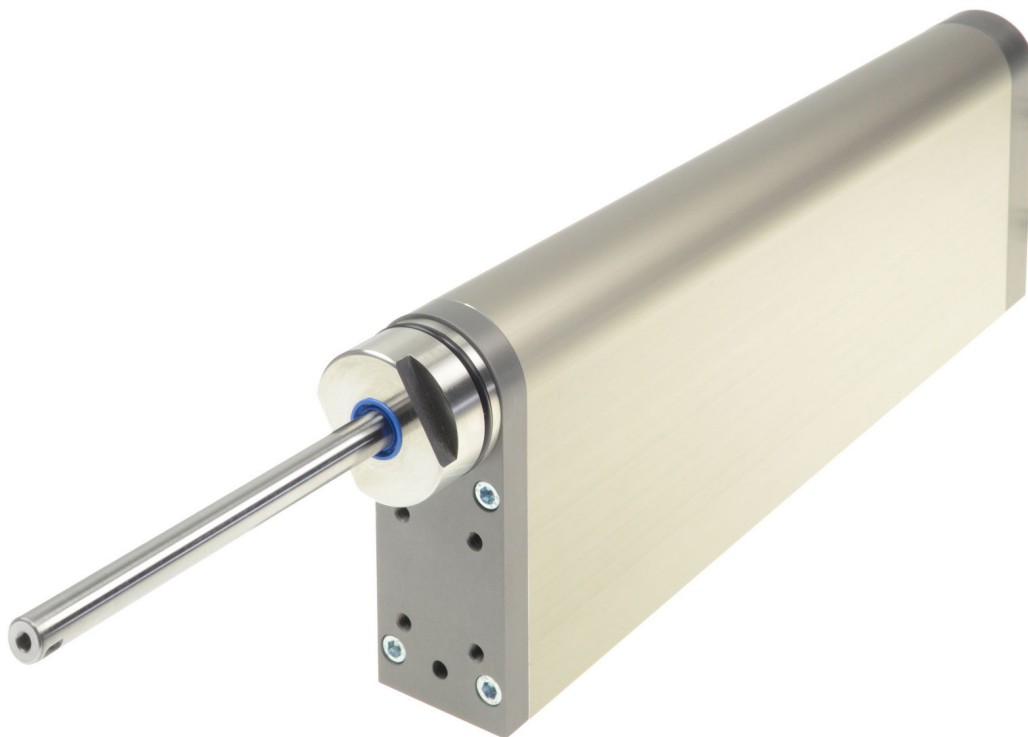


# DATA SHEET

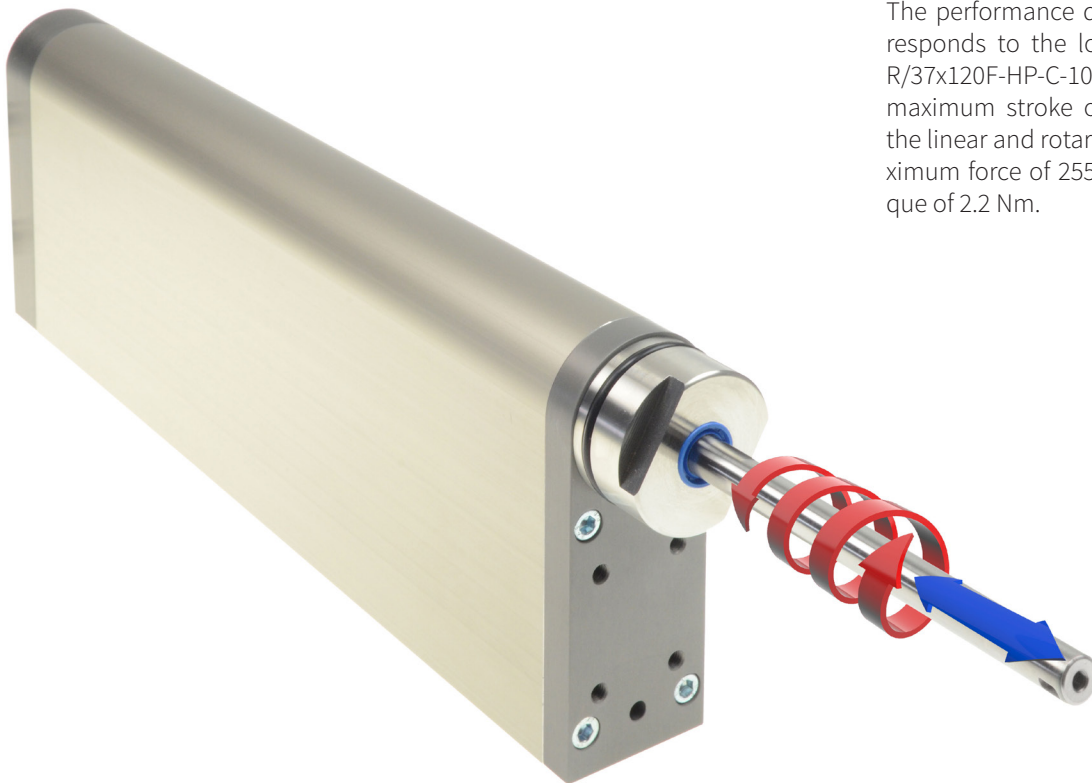
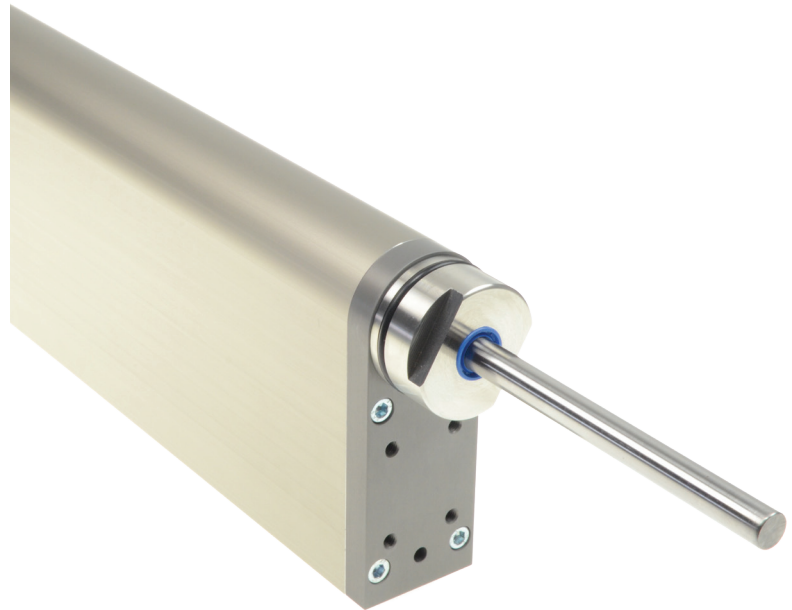
## Linear Rotary Motors PR02-52



- ✓ New design principle with shorter installation length
- ✓ Option integrated MagSpring for load compensation (pushing or pulling)
- ✓ Torque measuring shaft option for high-precision torque control and process data logging
- ✓ Option front flange and lifting rotary shaft in stainless steel for the food or pharmaceutical sector with special requirement for cleaning.
- ✓ Independent linear and rotary motions
- ✓ Extensive range of strokes

## Product description

LinMot expands its product range of linear motors by a further type. The new PR02 motor series is characterised by a new design in which the motors, including additional components, are integrated in a slim housing. In addition to the linear motor and the torque motor, further options such as an air passage, a magnetic spring "MagSpring", a torque sensor or force sensor can be installed. With the aid of the air feed through the hollow slider, pneumatic grippers can be actuated or vacuum applications can be easily implemented, among other things. The MagSpring ensures that the weight force of the moving load is passively compensated and also prevents the axle from lowering in the de-energized state. The torque sensor and the force sensor enable precise, reproducible and recordable capping processes, as required in the pharmaceutical industry, for example, and for applications with special cleaning requirements, the front flange and the linear rotary shaft in stainless steel design are available as an option. With the new design, the user benefits from the shorter in-



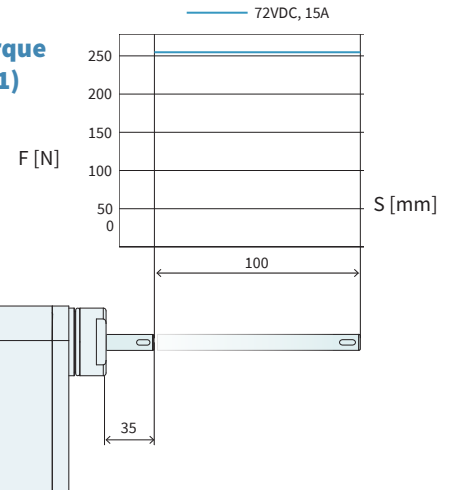
stallation length of the entire unit and the hygienic design with easy-to-clean surfaces. The performance data of the PR02-52 corresponds to the long-proven PR01-52x60-R/37x120F-HP-C-100, which guarantees a maximum stroke of 100 mm. In addition, the linear and rotary motors generate a maximum force of 255 N and a maximum torque of 2.2 Nm.

**PR02-52x60(-SSC)-R\_37x120F-HP-R-100(-L)\_MSxx\_TSxx\_FSxx**

**Optional:**

**Stainless Steel Front/Shaft (-SSC); Hollow Shaft (-L); MagSpring (\_MSxx); Torque Measuring Shaft (\_TSxx); Force Sensor (\_FSxx) Angled motor connector (\_R01)**

<b>Max. Stroke:</b>	100 mm
<b>Peak Force:</b>	255 N
<b>Peak Torque:</b>	2.2 Nm



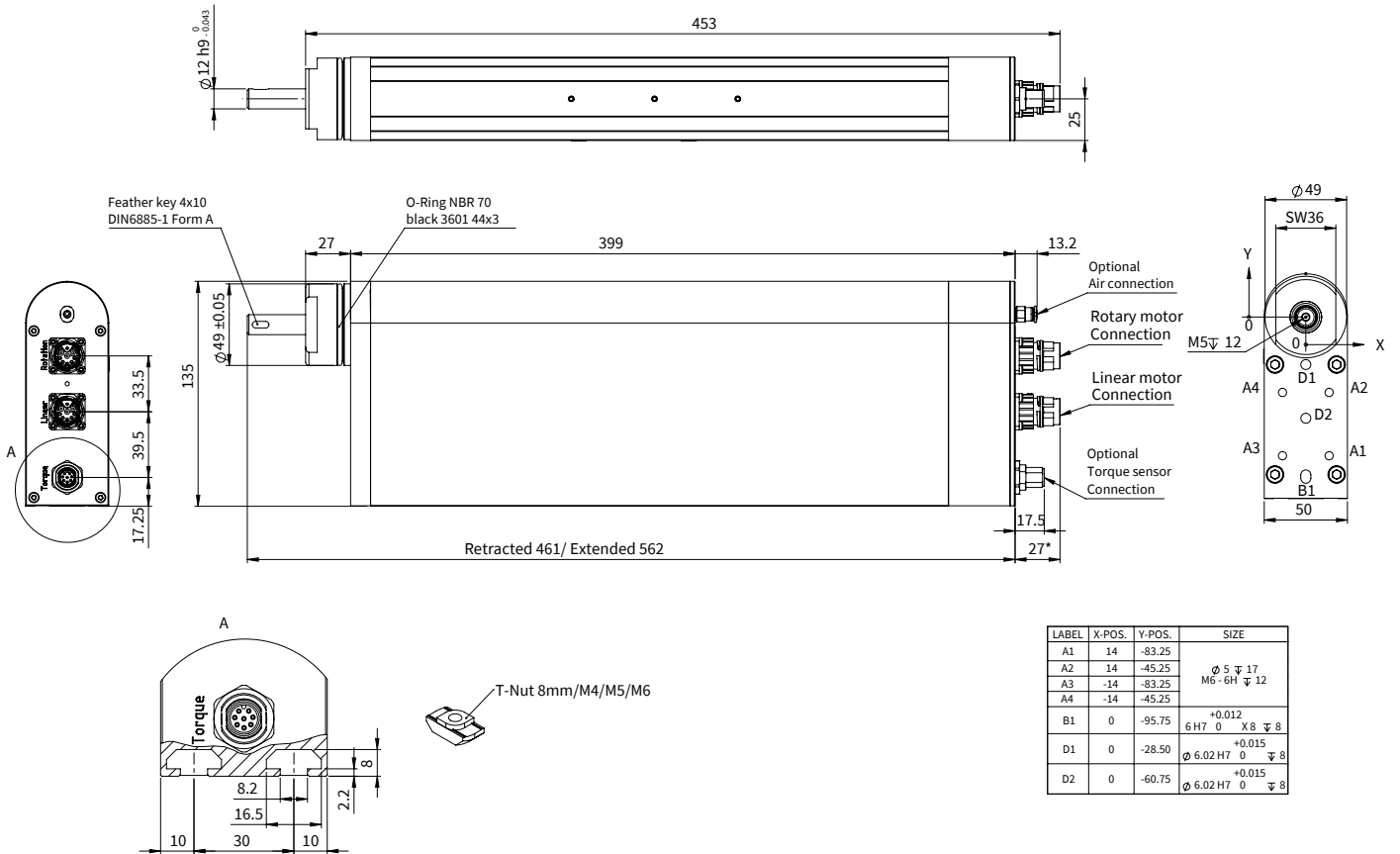
Dimensions in mm



Motor Specifications			
<b>Linear Motion</b>			
Max. Stroke	mm (in)	100	(3.94)
Peak Forc E12x0 - UC	N (lbf)	255	(57.3)
Constant Force @25°C <sup>1)</sup>	N (lbf)	75	(16.9)
Force Constant @25°C	N/A <sub>pk</sub> (lbf/A <sub>pk</sub> )	17	(3.8)
Max. Current @ 72VDC	A <sub>pk</sub>	15	
Max. Velocity @ 72VDC	m/s (in/s)	3.9	(154)
Position Repeatability	mm (in)	±0.05	(±0.0020)
Linearity	%	±0.10	
<b>Rotary Motion</b>			
Peak Torque (± 10%)	Nm (lbf·in)	2.2	(19.5)
Constant Torque (Halt) @25°C <sup>1)</sup>	Nm (lbf·in)	0.55	(4.9)
Max. Number of revolutions	rpm	1500	
Torque Constant 1	Nm/A <sub>rpm</sub> (lbf·in/A <sub>rpm</sub> )	0.16	(1.42)
Torque Constant 2	Nm/A <sub>rms</sub> (lbf·in/A <sub>rms</sub> )	0.23	(2.04)
Max. Current @ 72VDC	A <sub>pk</sub> / A <sub>rms</sub>	13.5 / 9.55	
Position Repeatability	°	±0.1	
<b>Mechanical Data</b>			
Width	mm (in)	50	(1.97)
Height	mm (in)	135	(5.31)
Length	mm (in)	453 / 468	(17.83 / 18.43)
Mass [without MagSpring / with MagSpring]	g (lb)	5680 / 6570	(12.52 / 14.48)
Linear moving mass [without MagSpring]	g (lb)	1010	(2.23)
Linear moving mass [with MagSpring 30N / with MagSpring 60N]	g (lb)	1200 / 1200	(2.65 / 2.65)
Linear moving mass [with MagSpring -30N / with MagSpring -60N]	g (lb)	1150 / 1150	(2.54 / 2.54)
Rotary Torque of Inertia	kgcm <sup>2</sup> (lb·ft <sup>2</sup> )	0.26	(0.00062)
Weight Compensation [Option MS01 / Option MS04]	N (lbf)	30 / 60	(6.74 / 13.5)
Weight Compensation [Option MS51 / Option MS54]	N (lbf)	-30 / -60	(-6.74 / -13.5)
Axle Diameter	mm (in)	12h9	(0.47)
Through bore-hole		Option-L: Hole diameter 2.5 mm Connection (front) M5; (back) Connector M5	
Protection Class		IP64	
		<b>Torque Sensor (Optional)</b>	<b>Force Sensor (Optional)</b>
Supply Voltage	VDC	24	24
Measuring Range	Nm (lbf·in)	±2.5 (±21.9)	FS01 = 100 (22.5) / FS02 = 250 (56.2)
Boundary Frequency -3dB	kHz	1	1
Output Signal	VDC	±10	±10
Current Consumption	mA	<160	<160
Zero Offset	mV	<±100	<±100
Mechanical Overload	%	200	300
Resolution (C1200)	Bit	12	12
Linearity	Nm	±0.025 (±0.22)	±1 (±0.22) / ±2.5 (±0.56)

1) Value depends on 2nd motor (see LinMot Designer)

**DIMENSIONS PR02-52X60(-SSC)-R\_37X120F-HP-R-100(-L)\_MSXX\_TSXX**



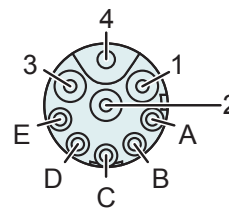
\*) Dimension extends with option R01 (angled connector) by +10mm

Dimensions in mm

**CONNECTORS**

Motor Connector Wiring	Linear Unit: R-Connector	Rotary Unit: R-Connector	Wire Color Motor Cable
Ph 1+ / Ph A	1	1	red
Ph 1- / Ph B	2	2	pink
Ph 2+ / Ph C	3	3	blue
Ph 2- / (-)	4	4 (not connected)	grey
+5VDC	A	A	white
GND	B	B	inner shield
Sin	C	C	yellow
Cos	D	D	green
Temp.	E	E	black
Shield	Housing	Housing	outer shield

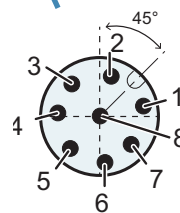
**R-Connector**



View: Motor connector, plug on

Connector Wiring	Torque Sensor / Force Sensor M12 Connector	Wire Color Motor Cable
Supply GND	1	white
Supply 24V (approx. 80 mA @ 24VDC)	2	brown
Do not connect	3	green
Torque -	4	yellow
Torque +	5	grey
Do not connect	6	pink
Do not connect	7	blue
Do not connect	8	red

**M12-Connector (A-coded)**



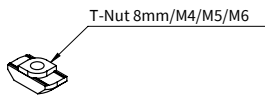
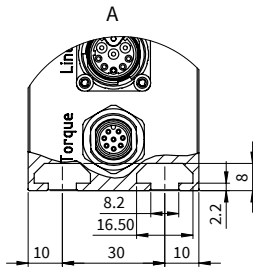
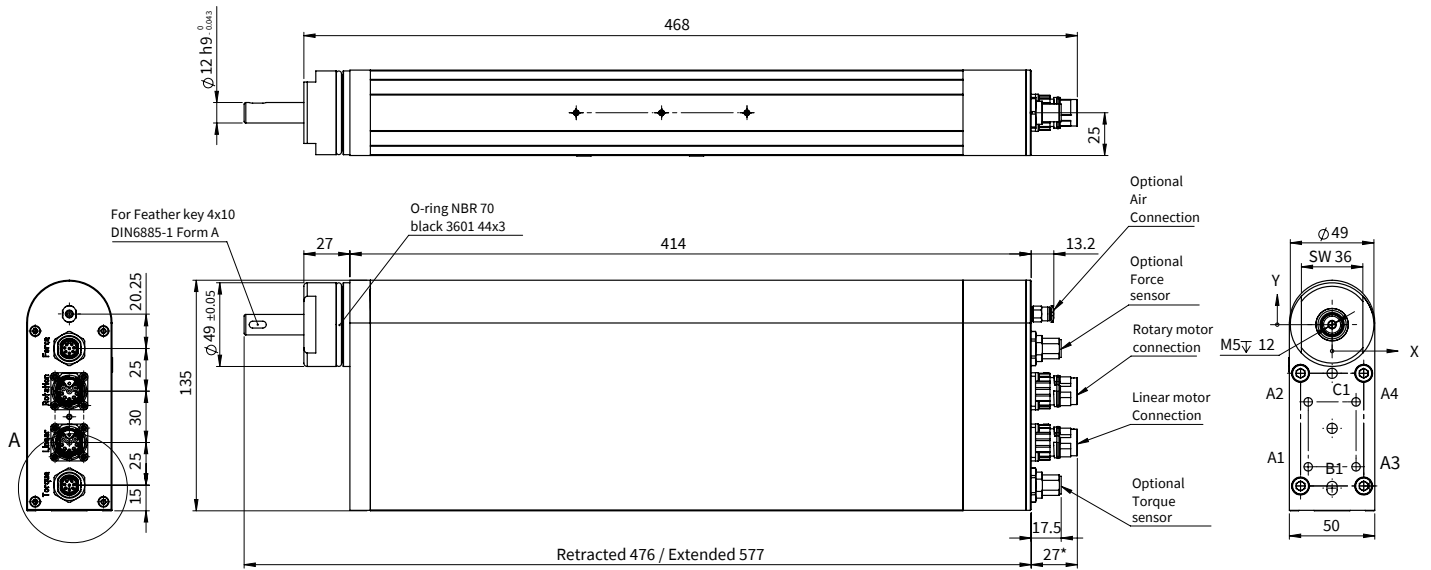
View: Motor connector, plug on

PIN 4 (torque -) and PIN 1 (ground supply) are internally galvanically isolated, bridging at the power source (not at the transducer) if required.

**External EMC circuitry**

A ceramic capacitor 100nF / 50V can be soldered between pins 4 - 5 on the evaluation to avoid wire-bound interference.

**DIMENSIONS PR02-52X60(-SSC)-R\_37X120F-HP-R-100(-L)\_MSXX\_TSXX\_FSXX**



ETIKETT	X-POS.	Y-POS.	Size
A1	-14	-83.25	$\phi 5 \nabla 17$ M6 - 6H $\nabla 12$
A2	-14	-45.25	
A3	14	-83.25	
A4	14	-45.25	
B1	0	-95.75	$+0.012$ 6 H7 0 X8 $\nabla 8$
C1	0	-28.50	$+0.015$ $\phi 6.020$ H7 0 $\nabla 8$

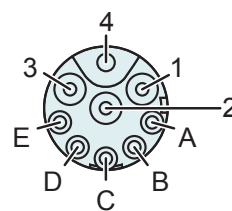
\*) Dimension extends with option R01 (angled connector) by +10mm

Dimensions in mm

**CONNECTORS**

Motor Connector Wiring	Linear Unit: R-Connector	Rotary Unit: R-Connector	Wire Color Motor Cable
Ph 1+ / Ph A	1	1	red
Ph 1- / Ph B	2	2	pink
Ph 2+ / Ph C	3	3	blue
Ph 2- / (-)	4	4 (not connected)	grey
+5VDC	A	A	white
GND	B	B	inner shield
Sin	C	C	yellow
Cos	D	D	green
Temp.	E	E	black
Shield	Housing	Housing	outer shield

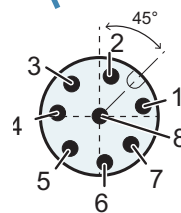
**R-Connector**



View: Motor connector, plug on

Connector Wiring	Torque Sensor/ Force Sensor M12 Connector	Wire Color Motor Cable
Supply GND	1	white
Supply 24V (approx. 80 mA @ 24VDC)	2	brown
Do not connect	3	green
Torque -	4	yellow
Torque +	5	grey
Do not connect	6	pink
Do not connect	7	blue
Do not connect	8	red

**M12-Connector (A-coded)**



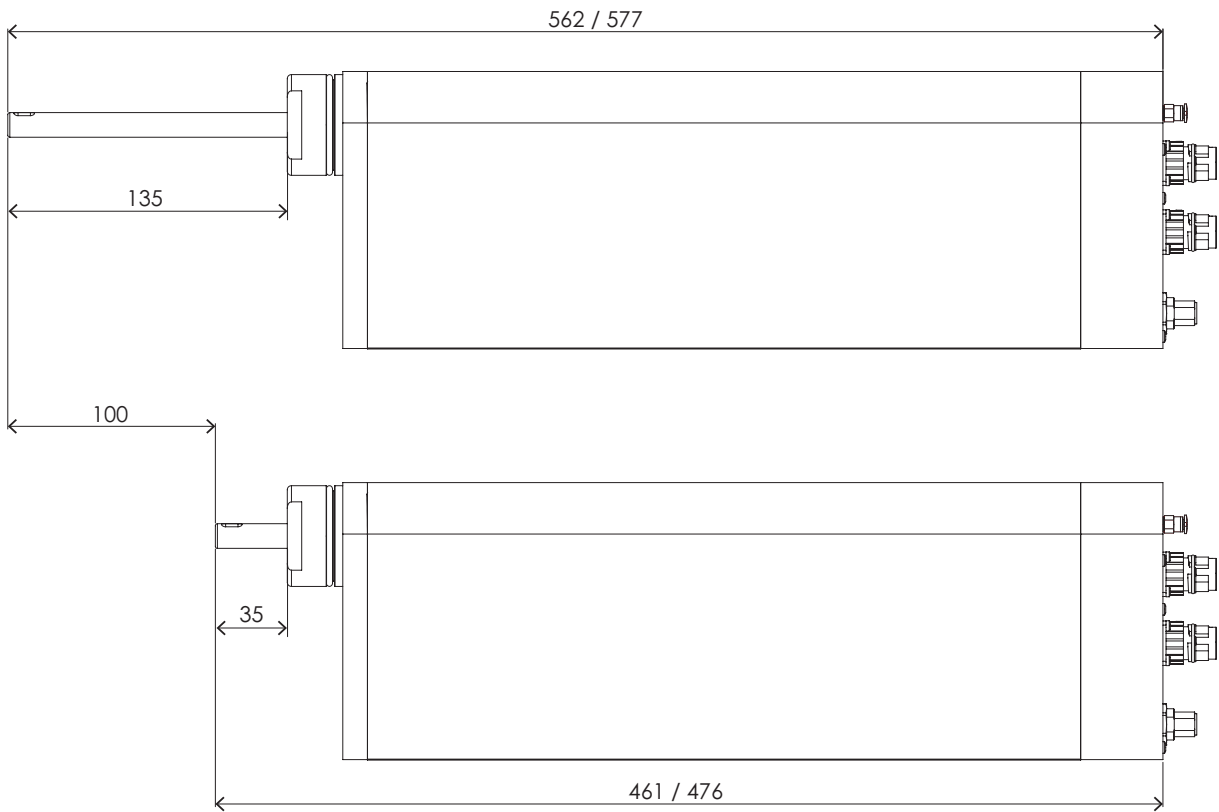
View: Motor connector, plug on

PIN 4 (torque -) and PIN 1 (ground supply) are internally galvanically isolated, bridging at the power source (not at the transducer) if required.

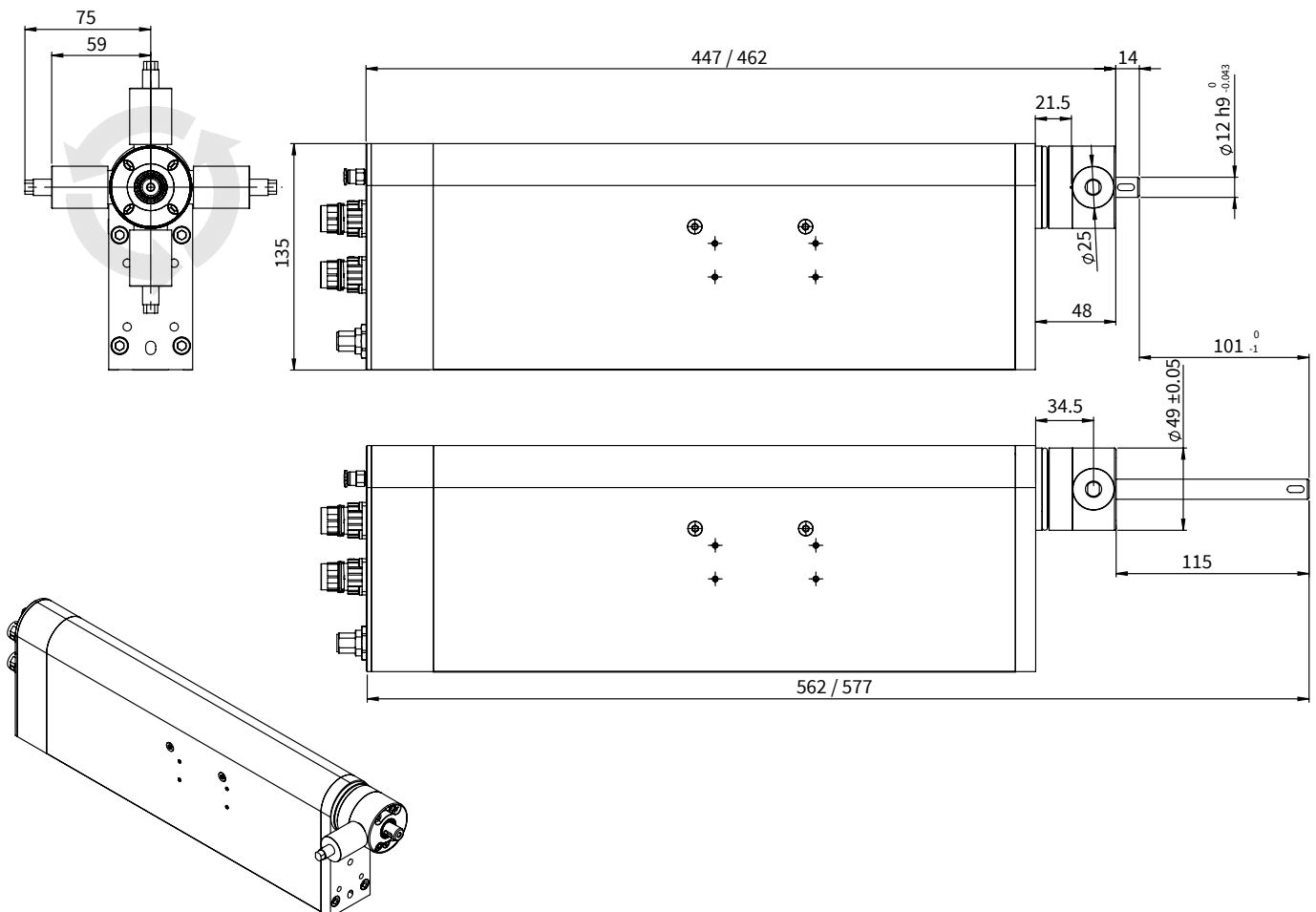
**External EMC circuitry**

A ceramic capacitor 100nF / 50V can be soldered between pins 4 - 5 on the evaluation to avoid wire-bound interference.

**MAX. STROKE**



**DIMENSIONS OPTION HOLDING-BRAKE-KIT RS02-BK52**



**ORDERING INFORMATION**

LINEAR ROTARY MOTORS PR02		
Item	Description	Item-No.
PR02-52x60-R_37x120F-HP-R-100_MS00_TS00	Linear Rotary Motor	<a href="#">0150-2997</a>
PR02-52x60-R_37x120F-HP-R-100_MS01_TS00	Linear Rotary Motor, MagSpring 30N	<a href="#">0150-3741</a>
PR02-52x60-R_37x120F-HP-R-100_MS04_TS00	Linear Rotary Motor, MagSpring 60N	<a href="#">0150-2781</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS00_TS00	Linear Rotary Motor with hollow Shaft	<a href="#">0150-3725</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS01_TS00	Linear Rotary Motor with hollow Shaft, MagSpring 30N	<a href="#">0150-3742</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS04_TS00	Linear Rotary Motor with hollow Shaft, MagSpring 60N	<a href="#">0150-3758</a>
PR02-52x60-R_37x120F-HP-R-100_MS51_TS00	Linear Rotary Motor, MagSpring -30N	<a href="#">0150-3967</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS51_TS00	Linear Rotary Motor with hollow Shaft, MagSpring -30N	<a href="#">0150-3968</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS54_TS00	Linear Rotary Motor with hollow Shaft, MagSpring -60N	<a href="#">0150-3971</a>

LINEAR ROTARY MOTORS PR02 - WITH TORQUE MEASURING SHAFT (TS)		
Item	Description	Item-No.
PR02-52x60-R_37x120F-HP-R-100_MS00_TS01	Linear Rotary Motor, TS 2.5Nm	<a href="#">0150-3726</a>
PR02-52x60-R_37x120F-HP-R-100_MS01_TS01	Linear Rotary Motor, TS 2.5Nm, MagSpring 30N	<a href="#">0150-3743</a>
PR02-52x60-R_37x120F-HP-R-100_MS04_TS01	Linear Rotary Motor, TS 2.5Nm, MagSpring 60N	<a href="#">0150-2884</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS00_TS01	Linear Rotary Motor with hollow Shaft, TS 2.5Nm	<a href="#">0150-3727</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS01_TS01	Linear Rotary Motor with hollow Shaft, TS 2.5Nm, MagSpring 30N	<a href="#">0150-3744</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS04_TS01	Linear Rotary Motor with hollow Shaft, TS 2.5Nm, MagSpring 60N	<a href="#">0150-2707</a>
PR02-52x60-R_37x120F-HP-R-100_MS51_TS01	Linear Rotary Motor, MagSpring -30N, Torque Sensor	<a href="#">0150-3969</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS51_TS01	Linear Rotary Motor with hollow Shaft, MagSpring -30N, Torque Sensor	<a href="#">0150-3970</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS54_TS01	Linear Rotary Motor with hollow Shaft, MagSpring -60N, Torque Sensor	<a href="#">0150-3972</a>
PR02-52x60-R_37x120F-HP-R-100_MS54_TS01	Linear Rotary Motor, MagSpring -60N, Torque Sensor	<a href="#">0150-3974</a>

LINEAR ROTARY MOTORS PR02 - WITH STAINLESS STEEL FRONT (SSC)		
Item	Description	Item-No.
PR02-52x60-SSC-R_37x120F-HP-R-100_MS00_TS00	Linear Rotary Motor Stainless Steel Front	<a href="#">0150-3745</a>
PR02-52x60-SSC-R_37x120F-HP-R-100-L_MS00_TS00	Linear Rotary Motor Stainless Steel Front, Hollow Shaft	<a href="#">0150-3749</a>
PR02-52x60-SSC-R_37x120F-HP-R-100-L_MS01_TS00	Linear Rotary Motor Stainless Steel Front, Hollow Shaft, MagSpring 30N	<a href="#">0150-4482</a>
PR02-52x60-SSC-R_37x120F-HP-R-100-L_MS01_TS01	Linear Rotary Motor Stainless Steel Front, Hollow Shaft, MagSpring 30N, Torque Sensor	<a href="#">0150-3752</a>
PR02-52x60-SSC-R_37x120F-HP-R-100-L_MS51_TS00	Linear Rotary Motor Stainless Steel Front, Hollow Shaft, MagSpring -30N	<a href="#">0150-4470</a>
PR02-52x60-SSC-R_37x120F-HP-R-100_MS00_TS01	Linear Rotary Motor Stainless Steel Front, Torque Sensor	<a href="#">0150-3746</a>
PR02-52x60-SSC-R_37x120F-HP-R-100_MS01_TS01	Linear Rotary Motor Stainless Steel Front, MagSpring 30N, Torque Sensor	<a href="#">0150-3748</a>
PR02-52x60-SSC-R_37x120F-HP-R-100_MS01_TS00	Linear Rotary Motor Stainless Steel Front, MagSpring 30N	<a href="#">0150-3747</a>
PR02-52x60-SSC-R_37x120F-HP-R-100-L_MS00_TS01	Linear Rotary Motor Stainless Steel Front, Hollow Shaft, Torque Sensor	<a href="#">0150-3750</a>

PRELIMINARY LINEAR ROTARY MOTORS PR02 - WITH FORCE MEASURING SHAFT (FS)		
Item	Description	Item-No.
PR02-52x60-R_37x120F-HP-R-100_MS00_TS00_FS02	Linear Rotary Motor, Force Sensor	<a href="#">0150-4043</a>
PR02-52x60-R_37x120F-HP-R-100_MS01_TS00_FS01	Linear Rotary Motor, MagSpring 30N, FS 100N	<a href="#">0150-3792</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS51_TS00_FS01	Linear Rotary Motor with Hollow Shaft, MagSpring -30N, Force Sensor	<a href="#">0150-4467</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS00_TS00_FS01	Linear Rotary Motor with Hollow Shaft, Force Sensor	<a href="#">0150-4221</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS01_TS00_FS01	Linear Rotary Motor with Hollow Shaft, MagSpring 30N, Force Sensor	<a href="#">0150-4312</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS01_TS00_FS02	Linear Rotary Motor with Hollow Shaft, MagSpring 30N, Force Sensor	<a href="#">0150-4534</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS01_TS01_FS01	Linear Rotary Motor with Hollow Shaft, TS 2.5Nm, FS 100N, MagSpring 30N	<a href="#">0150-3852</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS01_TS01_FS02	Linear Rotary Motor with Hollow Shaft, TS 2.5Nm, FS 250N, MagSpring 30N	<a href="#">0150-3909</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS51_TS01_FS01	Linear Rotary Motor with Hollow Shaft, MagSpring -30N, Torque Sensor, Force Sensor	<a href="#">0150-4468</a>
PR02-52x60-R_37x120F-HP-R-100-L_MS51_TS01_FS02	Linear Rotary Motor with Hollow Shaft, MagSpring -30N, Torque Sensor, Force Sensor	<a href="#">0150-4469</a>

## ORDERING INFORMATION

ACCESSORIES		
Item	Description	Item-No.
<b>K05-W/R-2</b>	Motor Cable W/R, 2 m	<a href="#">0150-2119</a>
<b>K05-W/R-4</b>	Motor Cable W/R, 4 m	<a href="#">0150-2120</a>
<b>K05-W/R-6</b>	Motor Cable W/R, 6 m	<a href="#">0150-2121</a>
<b>K05-W/R-8</b>	Motor Cable W/R, 8 m	<a href="#">0150-2122</a>
<b>K05-W/R-</b>	Motor Cable K05-W/R, Custom length	<a href="#">0150-3262</a>
<b>K05-Y/R-2</b>	Motor Cable Y/R, 2 m	<a href="#">0150-2421</a>
<b>K05-Y/R-4</b>	Motor Cable Y/R, 4 m	<a href="#">0150-2422</a>
<b>K05-Y/R-6</b>	Motor Cable Y/R, 6 m	<a href="#">0150-2423</a>
<b>K05-Y/R-8</b>	Motor Cable Y/R, 8 m	<a href="#">0150-2424</a>
<b>K05-Y-Fe/R-</b>	Motor Cable K05-Y-Fe/R, Custom length	<a href="#">0150-3501</a>
<b>KS05-W/R-4</b>	Trailing Chain Cable W/R, 4 m	<a href="#">0150-2106</a>
<b>KS05-W/R-6</b>	Trailing Chain Cable W/R, 6 m	<a href="#">0150-2131</a>
<b>KS05-W/R-8</b>	Trailing Chain Cable W/R, 8 m	<a href="#">0150-2107</a>
<b>KS05-W/R-</b>	Trailing Chain Cable KS05-W/R, Custom length	<a href="#">0150-3256</a>
<b>KS05-Y/R-4</b>	Trailing Chain Cable Y/R, 4 m	<a href="#">0150-2433</a>
<b>KS05-Y/R-6</b>	Trailing Chain Cable Y/R, 6 m	<a href="#">0150-2434</a>
<b>KS05-Y/R-8</b>	Trailing Chain Cable Y/R, 8 m	<a href="#">0150-2435</a>
<b>KS05-Y-Fe/R-</b>	Trailing Chain Cable KS05-Y-Fe/R, Custom length	<a href="#">0150-3507</a>
<b>KR05-W/R-</b>	Robot Cable KR05-W/R, Custom length	<a href="#">0150-3336</a>
<b>KR05-Y-Fe/R-</b>	Robot Cable KR05-Y-Fe/R, Custom length	<a href="#">0150-3512</a>
<b>KSS014-06-X4/SM</b>	Sensor cable for PR02	<a href="#">0150-4610</a>
<b>RS01-SS12x22</b>	Shaft-hub clamping for 12mm shaft	<a href="#">0230-0101</a>
<b>Hammer Nut N8/M6</b>	Hammer Nut N8 / M6	<a href="#">0150-2558</a>
<b>RS02-BK52</b>	Holding brake kit for Linear Rotary Motor PR02-52	<a href="#">0150-2987</a>





# ALL LINEAR MOTION FROM A SINGLE SOURCE

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