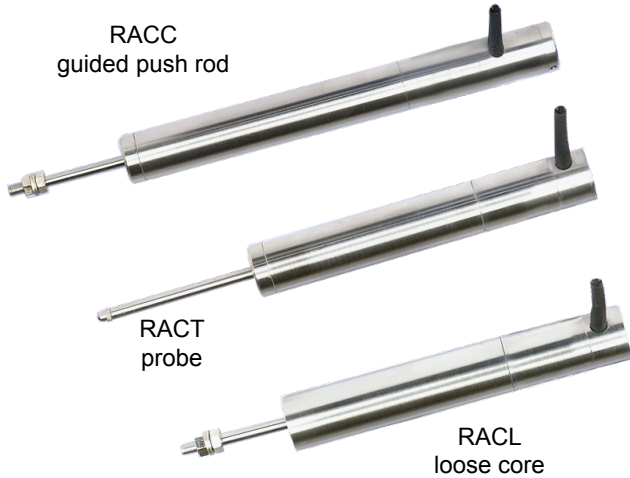


# Data Sheet for Linear Sensors

## Inductive (LVDT) linear transducer

## Series RAC



- Measuring lengths of 25..940 mm
- Wide temperature range -50 ° ..125 ° C
- Voltage output
- In 3 designs
  - C-version with guided push rod
  - T-version with spring return and probe
  - L-version with loose core

The inductive displacement sensors of the RAC series are available in three versions: with free or guided push rod and as a probe with spring return.

Electrical Data	RAC									
	T / L / C	T / L / C	T / L / C	T / L / C	L / C	L / C	L / C	C	C	C
	25	50	100	150	200	300	400	500	750	940
Effective electrical travel middle position 1.) in mm	±12,5	±25	±50	±75	±100	±150	±200	±250	±375	±470
Independent linearity (best straight line) 1.)	±0,5% (±0,25%, ±0,1%)				±0,5% (±0,25%)			±0,5%		
Output signal	0,7 V/V	0,9 V/V	1,5 V/V	1,5 V/V	3,2 V/V	2,4 V/V	1,5 V/V	2 V/V	3,2 V/V	3,6 V/V
Theoretical resolution1.)	Nearly infinite									
Backlash (Hysteresis) 1.)	< 0,01 mm									
Supply voltage	nom. 5 V rms, 5 kHz (0,5..7 V rms, 2..10 kHz )									
Output load	100 kOhm									
Temperature coefficient	±0,01 % F.S./°C									
Ripple	5 kHz									

Mechanical Data, Environmental Conditions, Miscellaneous	RAC									
	T / L / C	T / L / C	T / L / C	T / L / C	L / C	L / C	L / C	C	C	C
	25	50	100	150	200	300	400	500	750	940
Mechanical stroke 1.)	see drawing									
Lifetime (90% effective electrical travel) 2.)	Nearly infinite									
Max. operational speed	< 2 m/s									
Operational force @RT 1.) 2.) <b>RACT</b> (spring return) @ X middle position	< 1,3 N	< 2 N	< 1,8 N	< 6 N						--
Spring rate <b>RACT</b>	0,2N/cm	0,3N/cm	0,2N/cm	0,4N/cm						--
Operational temperature	-50..+125°C									
Storage temperature	-50..+125°C									

# Data Sheet for Linear Sensors

Inductive (LVDT) linear transducer

Series RAC

Mechanical Data, Environmental Conditions, Miscellaneous	RAC									
	T / L / C	T / L / C	T / L / C	T / L / C	L / C	L / C	L / C	C	C	C
	25	50	100	150	200	300	400	500	750	940
Housing length <b>RACT</b> in mm	133	161	276	387	--	--	--	--	--	--
Housing length <b>RACL</b> in mm	127	155	270	380	427	617	808	--	--	--
Housing length <b>RACC</b> in mm	152	180	295	406	452	643	833	1030	1435	1702
Mass <b>RACT</b> gram ca.	184	227	398	483	--	--	--	--	--	--
Mass <b>RACL</b> gram ca.	170	227	320	454	568	824	1200	--	--	--
Mass <b>RACC</b> gram ca.	284	340	511	653	710	1000	1400	1600	2100	2500
Mounting parts (included in delivery)	None									
Included in delivery	Probe or nut M5 x 0,8 or loose push rod									
Material housing	Nickel plated steel									
Material push rod	Hardened steel (Mu-Metal)									
Electrical connection	Round cable 2 m									

1.) According IEC 60393

2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

Order Code					
Description	Selection: standard=black/bold, possible options=grey/cursive				
<b>Series:</b>	<b>RAC</b>				
<b>Design:</b>					
<b>With guided push rod</b>		<b>C</b>			
<b>As a probe with spring return</b>		<b>T</b>			
<b>With loose push rod</b>		<b>L</b>			
<b>Effective electrical travel:</b>					
<b>±12,5 mm</b>				<b>25</b>	
<b>±25 mm</b>				<b>50</b>	
<b>±50 mm</b>				<b>100</b>	
<b>±75 mm</b>				<b>150</b>	
<b>±100 mm (not version T)</b>				<b>200</b>	
<b>±150 mm (not version T)</b>				<b>300</b>	
<b>±200 mm (not version T)</b>				<b>400</b>	
<b>±250 mm (only version C)</b>				<b>500</b>	
<b>±375 mm (only version C)</b>				<b>750</b>	
<b>±470 mm (only version C)</b>				<b>940</b>	
<b>Electrical connection:</b>					
<b>Round cable 2 m</b>					
<i>Option customer-specific cable length in m</i>					- Kxx
<b>Independent linearity:</b>					
<b>Standard ±0,5 %</b>					-
<i>Option ±0,25% (±12,5..±250 mm el. travel)</i>					L0,25
<i>Option ±0,1% (±12,5..±1000 mm el. travel)</i>					L0,1

**For higher quantities or on-going demand, additional options are available as described below on request**

For example:

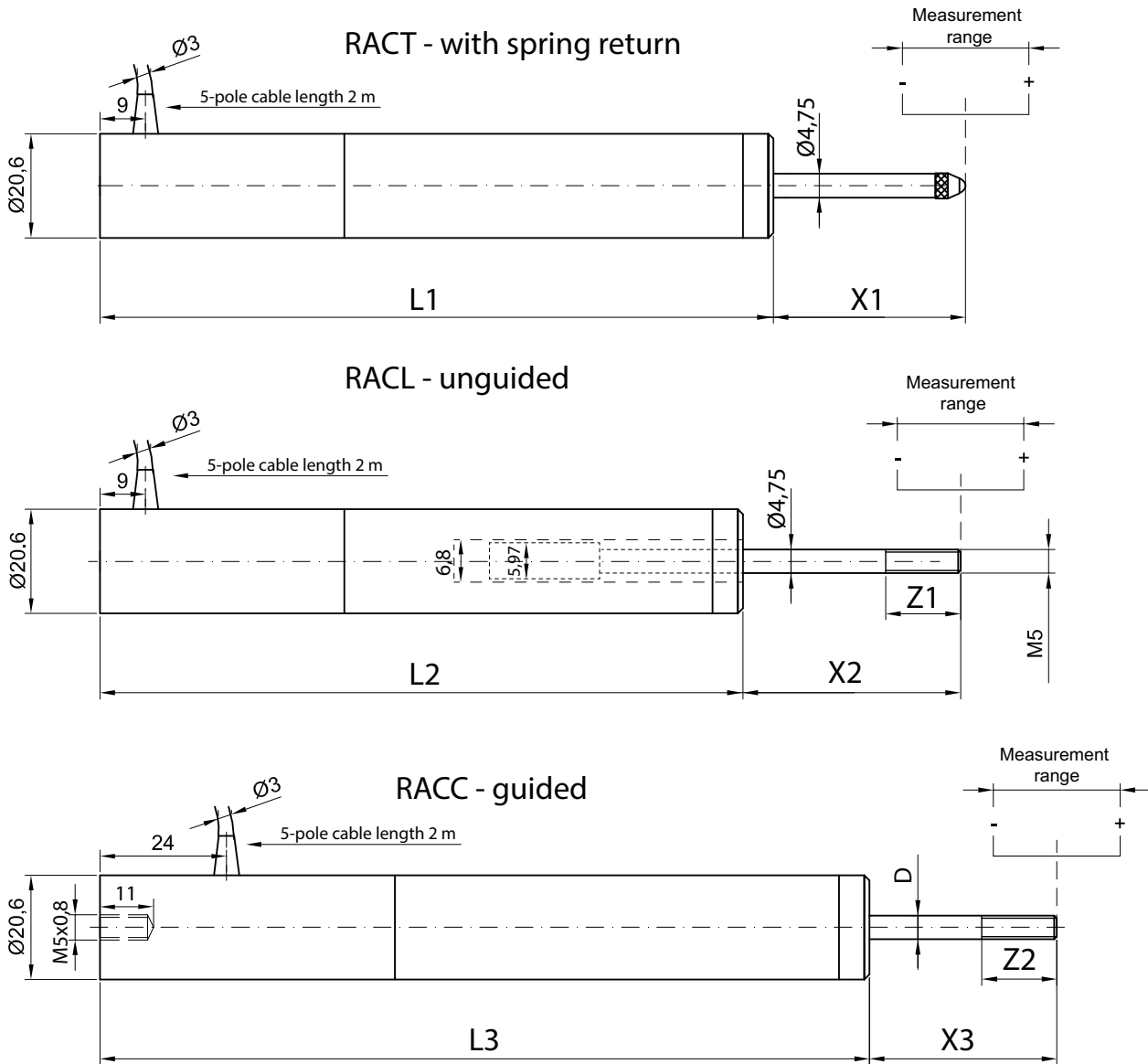
- Cable assemblies with and without connector
- Special probe, special axis length and much mores

# Data Sheet for Linear Sensors

Inductive (LVDT) linear transducer

Series RAC

## Drawing

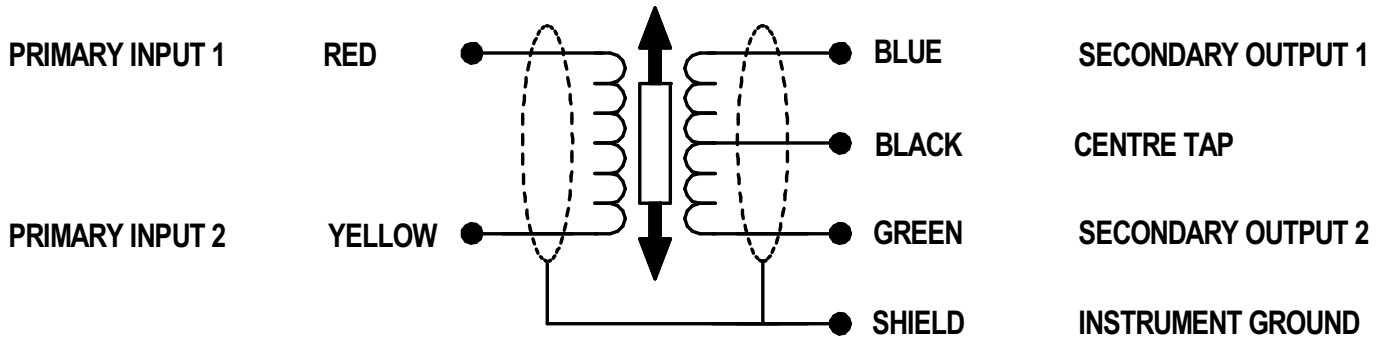


Dimensions in mm

Dimensions / Series RAC (T/L/C)	25	50	100	150	200	300	400	500	750	940
Effective electrical travel middle position RAC (T/L/C) [mm]	±12,5	±25	±50	±75	±100	±150	±200	±250	±375	±470
L1 Housing Length (RACT) [mm]	133	161	276	387	-	-	-	-	-	-
L2 Housing Length (RACL) [mm]	127	155	270	380	427	617	808	-	-	-
L3 Housing Length (RACC) [mm]	152	180	295	406	452	643	833	1030	1435	1702
X1 Middle Position (RACT) [±0,2 mm]	38	63	75	114	-	-	-	-	-	-
X2 Middle Position (RACL) [±0,2 mm]	46	68	81	120	132	183	259	-	-	-
X3 Middle Position (RACC) [±0,2 mm]	38	63	76	114	127	178	254	305	406	508
RACT inward over travel [mm]	1	3	8	15	-	-	-	-	-	-
RACL inward over travel [mm]	16	22	16	29	16	16	27	-	-	-
RACC inward over travel [mm]	10	13	10	24	8	12	22	34	13	5
RACT outward over travel [mm]	13	10	14	15	-	-	-	-	-	-
RACL outward over travel [mm]	-	-	-	-	-	-	-	-	-	-
RACC outward over travel [mm]	12	10	14	15	14	17	25	35	13	33
D Ø push rod [mm]	4,75	4,75	4,75	4,75	4,75	4,75	4,75	4,75	4,75	6
Z1 [mm]	15	15	15	15	15	15	29	-	-	-
Z2 [mm]	15	15	15	15	15	15	32	27	19	27

## Electrical connection

### CONNECTION DETAILS



**NOTE :** If not used the BLACK wire should be insulated from any other wires or connections including the cable shield.