LINEAR MOTORS P10-54X300U

- 230VAC and 3 x 400VAC technology
- Peak forces up to 871 N
- LinMot encoder or 3rd party drive encoder
  SinCos, A/B incremental, BiSS / PT1000, PTC
- Extremely high dynamic
- Rotating push-pull TWIN connector for power and encoder cables
- Can also be controlled by standard third-party servo drives

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SUBJECT TO ALTERATIONS

LINEAR MOTORS P10-54X300U

MOTOR FAMILY P10-54x300U

Technical Data				
Stroke				
Max. Stroke (ES)	mm	(in)	40 - 1540	(1.57 - 60.6)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(279.9)
Position Detection				
Position Resolution	mm	(in)	0.007	(0.0003)
Repeatability	mm	(in)	±0.05	(±0.002)
Position Resolution with ES	mm	(in)	0.001	(0.00004)
Repeatability with ES	mm	(in)	±0.01	(±0.0004)
Linearity with ES	mm	(in)	±0.01	(±0.0004)
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Back EMF Constant	V_{pk} / (m/s)	(V_{pk} / (in/s))	50.8	(1.29)
Terminal Resistance 25 °C / 120 °C	Ohm		5.7 / 7.8	
Terminal Inductivity	mH		4.8	
Magnetic Period	mm	(in)	60	(2.35)
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Stator Diameter	mm	(in)	54	(2.1)
Stator Length	mm	(in)	402	(16)
Stator Mass	g	(lb)	3200	(7.04)
Slider Diameter	mm	(in)	28	(1.1)
Slider Length	mm	(in)	500 - 2000	(20 - 79)
Slider Mass	g	(lb)	2160 - 9140	(4.75 - 20.11)
IP Code			IP 65	
Certification				
UL	File-No.		E354430	

1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.

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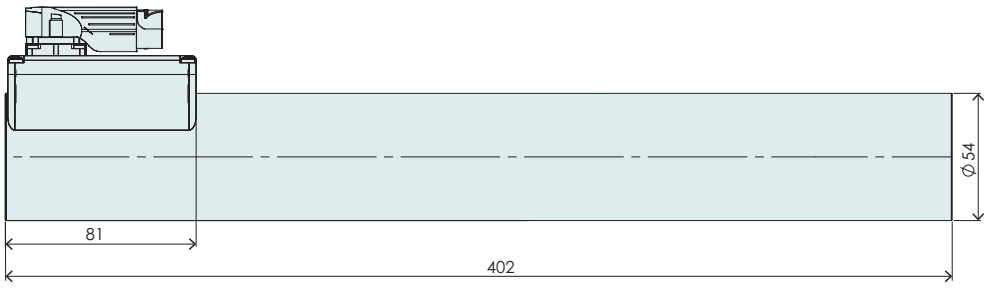
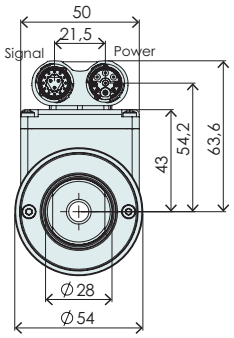
STATOR





Item	Description	Item-No.	Comment
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725	For use with LinMot Drives
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411	For use with 3rd Party Drives
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594	For use with 3rd Party Drives
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751	For use with 3rd Party Drives
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051	For use with 3rd Party Drives
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755	For use with 3rd Party Drives
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785	For use with 3rd Party Drives
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958	For use with 3rd Party Drives
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773	For use with 3rd Party Drives

AVAILABLE INTERFACES FOR 3RD PARTY DRIVES

TEMPERATURE FEEDBACK		POSITION FEEDBACK			
		SinCos, 1Vpp	A/B 1µm	A/B 5µm	BiSS-C
		D0x	D2x	D2xS	D3x
MotLink C					
Pt1000, dual*	Dx4	**D04**	**D24**	**D24S**	**D34**
PTC, dual*	Dx5	**D05**	**D25**	**D25S**	
PTC single ended	Dx6		**D26**		

* Feedback available on encoder and power connectors.

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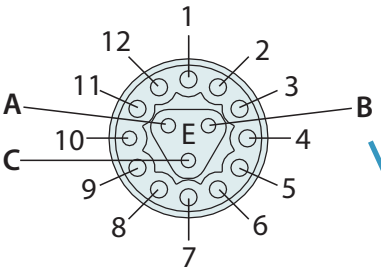
CONNECTOR PS10-54x300U-BL-TU (INTERFACE FOR LINMOT DRIVES)

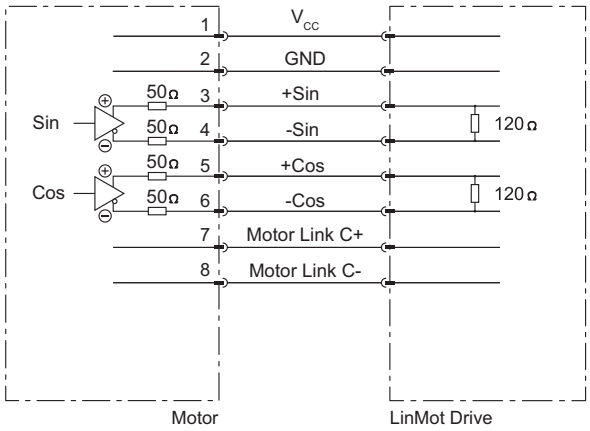
Motor Connector Wiring		Connector Encoder Uk	Wire Color Motor Cable
+Vcc	Supply	1	red
GND	Supply	2	black
Sin+	Encoder	3	yellow
Sin-	Encoder	4	orange
Cos+	Encoder	5	green
Cos-	Encoder	6	blue
Mot. Link C+	Communication	7	pink
Mot. Link C-	Communication	8	grey
n. c.	n. c.	9	n. c.
n. c.	n. c.	10	n. c.
n. c.	n. c.	11	n. c.
n. c.	n. c.	12	n. c.
n. c.	n. c.	A	n. c.
n. c.	n. c.	B	n. c.
n. c.	n. c.	C	n. c.

* The supply voltage Vcc depends on the LinMot Drive type and is within 6...9V.

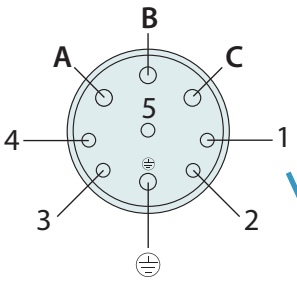


Connector Encoder Uk

View: Motor connector, plug side

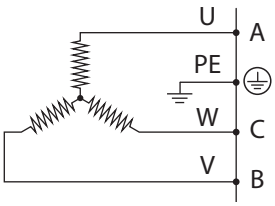


Motor Connector Wiring	Connector Power Tk	Wire Color Motor Cable
Phase U	A	red
PE	PE	yellow-green
Phase V	B	blue
Phase W	C	black (previously: green)
n. c.	1	n. c.
n. c.	2	n. c.
n. c.	3	n. c.
n. c.	4	n. c.
n. c.	5	n. c.



Connector Power Tk

View: Motor connector, plug side



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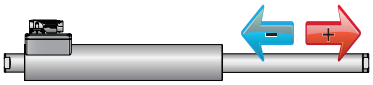
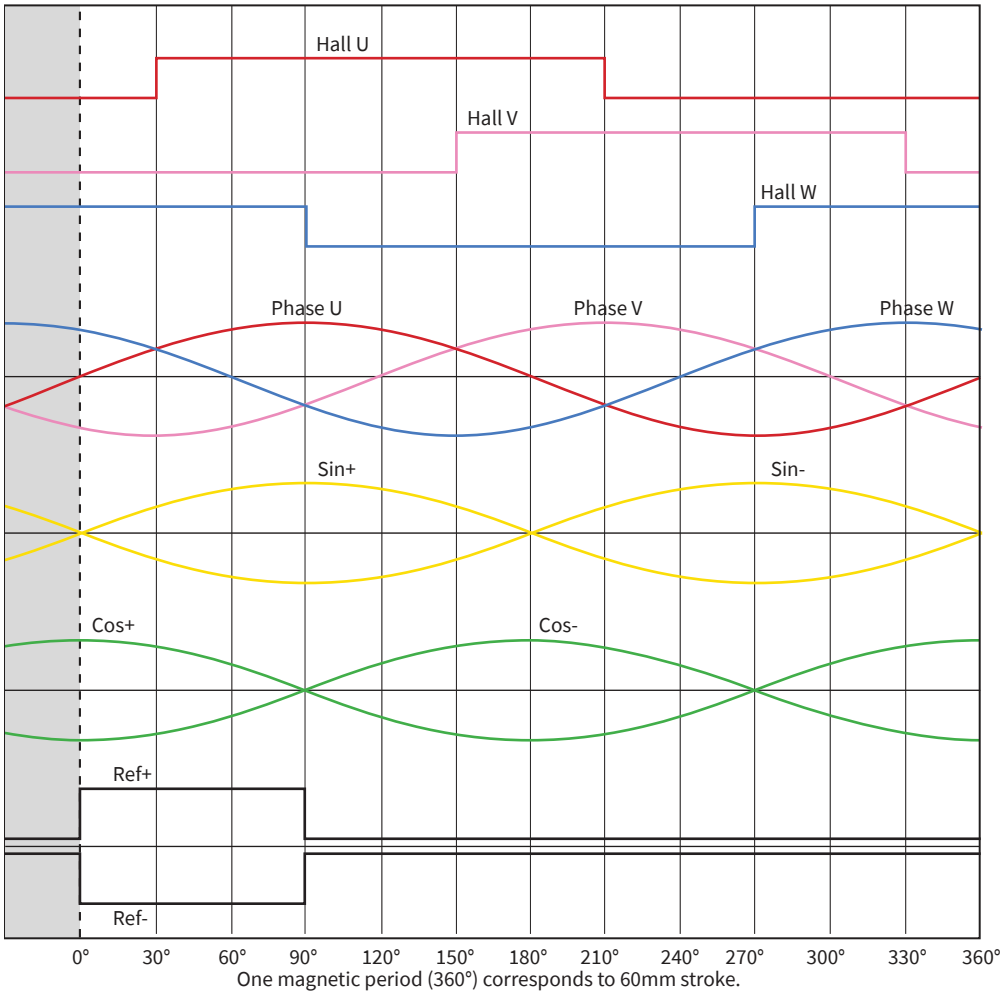
SIN/COS-POSITIONS-FEEDBACK (D0X-INTERFACE FOR 3RD PARTY DRIVES)

The linear motors of the P10-54 series have a contactless, integrated position feedback, which means that an external encoder is not required. The integrated position sensor technology of the motors with D0x interface provides a differential standard 1Vpp sin/cos signal with a 60mm period. The phase position of the sensor signals and the phase currents (with constant force in positive direction) is shown on the right side of the diagram. (The Sin encoder signal is in phase with the current characteristic of phase U).



The arrows show the direction of movement of the slider. The stator remains in its position.

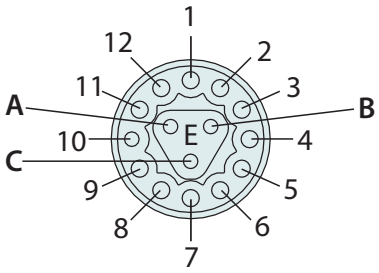


One magnetic period (360°) corresponds to 60mm stroke.

Sin / Cos		P10-54x...-D0x
Output signal period	mm	60
Signal amplitude[1]	V_{PP}	1
Termination[1]	Ohm	120
Supply votage	Vdc	3...13 (w or w/o sense)
Power consumption	mW	< 1000
		(I < 150mA @ 5VDC, I < 80mA @ 12 VDC)[2]

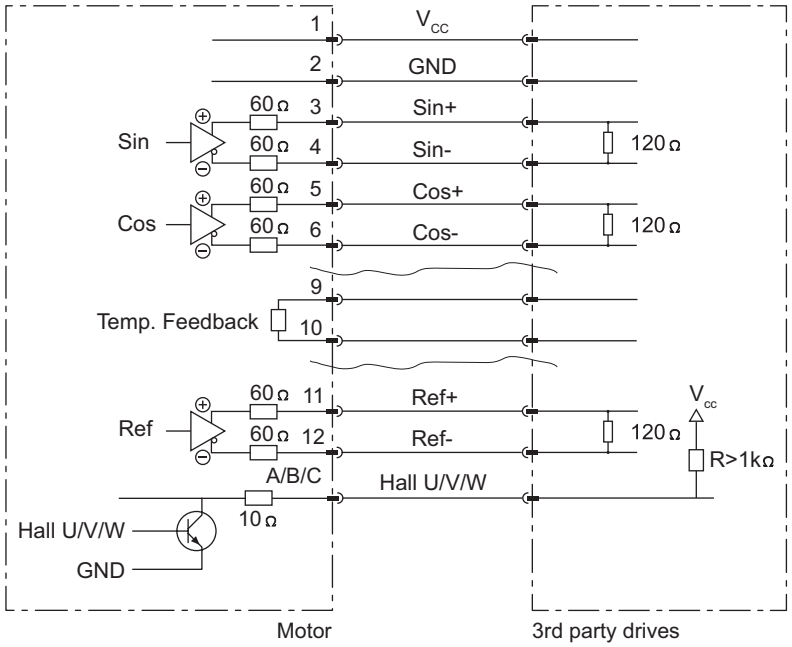
1) Applicable for Sin+/Sin-, Cos+/Cos- and Ref+/Ref- signals. Hall U/V/W are open collector signals.
2) Power effeciency of the motor electronics varies with supply voltage.

CONNECTOR PS10-54x300U-BL-TU-D04/05 (SIN/COS-INTERFACE FOR 3RD PARTY DRIVES)

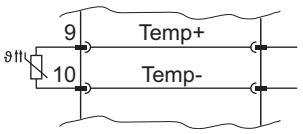


Connector Encoder Uk

View: Motor connector, plug side

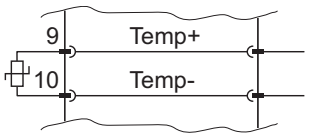


PS10-54x300U-BL-TU-D04



Pt1000 Characteristic emulated

PS10-54x300U-BL-TU-D05

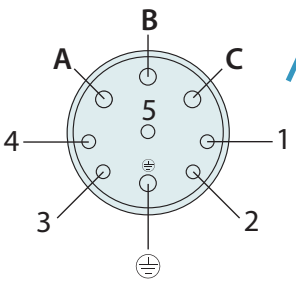


PTC (switching type)
400 Ω / 20 kΩ emulated[1]

1) ≤ 400 Ω = no error, ≥ 20 kΩ = error

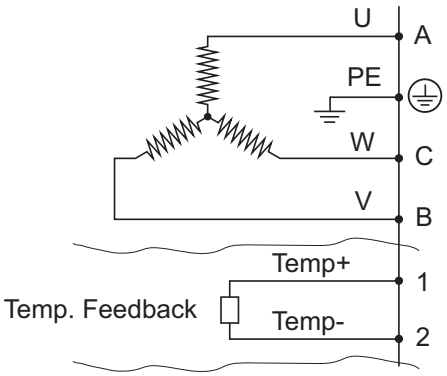
Sin/Cos-Interface: Encoder Connector Wiring				
PS10-54x300U-BL-TU-D04	PS10-54x300U-BL-TU-D05	Function	Connector Encoder Uk	Wire Color Motor Cable KSS05-02/13
+Vcc		Supply	1	white
GND		Supply	2	brown
Sin+		Encoder	3	grey
Sin-		Encoder	4	pink
Cos+		Encoder	5	blue
Cos-		Encoder	6	red
Do not connect		–	7	–
Do not connect		–	8	–
Temp+ (Pt1000 Char.)	Temp+ (PTC 400/20k Char.)	Temperature[2]	9	yellow-brown
Temp- (Pt1000 Char.)	Temp- (PTC 400/20k Char.)	Temperature[2]	10	white-yellow
Ref+		Encoder	11	black
Ref-		Encoder	12	violett
Hall U		Encoder	A	grey-red
Hall V		Encoder	B	red-blue
Hall W		Encoder	C	white-green

2) The temperature evaluation circuit must have the same galvanic reference potential as the encoder circuit (supply). It should therefore be connected to the supply GND. For correct evaluation, the connection potentials of the emulated temperature sensor must be in the range of the supply potentials.
Valid temperature values can only be measured 50ms after the encoder supply is applied. In the currentless state, a resistance of 200kOhm is measured between pin 9 and 10 is measured. The maximum voltage between pin 9 and 10 must not exceed 16VDC. The maximum current is 15mA.

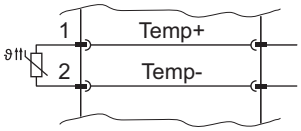


Connector Power Tk

View: Motor connector, plug side

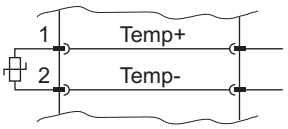


PS10-54X300U-BL-TU-D04



Pt1000 Characteristic emulated

PS10-54X300U-BL-TU-D05



PTC (switching type)
400 Ω / 20 kΩ emulated[1]

1) ≤ 400 Ω = no error, ≥ 20 kΩ = error

Sin/Cos-Interface: Power Connector Wiring			
PS10-54x300U-BL-TU-D04	PS10-54x300U-BL-TU-D05	Connector Power Tk	Wire Color Motor Cable KPS07-04/02
Phase U		A	red
PE		PE	yellow-green
Phase V		B	blue
Phase W		C	black (before: green)
Pt1000+ [1]	PTC+ [1]	1	cyan
Pt1000- [1]	PTC- [1]	2	grey
n. c.	n. c.	3	n. c.
n. c.	n. c.	4	n. c.
n. c.	n. c.	5	n. c.

1) The temperature evaluation circuit must have the same galvanic reference potential as the encoder circuit (supply). It should therefore be connected to the supply GND. For correct evaluation, the connection potentials of the emulated temperature sensor must be in the range of the supply potentials. Valid temperature values can only be measured 50ms after the encoder supply is applied. In currentless state a resistance of 200kOhm is measured between pin 1 and 2. The maximum voltage between pin 1 and 2 must not exceed 16VDC. The maximum current is 15mA.

TEMPERATURE FEEDBACK DX4 / DX5

Overheating protection is provided by three internal thermistors embedded in the motor windings. These thermistors are monitored by the motor electronics. A single thermistor is tracked based on the maximum of the temperature readings. This is done to accurately monitor the temperature along the entire length of the stator and to react as quickly as possible to dynamic changes in a single motor phase. When the motor winding temperature reaches its absolute maximum value, the drive amplifier/servo controller must shut down the motor to protect the motor from overheating damage. To support the temperature evaluation given by the drive amplifier/servocontroller, the various temperature interfaces -Dx4 or -Dx5 are available. Depending on the interface used and the signals used, there are suitable motor cables (see overview table, section Accessories/Motor cables).

Dx4 (Pt1000 dual)

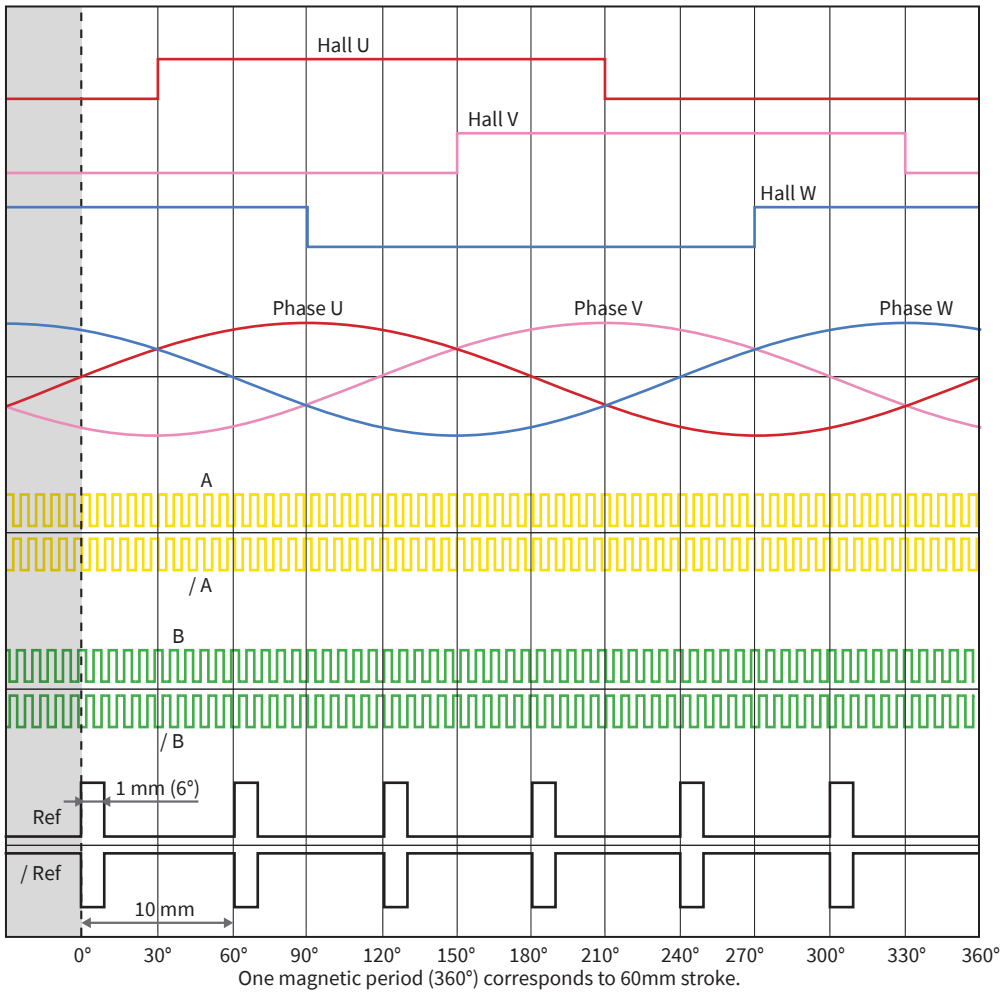
An emulated **Pt1000 thermistor** is available on both the **signal and the power connector** for evaluating the max. motor temperature.

Dx5 (PTC dual)

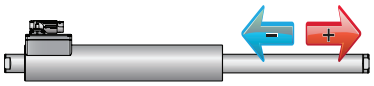
An emulated **PTC thermistor** is available on both **the signal and the power connector**, which changes to the high-impedance state when the max. motor temperature is exceeded.

A/B INCREMENTAL POSITION FEEDBACK (D2X- INTERFACE FOR 3RD PARTY DRIVES)

The linear motors of the P10-54 series have a contactless, integrated position feedback, which means that an external encoder is not required.
The position output of the motors with D2x interface is an industry-standard A/B incremental signal with supplementary reference signal (RS422). Hall switch signals are available for commutation. The relationship between the phase current and the position sensor output is shown on the right.



One magnetic period (360°) corresponds to 60mm stroke.

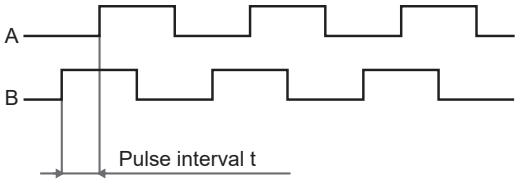


The arrows show the direction of movement of the slider. The stator remains in its position.

Example:
Min. pulse interval t = 500 ns
For downstream evaluation, at least the following counter frequency is required:

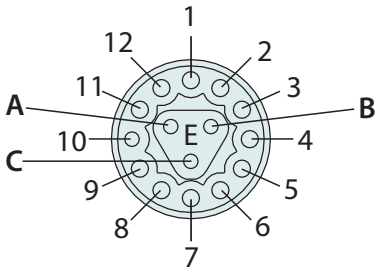
f_counter = 1 / pulse interval
= 1 / 500 ns = 2 MHz

The logical state of signals A and B is not defined in relation to the reference signal Ref. The signal shape may differ from the illustration.



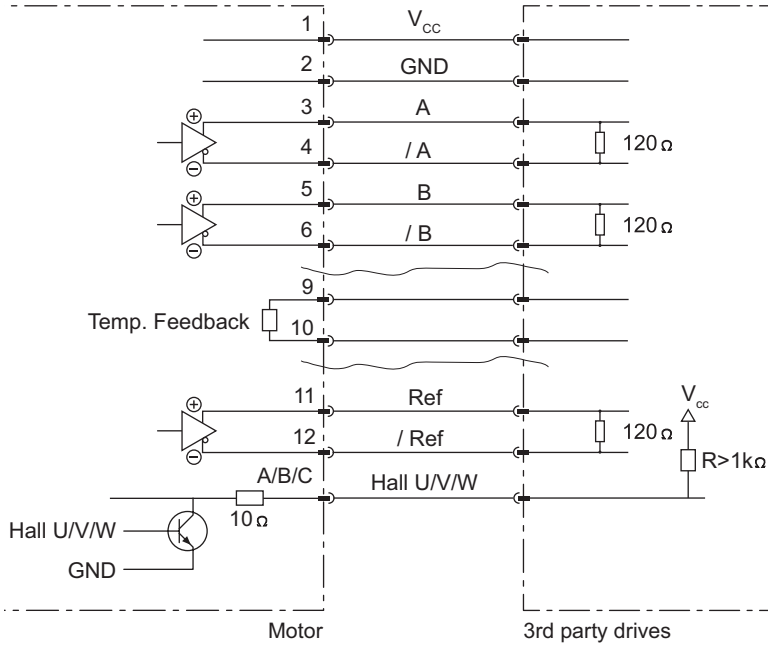
A / B		P10-54x...-D2x	P10-54x...-D2xS
Position Resolution	µm	1	5
Output Type		RS422	
Min. Edge Distance t	ns	100	500
Min. required counter frequency	MHz	10	2
Supply Voltage	Vdc	5 -12	
Max. Supply Current	mA	300	300

CONNECTOR PS10-54x300U-BL-TU-D24 / D24S / 25 / 25S / 26 (A/B-INTERFACE FOR 3RD PARTY DRIVES)

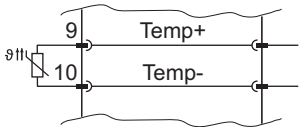


Connector Encoder Uk

View: Motor connector, plug side

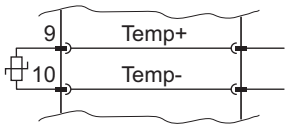


PS10-54x300U-BL-TU-D24
PS10-54x300U-BL-TU-D24S



Pt1000 Characteristic emulated

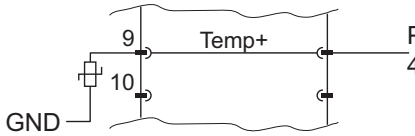
PS10-54x300U-BL-TU-D25
PS10-54x300U-BL-TU-D25S



PTC (switching type)
400 Ω / 20 kΩ emulated[1]

1) ≤ 400 Ω = no error, ≥ 20 kΩ = error

PS10-54x300U-BL-TU-D26

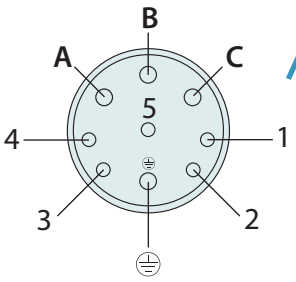


PTC (switching type)
400 Ω / 20 kΩ emulated[1]

1) ≤ 400 Ω = no error, ≥ 20 kΩ = error

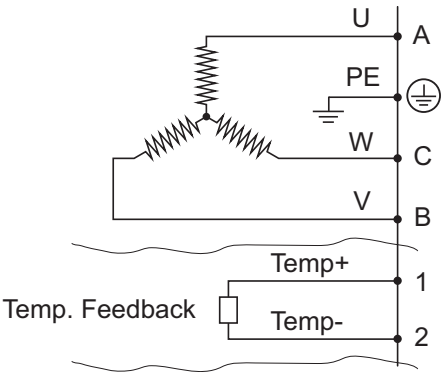
A/B-Interface: Encoder Connector Wiring					
PS10-54x300U-BL-TU-D24 PS10-54x300U-BL-TU-D24S	PS10-54x300U-BL-TU-D25 PS10-54300U-BL-TU-D25S	PS10-54x300U-BL-TU-D26	Function	Connector Encoder Uk	Wire Color Motor Cable KSS05-02/13
+Vcc			Supply	1	white
GND			Supply	2	brown
A			Encoder	3	grey
/ A			Encoder	4	pink
B			Encoder	5	blue
/ B			Encoder	6	red
Do not connect			–	7	–
Do not connect			–	8	–
Temp+ (Pt1000 Char.)	Temp+ (PTC 400/20k Char.)	Temp+ (PTC 400/20k Char.)	Temperature[2]	9	yellow-brown
Temp- (Pt1000 Char.)	Temp- (PTC 400/20k Char.)	Do not connect	Temperature[2]	10	white-yellow
Ref			Encoder	11	black
/ Ref			Encoder	12	violett
Hall U			Encoder	A	grey-red
Hall V			Encoder	B	red-blue
Hall W			Encoder	C	white-green

2) The temperature evaluation circuit must have the same galvanic reference potential as the encoder circuit (supply). It should therefore be connected to the supply GND. For correct evaluation, the connection potentials of the emulated temperature sensor must be in the range of the supply potentials.
Valid temperature values can only be measured 50ms after the encoder supply is applied. In the currentless state, a resistance of 200kOhm is measured between pin 9 and 10 is measured. The maximum voltage between pin 9 and 10 must not exceed 16VDC. The maximum current is 15mA.

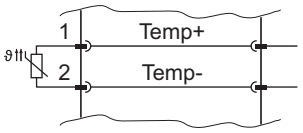


Connector Power Tk

View: Motor connector, plug side

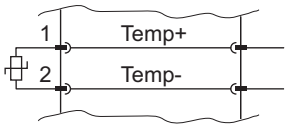


PS10-54x300U-BL-TU-D24
PS10-54x300U-BL-TU-D24S



Pt1000 Characteristic emulated

PS10-54x300U-BL-TU-D25
PS10-54x300U-BL-TU-D25S



PTC (switching type)
400 Ω / 20 kΩ emulated[1]

1) ≤ 400 Ω = no error, ≥ 20 kΩ = error

A/B-Interface: Power Connector Wiring				
PS10-54x300U-BL-TU-D24 PS10-54x300U-BL-TU-D24S	PS10-54x300U-BL-TU-D25 PS10-54x300U-BL-TU-D25S	PS10-54x300U-BL-TU-D26	Connector Power Tk	Wire Color Motor Cable KPS07-04/02
Phase U			A	red
PE			PE	yellow-green
Phase V			B	blue
Phase W			C	black (before: green)
Pt1000+ 1)	PTC+ 1)	Do not connect	1	cyan
Pt1000- 1)	PTC- 1)	Do not connect	2	grey
n. c.	n. c.	n. c.	3	n. c.
n. c.	n. c.	n. c.	4	n. c.
n. c.	n. c.	n. c.	5	n. c.

1) The temperature evaluation circuit must have the same galvanic reference potential as the encoder circuit (supply). It should therefore be connected to the supply GND. For correct evaluation, the connection potentials of the emulated temperature sensor must be in the range of the supply potentials. Valid temperature values can only be measured 50ms after the encoder supply is applied. In currentless state a resistance of 200kOhm is measured between pin 1 and 2. The maximum voltage between pin 1 and 2 must not exceed 16VDC. The maximum current is 15mA.

TEMPERATURE FEEDBACK DX4 / DX5 / DX6

Overheating protection is provided by three internal thermistors embedded in the motor windings. These thermistors are monitored by the motor electronics. A single thermistor is replicated based on the maximum of the temperature readings. This is done to accurately monitor the temperature along the entire length of the stator and to react as quickly as possible to dynamic changes in a single motor phase. When the motor winding temperature reaches its absolute maximum value, the drive amplifier/servo controller must shut down the motor to protect the motor from overheating damage. To support the temperature evaluation given by the drive amplifier/servocontroller, different temperature interfaces -DX4, -DX5 or -DX6 are available. Depending on the interface used and the signals used, there are suitable motor cables (see overview table section Accessories/Motor cables).

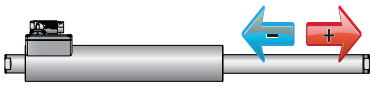
Dx4 (Pt1000 dual)
An emulated **Pt1000 thermistor** is available on both the **signal and the power connector** for evaluating the max. motor temperature.

Dx5 (PTC dual)
An emulated **PTC thermistor** is available on both the **signal and the power connector**, which changes to the high-impedance state when the max. motor temperature is exceeded.

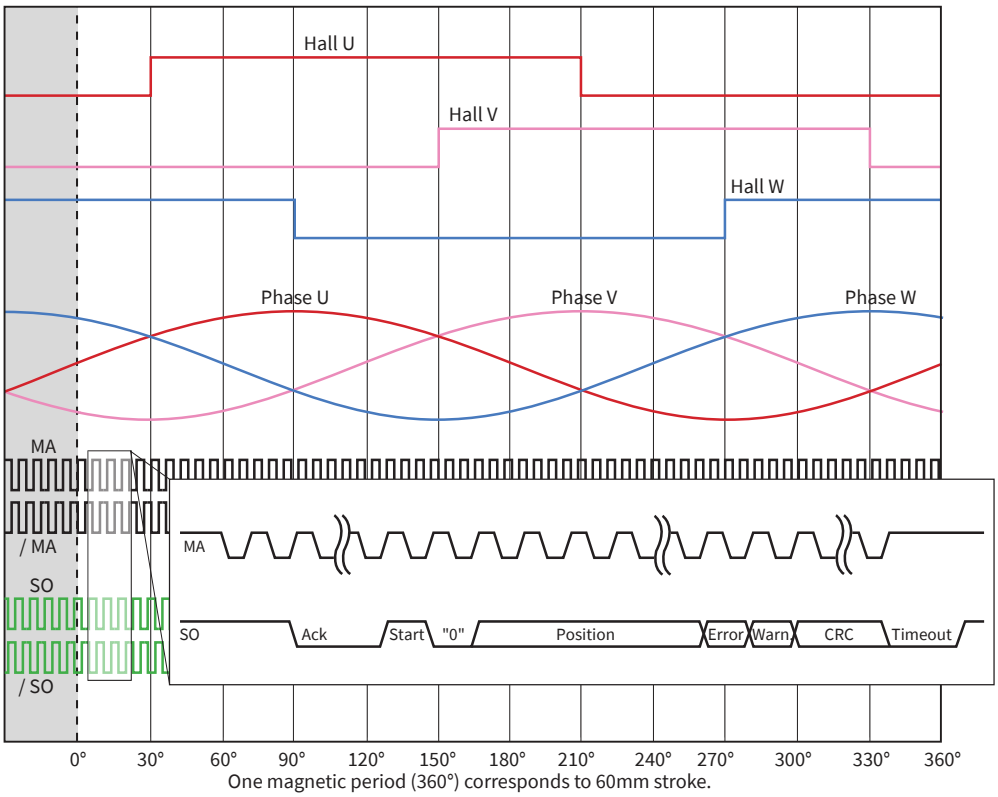
Dx6 (PTC)
An emulated PTC thermistor is available on the **signal connector**, which changes to the high-impedance state when the max. motor temperature is exceeded. The emulated **PTC** is internally **connected to GND on one side**, which is why only one additional signal line is connected to the servocontroller in addition to the power supply for evaluation.

BISS-C POSITION FEEDBACK (D3X- INTERFACE FOR 3RD PARTY DRIVES)

The linear motors of the P10-54 series have contactless, integrated position feedback, which means that there is no need for an external encoder.
The position feedback of the motors with D3x interface is based on RS422 and the industry-standard BiSS-C protocol. Either the transmitted position or the hall switch signals can be used for commutation. The relationship between the phase current and the encoder signals is shown on the right.



The arrows show the direction of movement of the slider. The stator remains in its position.



One magnetic period (360°) corresponds to 60mm stroke.

BiSS-C[1]		P10-54x...-D3x		
Singleturn Position Resolution	µm	1		
Output Type		RS422		
MA Clock frequency	MHz	1...3.3		
Max. request cycle rate[2]	kHz	16		
Supply Voltage	Vdc	5 -12		
Max. Supply Current	mA	300		
Data Type		SCDS (Single Cycle Data Sensor)		
Data (Bits)		Position	nER	nWA
		Singleturn	1	1
		34		
Data Format and Alignment		Binary coded, MSB first, right aligned		
CRC polynomial		0x43 ($X^6 + X^1 + X^0$) – CRC bit length 6 bits, CRC is inverted		
CRC Starting Value		0x00		
BiSS Timeout (tm)	µs	~20		
Switch-on Delay	ms	100		

1) Compatible with bidirectional interfaces supporting EDS register access and unidirectional interfaces
2) Achievable only if the data transmission time is shorter than one request cycle. Recommended MA Clock frequency 2MHz.

Commutation Angle

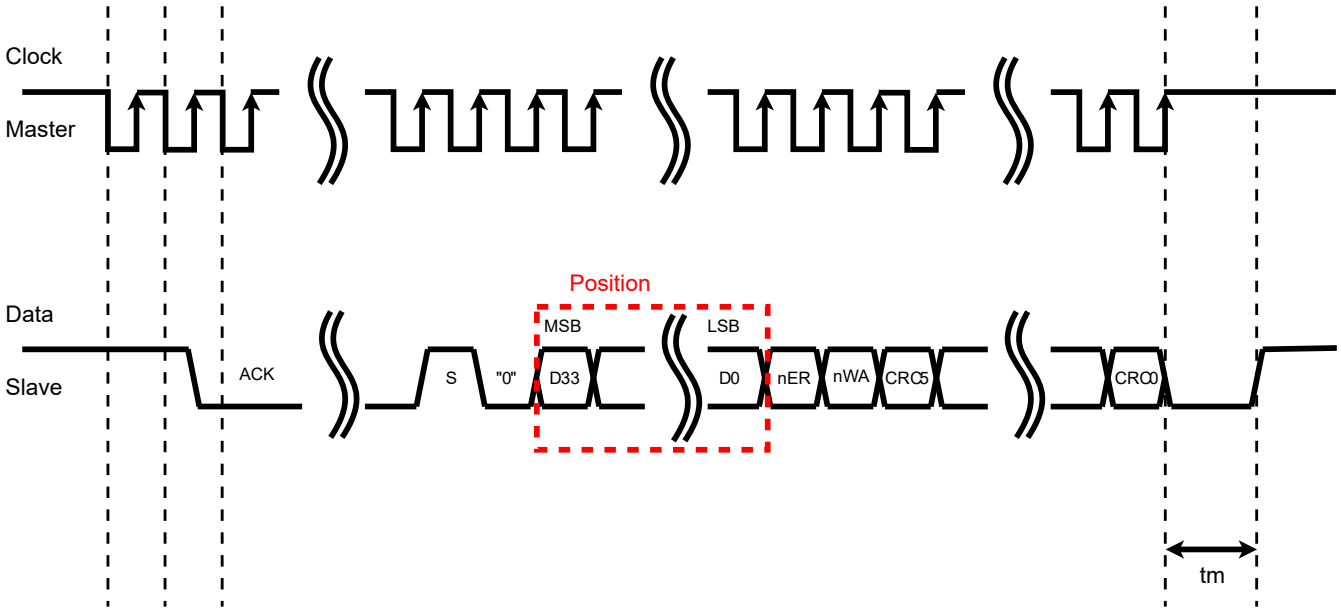
$$\text{Commutation Angle} = (\text{Position mod magnetic Period}) \cdot \frac{360°}{\text{Magnetic Period}}$$

First, the position data is reduced to the range within a magnetic period using modulo.

This relative position value is then converted into an electrical angle.

4

BISS-C-FRAME DESCRIPTION



Singleturn Position 34 Bit: D33-D0
Binary coded, MSB first
Resolution per bit = 1 µm
After switching on the encoder, the position starts with an offset of 3 m. In addition to the offset, the current position angle of the slider within a pole pair (magnetic period) of the motor is added to this. This position can be used for commutation.

Errorbit: nER
0: error; 1: no error (active low).
Indicates an encoder error. If this bit indicates an error, the position must be treated as invalid.

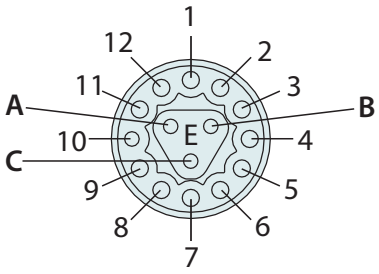
Warnbit: nWA
0: warning; 1: no warning (active low).
Displays encoder warnings. The position is still valid if only a warning is displayed.

CRC 6 Bit: CRC5-0
Polynomial : 0x43
Initial value : 0x00
The CRC is calculated via position, error and warning bits.
It is transmitted with MSB first and inverted. The start bit and the “0” bit are omitted from the CRC calculation.

Register and Memory Definitions
A description of how a BiSS-C master can access registers can be found at www.biss-interface.com.

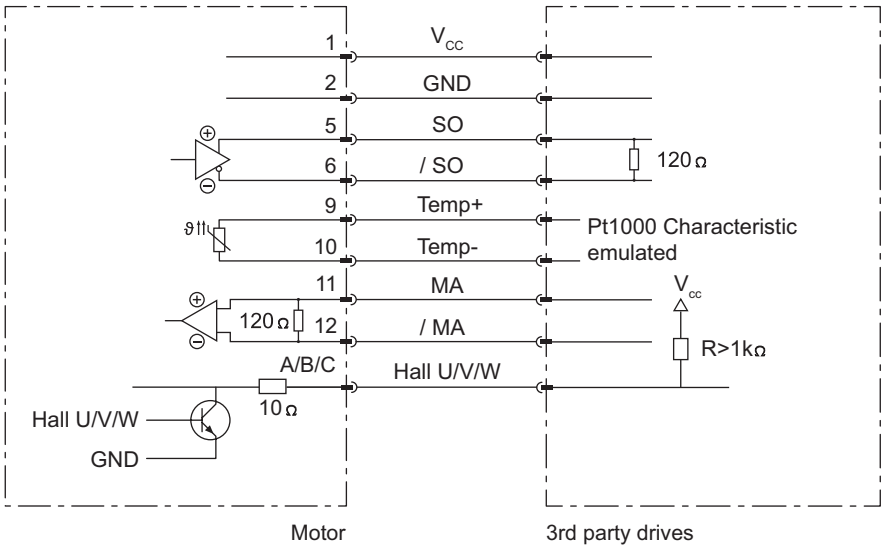
BiSS-C - XML
The encoder is compatible with the “Standard Encoder Profile (BP3)”.
The function of the XML file is to automatically assign device properties in the master using the BiSS identifier.
The XML file can be used by masters to facilitate the configuration of slave devices.
It can be downloaded from www.linmot.com.

CONNECTOR PS10-54x300U-BL-TU-D34 (BISS-C-INTERFACE FOR 3RD PARTY DRIVES)



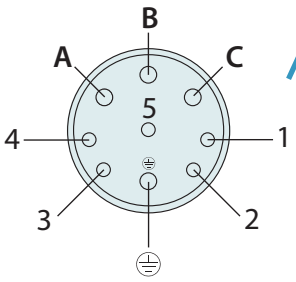
Connector Encoder Uk

View: Motor connector, plug side



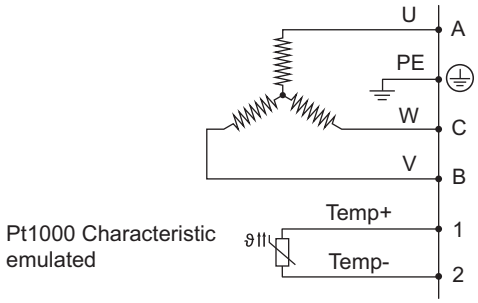
BiSS-C-Interface: Encoder Connector Wiring			
PS10-54x300U-BL-TU-D34	**Function**	**Connector Encoder Uk**	**Wire Color Motor Cable KSS05-02/13**
+Vcc	Supply	1	white
GND	Supply	2	brown
Do not connect	–	3	–
Do not connect	–	4	–
SO (Slave out)	Encoder RS422	5	blue
/ SO (Slave out)	Encoder RS422	6	red
Do not connect	–	7	–
Do not connect	–	8	–
Temp+ (Pt1000 Char.)	Temperature [1)]	9	yellow-brown
Temp- (Pt1000 Char.)	Temperature [1)]	10	white-yellow
MA (Master clock)	Encoder RS422	11	black
/ MA (Master clock)	Encoder RS422	12	violett
Hall U	Encoder	A	grey-red
Hall V	Encoder	B	red-blue
Hall W	Encoder	C	white-green

1) The temperature evaluation circuit must have the same galvanic reference potential as the encoder circuit (supply). It should therefore be connected to the supply GND. For correct evaluation, the connection potentials of the emulated temperature sensor must be in the range of the supply potentials.
Valid temperature values can only be measured 50ms after the encoder supply is applied. In the currentless state, a resistance of 200kOhm is measured between pin 9 and 10 is measured. The maximum voltage between pin 9 and 10 must not exceed 16VDC. The maximum current is 15mA.



Connector Power Tk

View: Motor connector, plug side



BiSS-C-Interface: Power Connector Wiring		
PS10-54x300U-BL-TU-D34	**Connector Power Tk**	**Wire Color Motor Cable KPS07-04/02**
Phase U	A	red
PE	PE	yellow-green
Phase V	B	blue
Phase W	C	black (before: green)
Pt1000+ [1]	1	cyan
Pt1000- [1]	2	grey
n. c.	3	n. c.
n. c.	4	n. c.
n. c.	5	n. c.

1) The temperature evaluation circuit must have the same galvanic reference potential as the encoder circuit (supply). It should therefore be connected to the supply GND. For correct evaluation, the connection potentials of the emulated temperature sensor must be in the range of the supply potentials. Valid temperature values can only be measured 50ms after the encoder supply is applied. In currentless state a resistance of 200kOhm is measured between pin 1 and 2. The maximum voltage between pin 1 and 2 must not exceed 16VDC. The maximum current is 15mA.

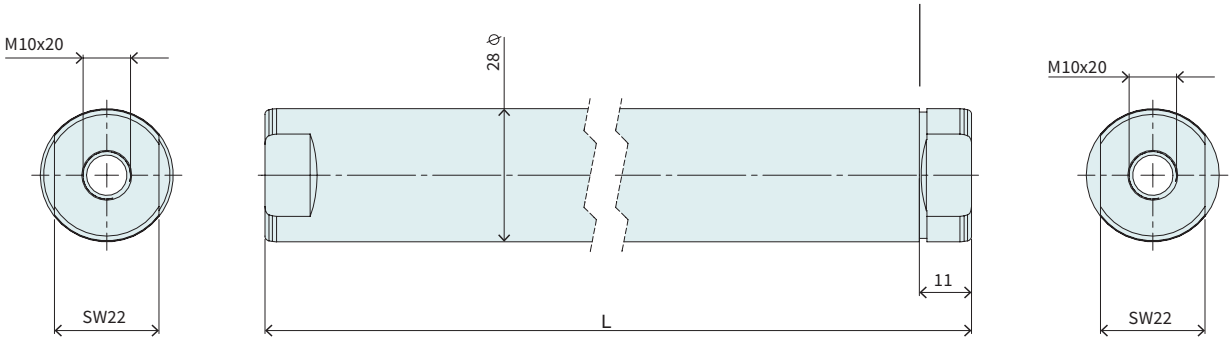
TEMPERATUR FEEDBACK DX4

Overheating protection is provided by three internal thermistors embedded in the motor windings. These thermistors are monitored by the motor electronics. A single thermistor is tracked based on the maximum of the temperature readings. This is done to accurately monitor the temperature along the entire length of the stator and to react as quickly as possible to dynamic changes in a single motor phase. When the motor winding temperature reaches its absolute maximum value, the drive amplifier/servo controller must shut down the motor to protect the motor from overheating damage. To support the temperature evaluation given by the drive amplifier/servocontroller, different temperature interfaces -DX4, -DX5 or -DX6 are available. Depending on the interface used and the signals used, there are suitable motor cables (see overview table, section Accessories/Motor cables).

Dx4 (Pt1000 dual)
An emulated **Pt1000 thermistor** is available on both the **signal and the power connector** for evaluating the max. motor temperature.

SLIDER

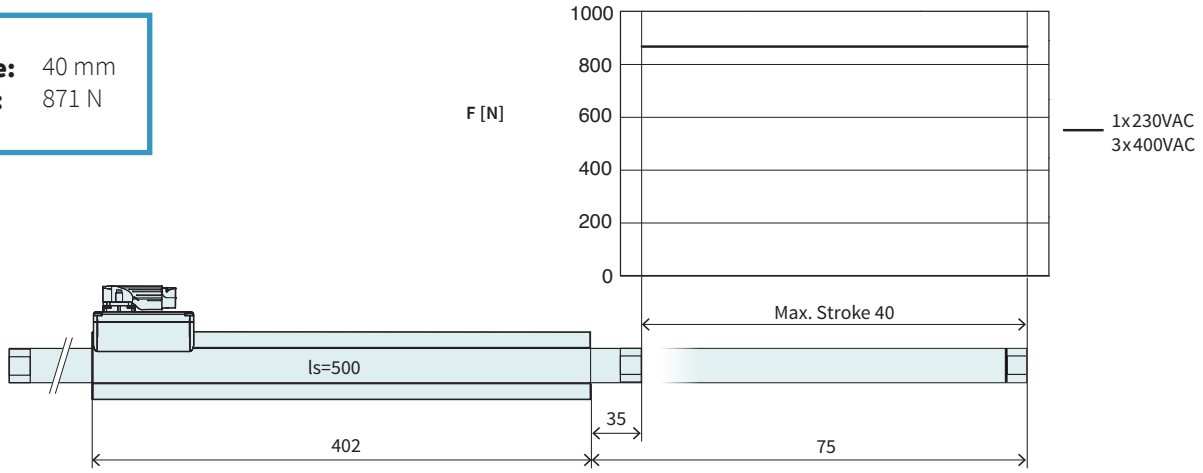
Slider Standard



Slider Standard			
Item	**Description**	**Max. Stroke [mm]**	**Item-No.**
PL01-28x500/420	Slider 'standard'	40	0150-1382
PL01-28x620/540	Slider 'standard'	160	0150-1383
PL01-28x710/630	Slider 'standard'	250	0150-1384
PL01-28x800/720	Slider 'standard'	340	0150-1385
PL01-28x920/840	Slider 'standard'	460	0150-1386
PL01-28x1010/930	Slider 'standard'	550	0150-1387
PL01-28x1220/1140	Slider 'standard'	760	0150-1388
PL01-28x1400/1320	Slider 'standard'	940	0150-1389
PL01-28x1610/1530	Slider 'standard'	1150	0150-1390
PL01-28x1820/1740	Slider 'standard'	1360	0150-1395
PL01-28x2000/1920	Slider 'standard'	1540	0150-1396

P10-54x300U/40-BL-TU

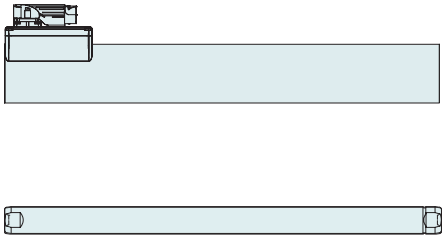
Max. Stroke: 40 mm
Peak Force: 871 N



Dimensions in mm

Technical Data P10-54x300U/40				
Stroke				
Max. Stroke	mm	(in)	40	(1.57)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 2	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	500	(20)
Slider Mass	g	(lb)	2160	(4.75)

1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.

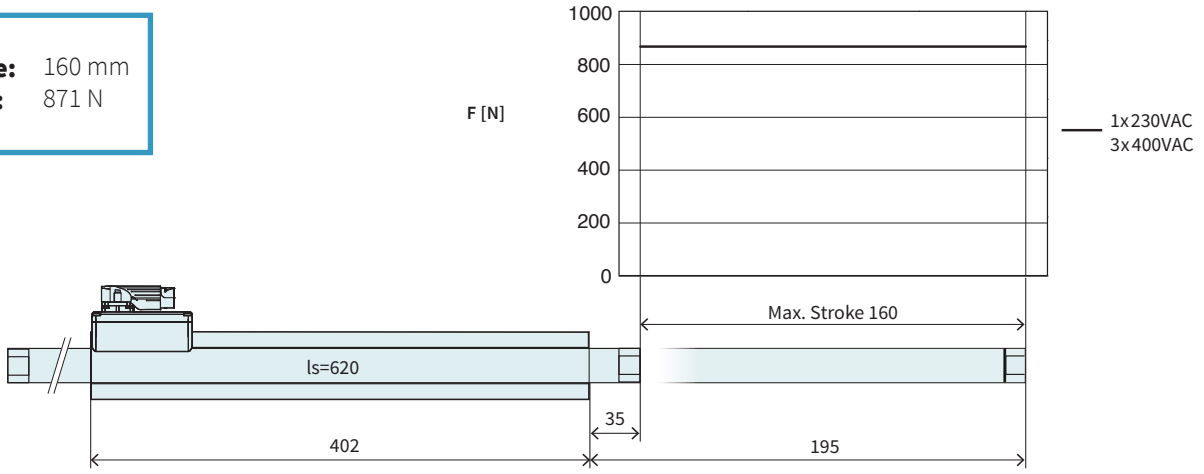


Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x500/420	Slider 'standard'	0150-1382

DOC-NO. 0185-0061-E / VERSION 2V2
SUBJECT TO ALTERATIONS

P10-54x300U/160-BL-TU

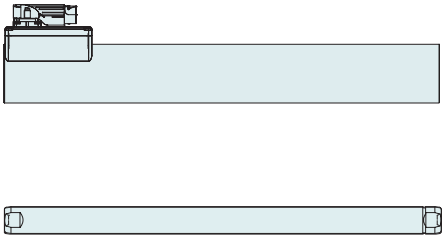
Max. Stroke: 160 mm
Peak Force: 871 N



Dimensions in mm

Technical Data P10-54x300U/160				
Stroke				
Max. Stroke	mm	(in)	160	(6.29)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.55	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	620	(24)
Slider Mass	g	(lb)	2720	(5.98)

1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.

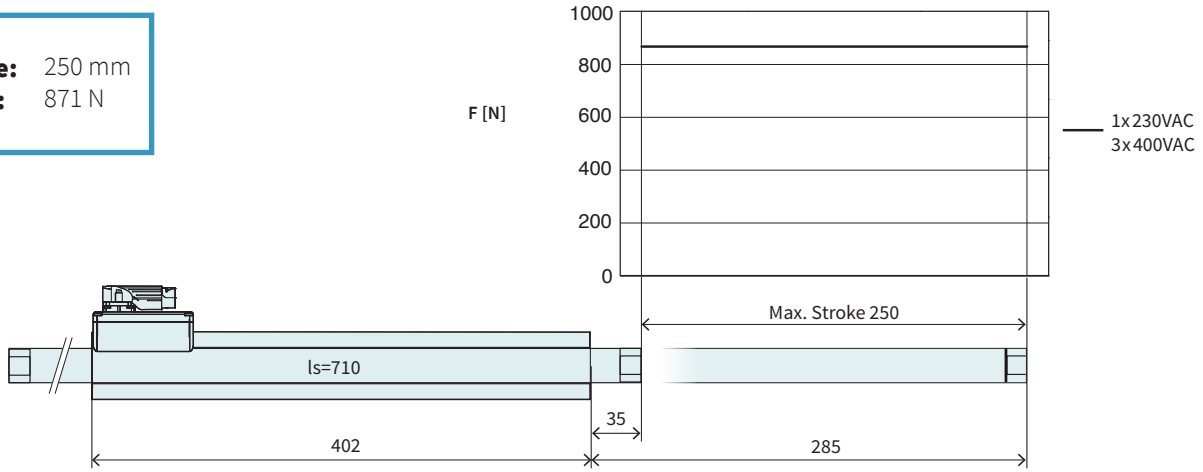


Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x620/540	Slider 'standard'	0150-1383

P10-54x300U/250-BL-TU

4

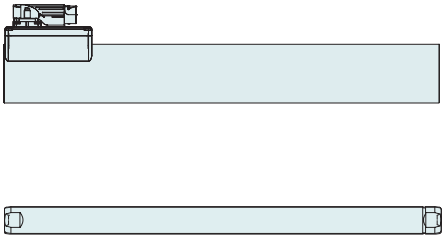
Max. Stroke: 250 mm
Peak Force: 871 N



Dimensions in mm

Technical Data P10-54x300U/250				
Stroke				
Max. Stroke	mm	(in)	250	(9.83)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.4	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	710	(28)
Slider Mass	g	(lb)	3140	(6.91)

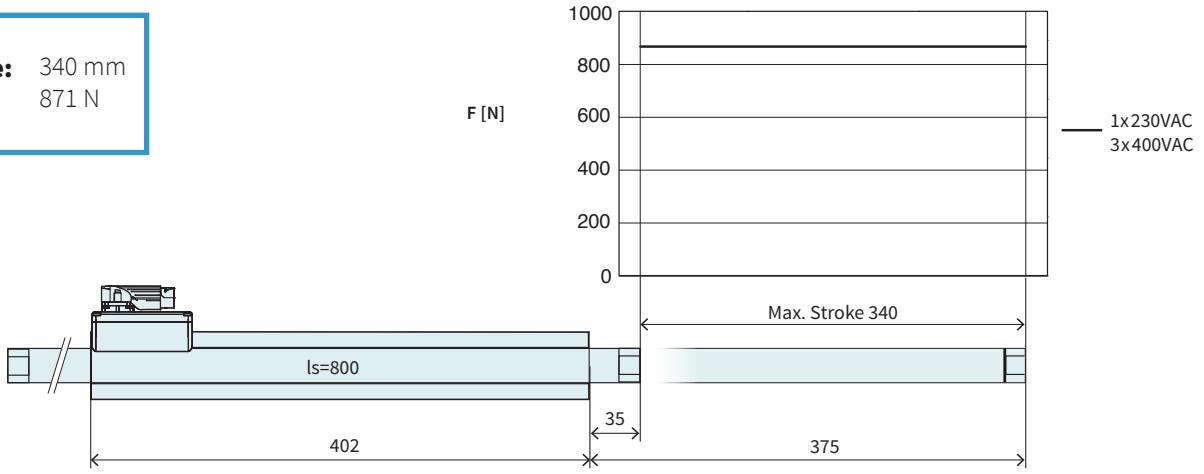
1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.



Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x710/630	Slider 'standard'	0150-1384

P10-54x300U/340-BL-TU

Max. Stroke: 340 mm
Peak Force: 871 N



Dimensions in mm

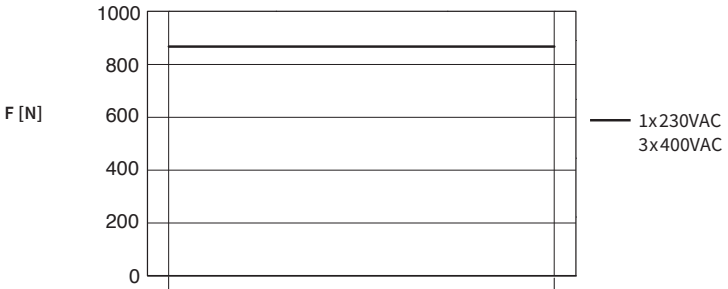
Technical Data P10-54x300U/340				
Stroke				
Max. Stroke	mm	(in)	340	(13.4)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.3	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	800	(31)
Slider Mass	g	(lb)	3560	(7.83)

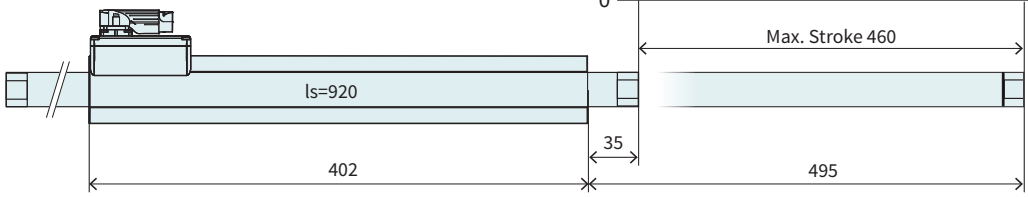
1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.

Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x800/720	Slider 'standard'	0150-1385

P10-54x300U/460-BL-TU

Max. Stroke: 460 mm
Peak Force: 871 N





Dimensions in mm

Technical Data P10-54x300U/460				
Stroke				
Max. Stroke	mm	(in)	460	(18.1)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.25	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	920	(36)
Slider Mass	g	(lb)	4120	(9.06)

1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.

Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x920/840	Slider 'standard'	0150-1386

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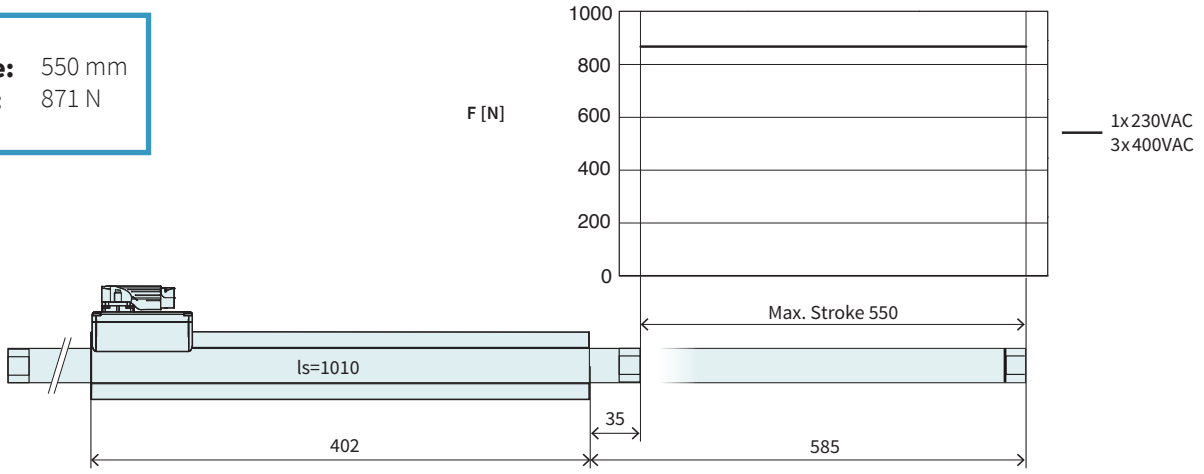
P10-54x300U/550-BL-TU

Max. Stroke: 550 mm
Peak Force: 871 N



Dimensions in mm

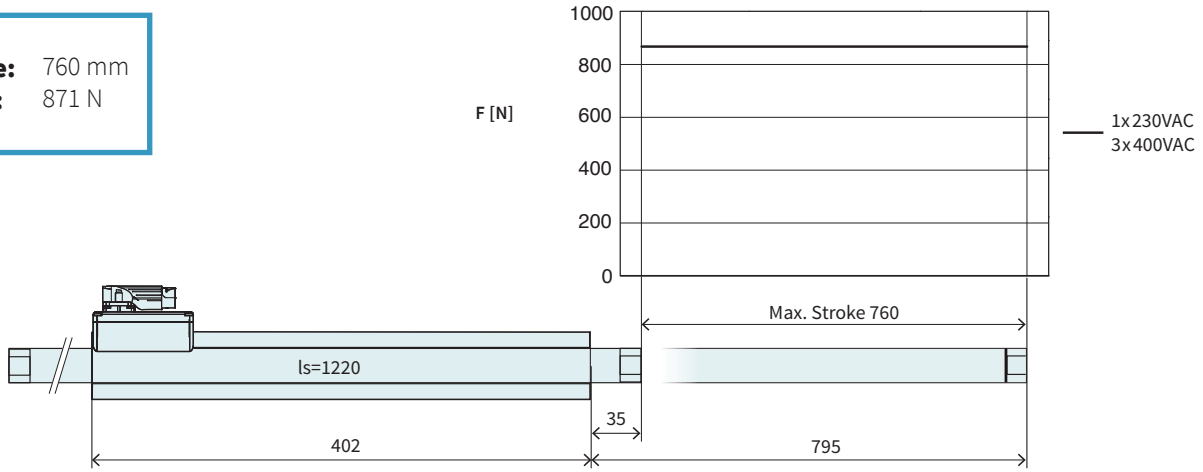
Technical Data P10-54x300U/550				
Stroke				
Max. Stroke	mm	(in)	550	(21.69)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.25	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	1010	(40)
Slider Mass	g	(lb)	4540	(10)

1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.

Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x1010/930	Slider 'standard'	0150-1387

P10-54x300U/760-BL-TU

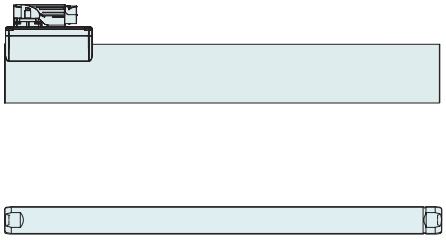
Max. Stroke: 760 mm
Peak Force: 871 N



Dimensions in mm

Technical Data P10-54x300U/760				
Stroke				
Max. Stroke	mm	(in)	760	(29.89)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.2	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	1220	(48)
Slider Mass	g	(lb)	5510	(12.12)

1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.



Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x1220/1140	Slider 'standard'	0150-1388

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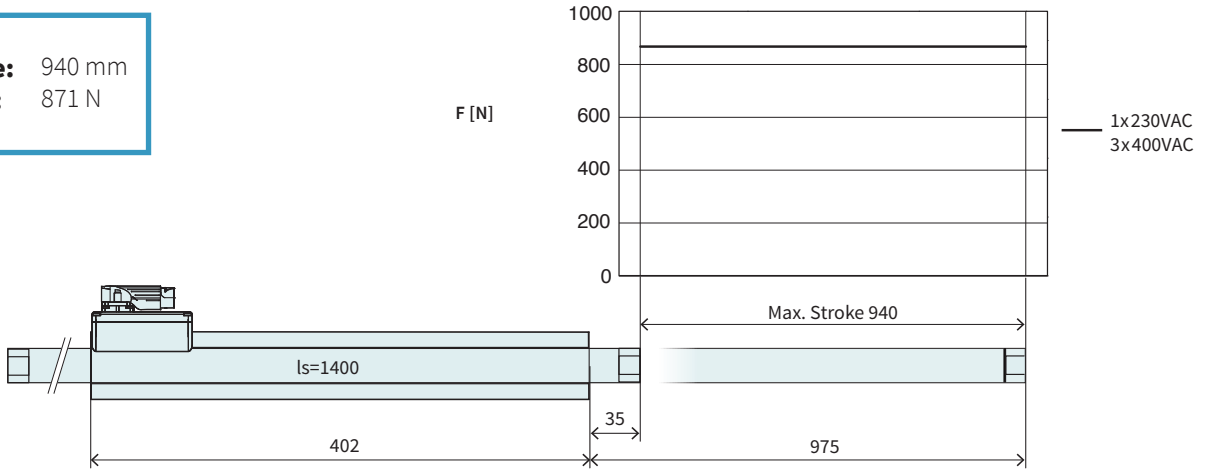
P10-54x300U/940-BL-TU

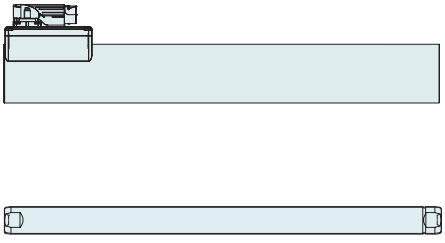
Max. Stroke: 940 mm
Peak Force: 871 N



Dimensions in mm

Technical Data P10-54x300U/940				
Stroke				
Max. Stroke	mm	(in)	940	(36.99)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.2	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	1400	(55)
Slider Mass	g	(lb)	6350	(13.97)

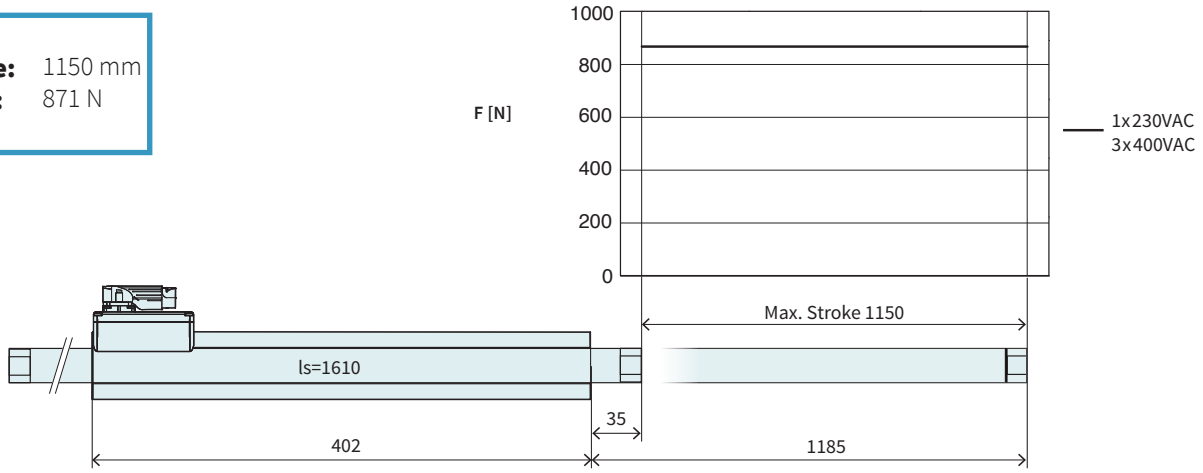
1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.



Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x1400/1320	Slider 'standard'	0150-1389

P10-54x300U/1150-BL-TU

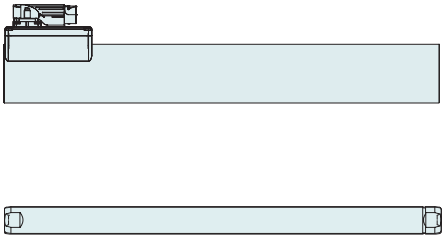
Max. Stroke: 1150 mm
Peak Force: 871 N



Dimensions in mm

Technical Data P10-54x300U/1150				
Stroke				
Max. Stroke	mm	(in)	1150	(45.29)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.15	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	1610	(63)
Slider Mass	g	(lb)	7330	(16.13)

1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.



Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x1610/1530	Slider 'standard'	0150-1390

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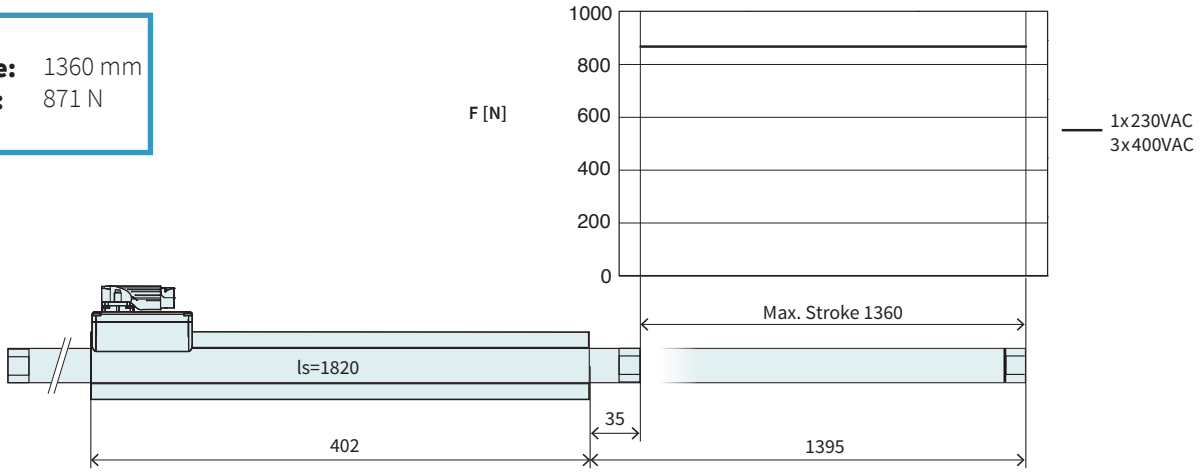
P10-54x300U/1360-BL-TU

Max. Stroke: 1360 mm
Peak Force: 871 N



Dimensions in mm

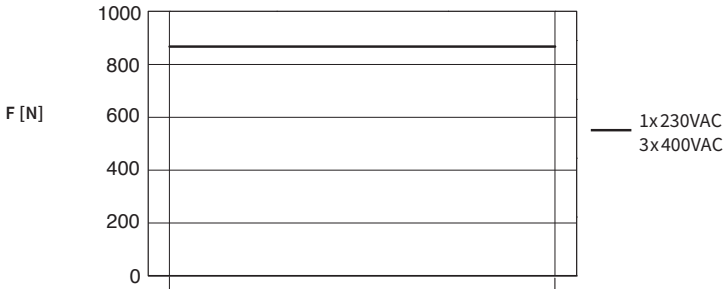
Technical Data P10-54x300U/1360				
Stroke				
Max. Stroke	mm	(in)	1360	(53.49)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.15	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	1820	(72)
Slider Mass	g	(lb)	8300	(18.26)

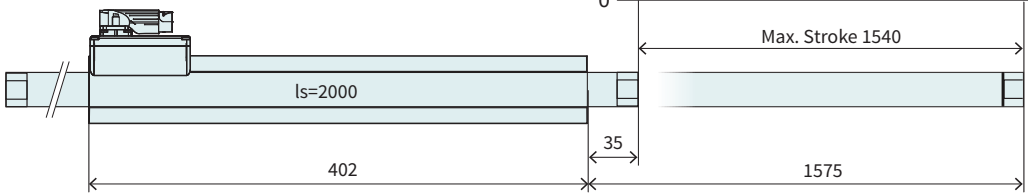
1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.

Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x1820/1740	Slider 'standard'	0150-1395

P10-54x300U/1540-BL-TU

Max. Stroke: 1540 mm
Peak Force: 871 N





Dimensions in mm

Technical Data P10-54x300U/1540				
Stroke				
Max. Stroke	mm	(in)	1540	(60.6)
Force				
Max. Force[1] @ 1x230VAC	N	(lbf)	871	(196)
Max. Force[1] @ 3x400VAC	N	(lbf)	871	(196)
Max. Cont. Force [Passive cooling/ Fan / Fluid]	N	(lbf)	140 / 190 / 270	(31 / 44 / 61)
Max. Border Force relative	%		100	
Force Constant 1	N/A_{pk}	(lbf/A_{pk})	44	(9.89)
Force Constant 2	N/A_{rms}	(lbf/A_{rms})	62.2	(14)
Velocity				
Max. Velocity @ 1x230VAC	m/s	(in/s)	4.1	(159.9)
Max. Velocity @ 3x400VAC	m/s	(in/s)	7.1	(7.1)
Position Detection				
Repeatability	mm	(in)	±0.05	(±0.002)
Linearity	%		± 0.15	
Electrical Data				
Max. Current[1] @ 1x230VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Current[1] @ 3x400VAC	A_{pk} / A_{rms}		19.7 / 13.9	
Max. Cont. Current 1 [Passive cooling /Fan / Fluid]	A_{pk}		3.1 / 4.4 / 6.2	
Max. Cont. Current 2 [Passive cooling /Fan / Fluid]	A_{rms}		2.2 / 3.1 / 4.4	
Thermal Data				
Max. Winding Temperature (Sensor)	°C		90	
Thermal Resistance [Passive cooling / Fan / Fluid]	°K/W		1.1 / 0.53 / 0.27	
Thermal Time Constant [Passive cooling / Fan / Fluid]	s		1400 / 660 / 340	
Mechanical Data				
Slider Length	mm	(in)	2000	(79)
Slider Mass	g	(lb)	9140	(20.11)

1) Real time calculation of motor winding temperature is required (including monitoring).
If temperature monitoring is only based on temperature sensor signal (missing thermal model calculation), 70 % of the peak value has to be taken instead.

Item	Description	Item-No.
PS10-54x300U-BL-TU	Stator 3x400VAC, LinMot Encoder	0150-2725
PS10-54x300U-BL-TU-D04	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, Pt1000 dual	0150-4411
PS10-54x300U-BL-TU-D05	Stator 3x400VAC, Sin/Cos Encoder 1Vpp, PTC dual	0150-4594
PS10-54x300U-BL-TU-D24	Stator 3x400VAC, A/B Encoder, Pt1000	0150-2751
PS10-54x300U-BL-TU-D24S	Stator 3x400VAC, A/B Encoder 5µm, Pt1000	0150-4051
PS10-54x300U-BL-TU-D25	Stator 3x400VAC, A/B Encoder, PTC	0150-2755
PS10-54x300U-BL-TU-D25S	Stator 3x400VAC, A/B Encoder 5µm, PTC	0150-2785
PS10-54x300U-BL-TU-D26	Stator 3x400VAC, A/B Encoder, PTC single ended	0150-2958
PS10-54x240U-BL-TU-D34	Stator 3x400VAC, BiSS-C Encoder, Pt1000 dual	0150-5773
PL01-28x2000/1920	Slider 'standard'	0150-1396

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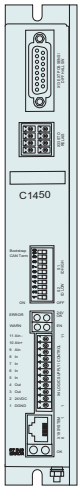
SUBJECT TO ALTERATIONS

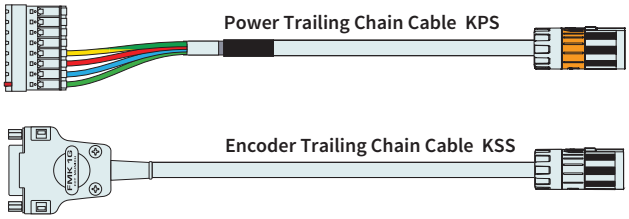
Motor Cables for LinMot Drives



C1400

L Connector MC10-L/m

Tk Connector MC10-Tk/f



P10-54x300U

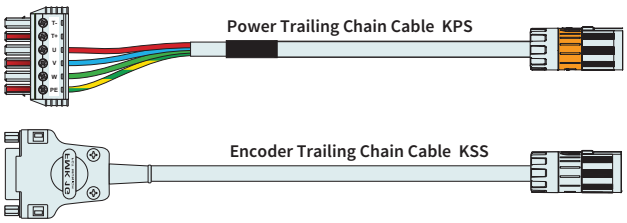
D15s Connector MC01-D15s-45°/f

Uk Connector MC10-Uk/f

E1400

L Connector MC10-L/m

Tk Connector MC10-Tk/f



P10-54x300U

D15s Connector MC01-D15s-45°/f

Uk Connector MC10-Uk/f

ORDERING INFORMATION

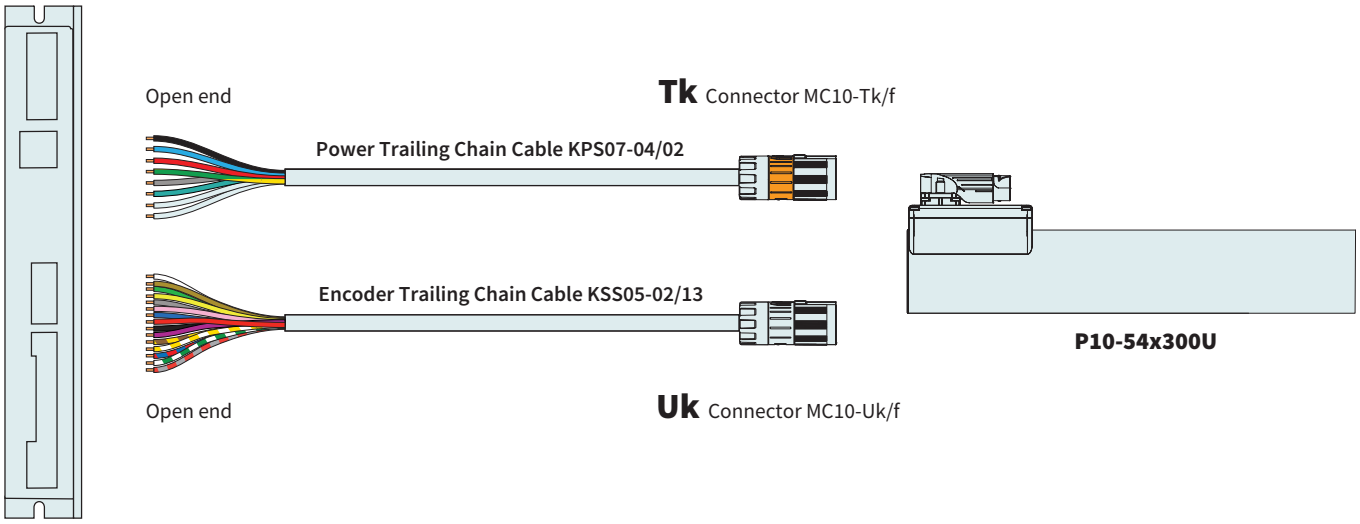
POWER CABLES		
Item	**Description**	**Item-No.**
KPS07-04/02-B/Tk-3	Power Trailing Chain Cable C1400/P10-54, 3 m	0150-3648
KPS07-04/02-B/Tk-5	Power Trailing Chain Cable C1400/P10-54, 5 m	0150-3657
KPS07-04/02-B/Tk-8	Power Trailing Chain Cable C1400/P10-54, 8 m	0150-3658
KPS07-04/02-B/Tk-12	Power Trailing Chain Cable C1400/P10-54, 12 m	0150-3659
KPS07-04/02-B/Tk-	Power Trailing Chain Cable B/Tk-, Custom length	0150-4770
KPS07-04/02-L/Tk-3	Power Trailing Chain Cable E1400/P10-54, 3 m	0150-2670
KPS07-04/02-L/Tk-5	Power Trailing Chain Cable E1400/P10-54, 5 m	0150-2671
KPS07-04/02-L/Tk-8	Power Trailing Chain Cable E1400/P10-54, 8 m	0150-2672
KPS07-04/02-L/Tk-12	Power Trailing Chain Cable E1400/P10-54, 12 m	0150-2673
KPS07-04/02-L/Tk-	Power Trailing Chain Cable L/Tk-, Custom length	0150-3706

ENCODER CABLES		
Item	**Description**	**Item-No.**
KSS05-02/08-D15s/Uk-3	Encoder Trailing Chain Cable D15s/Uk, 3 m	0150-2650
KSS05-02/08-D15s/Uk-5	Encoder Trailing Chain Cable D15s/Uk, 5 m	0150-2651
KSS05-02/08-D15s/Uk-8	Encoder Trailing Chain Cable D15s/Uk, 8 m	0150-2652
KSS05-02/08-D15s/Uk-12	Encoder Trailing Chain Cable D15s/Uk, 12 m	0150-2653
KSS05-02/08-D15s(f)-45°/Uk-	Encoder Trailing Chain Cable D15s(f)-45°/Uk-, Custom length	0150-2731

EXTENSION CABLES		
Item	**Description**	**Item-No.**
KPS07-04/02-Tk/Tk-	Power Trailing Chain Cable Tk/Tk-, Custom length	0150-2829
KSS05-02/08-Uk/Uk	Encoder Trailing Chain Cable Uk/Uk-, Custom length	0150-2830

CONNECTORS		
Item	**Description**	**Item-No.**
MC10-L/m	Connector Power E1400/X2	0150-3382
MC01-D15/f	Motor Connector D15 (f)	0150-3136
MC10-Tk/f	Connector Power PS10-54	0150-3482
MC10-Uk/f	Connector Encoder PS10-54	0150-3483

Motor Cables for 3rd Party Drives



3rd party Drive

ORDERING INFORMATION

POWER CABLES		
Item	**Description**	**Item-No.**
KPS07-04/02-./Tk-10	Power Trailing Chain Cable .../Tk, 10m	0150-3626
KPS07-04/02-./Tk-	Power Trailing Chain Cable .../Tk, Custom length	0150-3622
KPS07-04/02	Power Trailing Chain Cable P10-54 (per m)	0150-2372

ENCODER CABLES		
Item	**Description**	**Item-No.**
KSS05-02/13-./Uk-10	Encoder Trailing Chain Cable ./Uk, 10m	0150-3627
KSS05-02/13-./Uk-	Encoder Trailing Chain Cable ./Uk, Custom length	0150-3619
KSS05-02/13	Encoder Trailing Chain Cable P10-...-Dxx (per m)	0150-2259

EXTENSION CABLES		
Item	**Description**	**Item-No.**
KPS07-04/02-Tk/Tk-	Power Trailing Chain Cable Tk/Tk-, Custom length	0150-2829
KSS05-02/08-Uk/Uk	Encoder Trailing Chain Cable Uk/Uk-, Custom length	0150-2830

CONNECTORS		
Item	**Description**	**Item-No.**
MC10-Tk/f	Connector Power PS10-54	0150-3482
MC10-Uk/f	Connector Encoder PS10-54	0150-3483

MOTOR FLANGES

Item	Description	Item-No.
PF10-54x320	Flange for PS10-54x300	0150-2736

FIND MORE PRODUCT DETAILS IN THE CHAPTER "ACCESSORIES".

FANS

Item	Description	Item-No.
HV01-37/48	Fan cooling for H01-37/48 &PF02-37/48	0150-5051

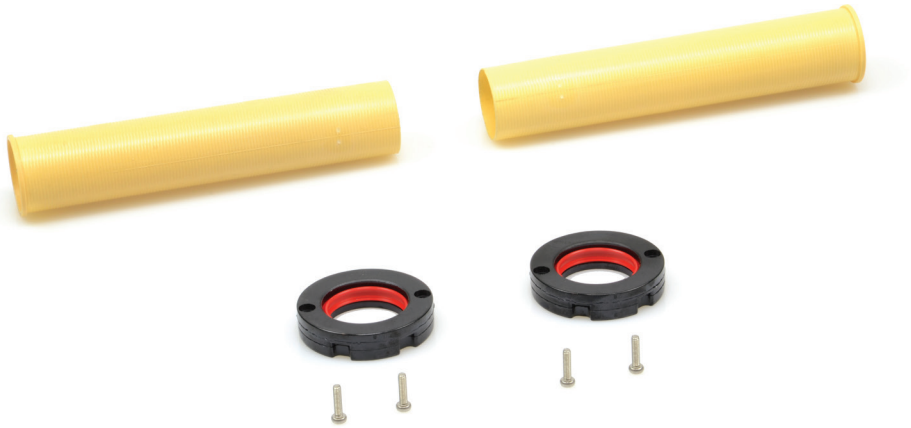
FIND MORE PRODUCT DETAILS IN THE CHAPTER "ACCESSORIES".

SLIDER MOUNTING

Item	Description	Item-No.
PLF01-28	Fixed Bearing Set for 27/28 mm sliders	0150-3087
PLF01-28-SS	Fixed Bearing Set for 27/28 mm sliders, stainless steel	0150-3297
PLL01-28	Floating Bearing for 28 mm sliders	0150-3094
PLM01-28-MK	Mounting Kit for 28 mm sliders	0150-3095

FIND MORE PRODUCT DETAILS IN THE CHAPTER "ACCESSORIES".

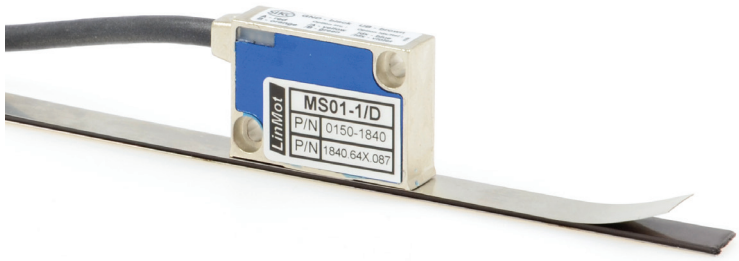
BEARING KIT



Item	Description	Item-No.
PB10-54x300-L	Bearing Kit for PS10-54x300	0150-3674

FIND MORE PRODUCT DETAILS IN THE CHAPTER "ACCESSORIES".

EXTERNAL POSITION SENSORS



Item	Description	Item-No.
MS01-1/D	Linear Encoder 1µm, A/B (for incremental strip)	0150-1840
MB01-1000	Magnetic incremental strip for MS01-1/D, per cm	0150-1963
KS025-D15/D-Encoder	Encoder Cable (Length in m)	0150-3168

FIND MORE PRODUCT DETAILS IN THE CHAPTER "ACCESSORIES".

Item	Description	Item-No.
MS01-1/D-SSI	Linear Encoder 1µm, A/B (for absolute strip)	0150-2095
MB01-1000-ABS	Magnetic absolute strip for MS01-1/D-SSI (per cm)	0150-2096
EC01-ABS/ENC-12-S	MS01-1/D-SSI Encoder connector straight	0150-3616
KSS01-12-D15/ABS-ENC	Special cable for MS01-1/D-SSI on C1100/C1200/C1400/E1200/E1400 Drives	0150-3652

FIND MORE PRODUCT DETAILS IN THE CHAPTER "ACCESSORIES".