}$	$1{,}9\cdot10^{-6}$	$3{,}0\cdot10^{-7}$	50
108684	108714	10	10000	15000	$8{,}5\cdot10^{2}$	$2{,}1\cdot10^{-6}$	$3{,}9\cdot10^{-7}$	50
108685	108715	15	10000	15000	$8{,}5\cdot10^{2}$	$2{,}1\cdot10^{-6}$	$3{,}9\cdot10^{-7}$	100
108686	108716	20	8000	15000	$4{,}5\cdot10^{3}$	$1{,}2\cdot10^{-5}$	$9{,}9\cdot10^{-6}$	300
108687	108717	30	8000	15000	$4{,}5\cdot10^{3}$	$1{,}2\cdot10^{-5}$	$9{,}9\cdot10^{-6}$	1000
108688	108718	50	6000	15000	$8{,}5\cdot10^{3}$	$1{,}3\cdot10^{-5}$	$1{,}2\cdot10^{-5}$	1600
108689	108719	100	6000	12000	$8{,}5\cdot10^{3}$	$1{,}3\cdot10^{-5}$	$1{,}2\cdot10^{-5}$	2600
108690	108720	200	6000	12000	$6{,}7\cdot10^{4}$	$1{,}0\cdot10^{-4}$	$9{,}0\cdot10^{-5}$	3200
108691	108721	500	5000	10000	$7{,}8\cdot10^{4}$	$1{,}0\cdot10^{-4}$	$9{,}2\cdot10^{-5}$	7500
108692	108722	1000	4000	7000	$3{,}1\cdot10^{5}$	$1{,}6\cdot10^{-3}$	$1{,}1\cdot10^{-3}$	10000

Specifications

Type		**Analog** **DR-2112, (DR-2112-R)**	**RS485-Interface** **DR-2412 (DR-2412-R)**
accuracy class	% v.E	0,1 (0,2)	
DIN 1319 - *nonrepeatability*	%	±0,02 (±0,04)	
supply voltage	VDC	12 ... 28	
supply current	mA	<60	
output signal		±0 ... 5V	±15 Bit (±11 Bit)
output current max	mA	*short circuit resist.*	
calibration control	V	L <2,0; H >3,5	per Software
sample rate	kSample	10	
sample rate mode 1 (115KBd)	kSample		4
sample rate mode 2 (115KBd)	kSample		2
sample rate mode 3 (115KBd)	kSample		1
sample rate mode 4 (115KBd)	kSample		0,5
nominal temp. range	°C	+5 ... +45	
service temp. range	°C	0 ... +60	
temp. coeff. of sensitivity	% v.E./K	±0,01 (±0,015)	
temp. coeff. of zero	% v.E./K	±0,02 (±0,03)	
(statisch) - *service torque*	% v.E.	150	
(statisch) - *limit torque*	% v.E.	200	
(statisch) - *ultimate torque*	% v.E.	>300	
bandwidth (DIN 50100)	%	70 – *(top - top)*	
level of protection (DIN 40 050)		IP 50	
connector		8-polig / 12-polig – *8-pin / 12-pin*	

Artikel Nr. Option - *options*

101560	*angle control 360 impulses ,2 tracks, 90°-shifted*		*CW - turn*	
104097	≥ 2000 Nm : 1xTTL – *60 imp, 1 track*		CH A ⎍⎍⎍ CH B ⎍⎍⎍	
103562	*output signal*	V	± 0 ... 10	

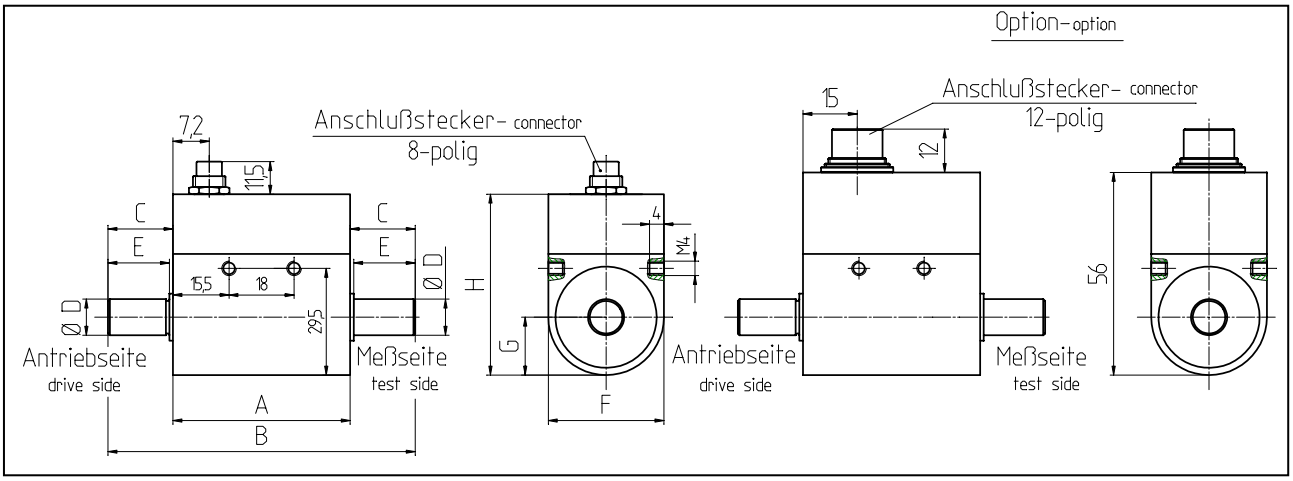
Connections

8-pin	DR-2112, DR-2112-R	
Pin 1	*excitation (+)*	12 ... 28 V
Pin 2	*excitation (GND)*	0 V
Pin 3	*signal (+)*	± 5 V
Pin 4	*signal (GND)*	0
Pin 5	*cal. control*	L < 2,0V; H > 3,5V
Pin 6	Option *angle A*	TTL
Pin 7	Option *angle B*	TTL
Pin 8	NC	-

12-pin	DR-2112, DR-2112-R		DR-2412, DR-2412-R	
Pin A	NC	-	NC	-
Pin B	Option *angle B*	TTL	*angle B*	TTL
Pin C	*signal (+)*	±5 V	NC	-
Pin D	*signal (GND)*	0 V	NC	-
Pin E	*excitation (GND)*	0 V	*excitation (GND)*	0 V
Pin F	*excitation (+)*	12 ... 28 V	*excitation (+)*	12 ... 28 V
Pin G	Option *angle A*	TTL	Option *angle A*	TTL
Pin H	NC	-	NC	-
Pin J	NC	-	RS 485	RS 485 (B)
Pin K	*cal. control*	L < 2,0V; H > 3,5V	NC	-
Pin L	NC	-	RS 485	RS 485 (A)
Pin M	*housing*		*housing*	

Dimensions

DR-2112, DR-2112-R; DR-2412, DR-2412-R

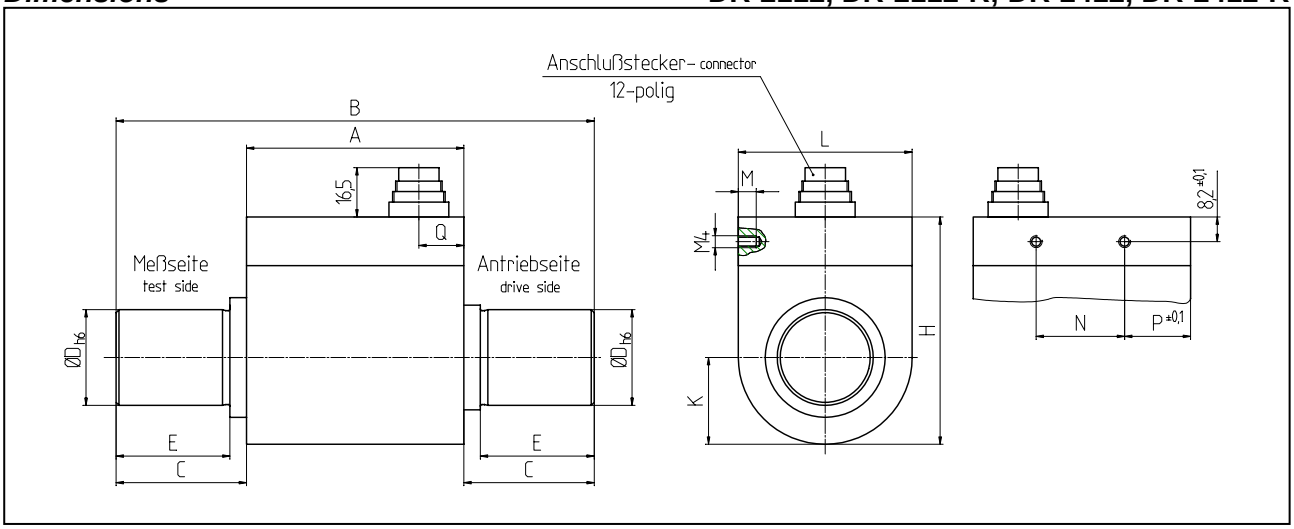


nominal torque **[Nm]**	*dimensions* **[mm]**							
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**
0,03* 0,05*	49	65	8	6 g6	7	32	16	50
0,1; 0,2 0,5; 1 2; 5	49	85	18	8 g6	17	32	16	50
10 15	49	85	18	10 g6	17	32	16	50

**only for DR-2112 and DR-2412 available*

DR-2112-200Nm with ½ flexible coupling free floating

Dimensions **DR-2112, DR-2112-R; DR-2412, DR-2412-R**



nominal torque **[Nm]**	*dimensions* **[mm]**											
	A	**B**	**C**	**D**	**E**	**H**	**K**	**L**	**M**	**N**	**P**	**Q**
20 30	71,5	111,5	20	18 h6	18	59	20	40	5	41,5	15	12
50 100	71,5	147,5	38	18 h6	36	59	20	40	5	41,5	15	12
200 500	72,5	159,5	43,5	32 h6	38	76	29	58	6	29,5	22	15

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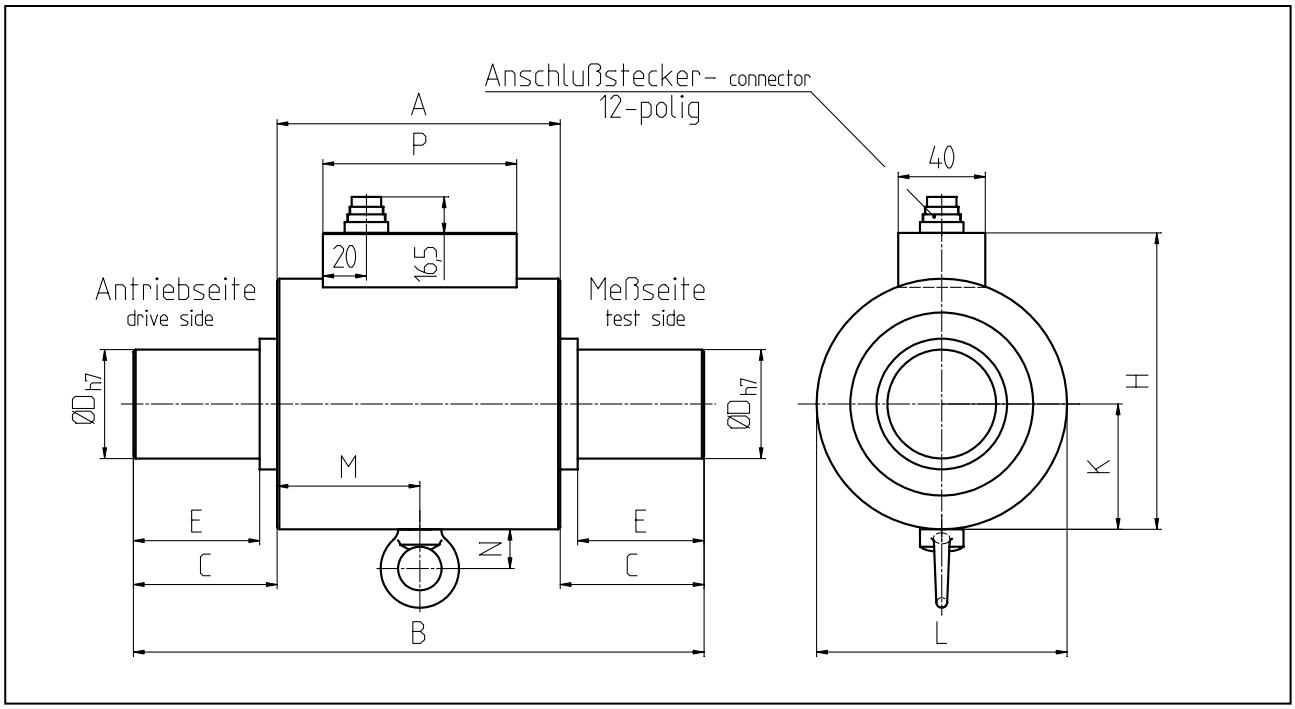

nominal torque [Nm]	*dimensions* **[mm]**										
	A	**B**	**C**	**D**	**E**	**H**	**K**	**L**	**M**	**N**	**P**
1000	130	262	66	50 h7	58	136	57,5	115	65,5	18	89
2000* 5000*	135	377	121	70 h7	110	161	69,5	139	67,5	18	89
10000* 20000*	170	470	140	110 h7	120	233	104	208	95	18	89

**only for DR-2112 and DR-2412 available*

DR-2112-1000Nm shown with custom made flange to fit customers couplings