BOB Bobolowski GmbH

The new synchronous linear motors

The designer`s dream!
Low power losses, high dynamics!

LMS-P

High thrust combined with

- Little cogging
- Little moving mass
- Very high efficiency resulting in
- Little heat dissipation

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The new BOB-Motors make it possible

Stage with LMS-P motor

LMS-P -35 and -58

permanent excited synchronous linear motors
with multi-phase windings for $U_{ZW\ amx}$ 700 V
for standard servo amplifiers

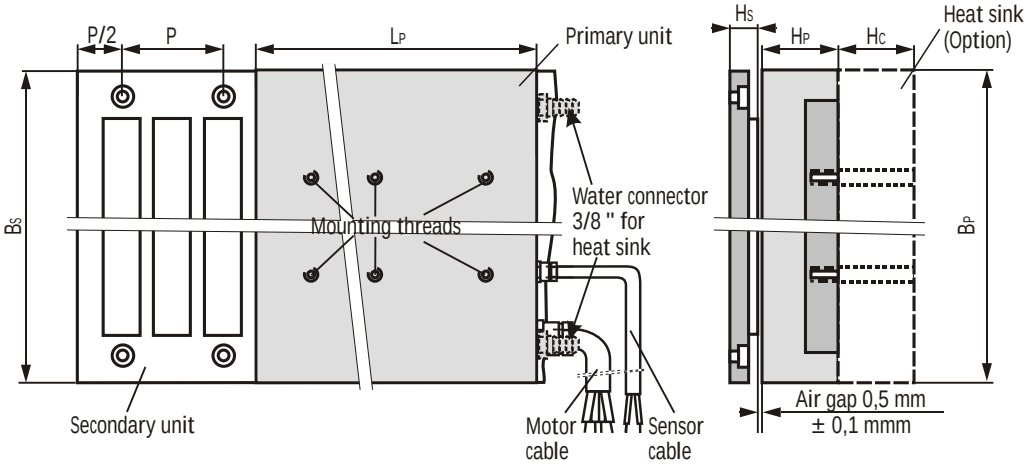
The new, compact motion drive from BOB

Order-No.	Force		Primary unit				Secondary unit			Heat sink	
	$F_{C\ 130°C}$ (N)	F_{max} (N)	L_P (mm)	B_P (mm)	H_P (mm)	m_P (kg)	B_S (mm)	H_S (mm)	m_S (kg/m)	H_C (mm)	m_C (kg)
LMS-P 35-017 / 160 -X-aaa-S	53	210	184	44	25,0	1,0	45	10,4	2,4	20	0,3
LMS-P 35-035 / 160 -X-aaa-S	130	430	184	64	25,0	1,5	70	11,4	4,5	20	0,4
LMS-P 35-035 / 320 -X-aaa-S	240	870	344	64	25,0	2,7	70	11,4	4,5	20	0,8
LMS-P 35-052 / 160 -X-aaa-S	200	640	184	84	25,0	2,0	90	11,4	6,0	20	0,6
LMS-P 35-052 / 320 -X-aaa-S	380	1290	344	84	25,0	3,6	90	11,4	6,0	20	1,1
LMS-P 35-070 / 160 -X-aaa-S	280	870	184	104	25,0	2,5	100	11,4	7,1	20	0,7
LMS-P 35-070 / 320 -X-aaa-S	540	1740	344	104	25,0	4,6	100	11,4	7,1	20	1,3
LMS-P 35-070 / 480 -X-aaa-S	810	2600	504	104	25,0	6,7	100	11,4	7,1	20	2,0
LMS-P 35-105 / 160 -X-aaa-S	440	1300	184	139	25,0	3,5	140	11,4	10,1	20	0,9
LMS-P 35-105 / 320 -X-aaa-S	840	2600	344	139	25,0	6,5	140	11,4	10,1	20	1,8
LMS-P 35-105 / 480 -X-aaa-S	1250	3910	504	139	25,0	9,5	140	11,4	10,1	20	2,6
LMS-P 35-140 / 160 -X-aaa-S	590	1740	184	174	25,0	4,4	180	13,4	15,9	20	1,2
LMS-P 35-140 / 320 -X-aaa-S	1150	3470	344	174	25,0	8,3	180	13,4	15,9	20	2,2
LMS-P 35-140 / 480 -X-aaa-S	1700	5210	504	174	25,0	12,2	180	13,4	15,9	20	3,3
LMS-P 58-035 / 185 -X-aaa-S	290	500	214	68	45,8	2,9	70	11,4	4,7	20	0,5
LMS-P 58-035 / 370 -X-aaa-S	550	1000	399	68	45,8	5,5	70	11,4	4,7	20	0,9
LMS-P 58-070 / 185 -X-aaa-S	640	1000	214	106	45,8	4,9	100	11,4	7,5	20	0,8
LMS-P 58-070 / 370 -X-aaa-S	1230	2000	399	106	45,8	9,4	100	11,4	7,5	20	1,6
LMS-P 58-070 / 555 -X-aaa-S	1830	3000	584	106	45,8	13,9	100	11,4	7,5	20	2,3
LMS-P 58-105 / 185 -X-aaa-S	990	1500	214	141	45,8	6,9	140	11,4	10,8	20	1,1
LMS-P 58-105 / 370 -X-aaa-S	1920	3000	399	141	45,8	13,3	140	11,4	10,8	20	2,1
LMS-P 58-105 / 555 -X-aaa-S	2840	4500	584	141	45,8	19,7	140	11,4	10,8	20	3,0
LMS-P 58-140 / 185 -X-aaa-S	1300	2000	214	176	45,8	8,9	180	13,4	16,8	20	1,4
LMS-P 58-140 / 370 -X-aaa-S	2600	4000	399	176	45,8	17,2	180	13,4	16,8	20	2,6
LMS-P 58-140 / 555 -X-aaa-S	3900	6010	584	176	45,8	25,5	180	13,4	16,8	20	3,8
LMS-P 58-210 / 185 -X-aaa-S	2100	3000	226	246	49,8	15,1	250	15,4	27,9	20	2,0
LMS-P 58-210 / 370 -X-aaa-S	4100	6010	411	246	49,8	28,9	250	15,4	27,9	20	3,8
LMS-P 58-210 / 555 -X-aaa-S	6000	9010	596	246	49,8	42,5	250	15,4	27,9	20	5,5

$F_{C\ 130°C}$ = Continuous force (Cu : 130°C) *
F_{max} = Maximum force
* with motor fitted to an aluminium heat sink with a surface of
3 x primary unit surface (L_P x B_P), 12 mm thick, at ambient temperature of 20°C

m_P = Mass of primary unit
m_S = Mass of secondary unit
m_C = Mass of heat sink

LMS-P 35 Secondary unit	LMS-P 58 Secondary unit
P= 32 mm	P= 37 mm
available length : - 64 mm - 96 mm - 160 mm - 288 mm - 544 mm - 992 mm	available length : - 74 mm - 111 mm - 185 mm - 333 mm - 629 mm - 999 mm



For our wide range of linear and servo motors please ask for additional, detailed information
Own design, patents and production

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BOB Synchronous linear motor

Typ LMS-P description and order-key-code

The primary unit of LMS-P35 and LMS-P58 is equipped with multi-phase iron-core winding. Due to a special geometry of the magnetic circuit these motors have a high specific power, low "cogging", little mass and small dimensions.

The secondary unit is equipped with permanent magnets. Secondary units are available in 6 different lengths (as shown in data-sheet). With these lengths every requested length of stroke is realizable in steps of 32 mm (LMS-P35) respectively 37 mm (LMS-P58). A covering of stainless steele guarantees the mechanical protection of the magnets and makes cleaning easy.
Several primary units can be driven independently of one to each other on a single secondary unit.

The heat-sink (water cooling) prevents heat transfer into the application (optional).

The shown data are valid for fitting of the primary unit to a cooling area of adequate size (minimal three times size of the installation surface, aluminium, 12 mm thick), a winding temperature of 130°C at an ambient temperature of 20°C and natural ventilation.

Primary unit

LMS-P	XX	-	YYY	/	ZZZ	-	P	-	pstw	-	x	-	m

Type
Code for motor height
Code for motor width
Code for primary length
P = Code for primary unit
Code for number of phases
3 = 3-phase
Code for connection
S = Star-connection
D = Delta-connection
Code for temperature sensor
N = NTC 130°C
P = PTC 130°C
K = KTY 84
Code for winding
Code for magnet
1 = Standard
Modification (Standard or Customer with Id.-Nr.)

Secondary unit

LMS-P	XX	-	YYY	/	___	S	-	aaa	-	x	-	m

Type
Code for motor height
Code for motor width
S = Code for secondary unit
Length (mm)
Code for magnet (1 = Standard)
Modification (Standard or Customer with Id.-Nr.)

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BOB synchronous - linear - motor

Typ LMS-P 35-017 / ...

Primary unit	Symbol	Unit	... / 160 P - 3stC - 1 - S	
Circuit mode			s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N	53	53
Maximum force	F_{max}	N	210	210
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W	39	39
Thermal resistance	R_{th}	K/W	2,806	2,806
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$	10,1	10,1
Force constant	K_t	N/A	27,2	47,1
Back EMF constant	K_e	Vs/m	15,7	27,2
Time constant electrical	t_e	ms	4,2	4,2
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A	1,9	1,1
Peak current	I_{max}	A	11,0	6,4
Demagnetising current	I_P	A	>40	>23
DC-resistance Ph/Ph (20°C)	R	W	4,8	14,4
Inductance Ph/Ph	L	mH	20,3	60,8
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V	700	700
Max. speed	v_{max}	m/s	15,8	18,2
Force from magnetic attraction	F_{mag}	kN	0,35	0,35
Displacement force (deenrgised)	F_v	N	1,1	1,1
Length primary unit	A	mm	184	184
Mass primary unit	m_p	kg	1,0	1,0
Motor-cable (wire-cross-section)	□	mm^2	0,75	0,75
Motor-cable (diameter)	Ø	mm	10,5	10,5
Motor-cable (PG-locknut diameter)	B	mm	22	22
Secondary unit			... / S -aaa- S	
Pole pitch (N-S)	pp	mm	16	
Mass per meter Secondary unit	m_s	kg/m	2,4	

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

Connection

Cable

0,6 m long
(shielded)

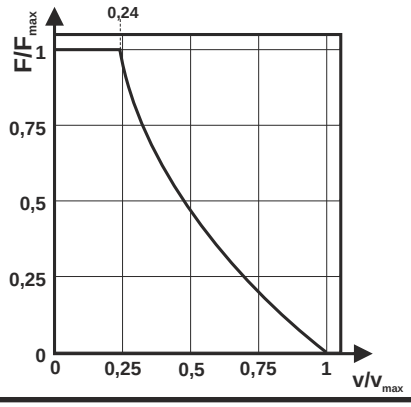
4 G 0,75
+
2 x (2 x 0,34)
StD-CY

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	WH	GN
MT -	BN	YE
Shield	WH or "SHIELD"	

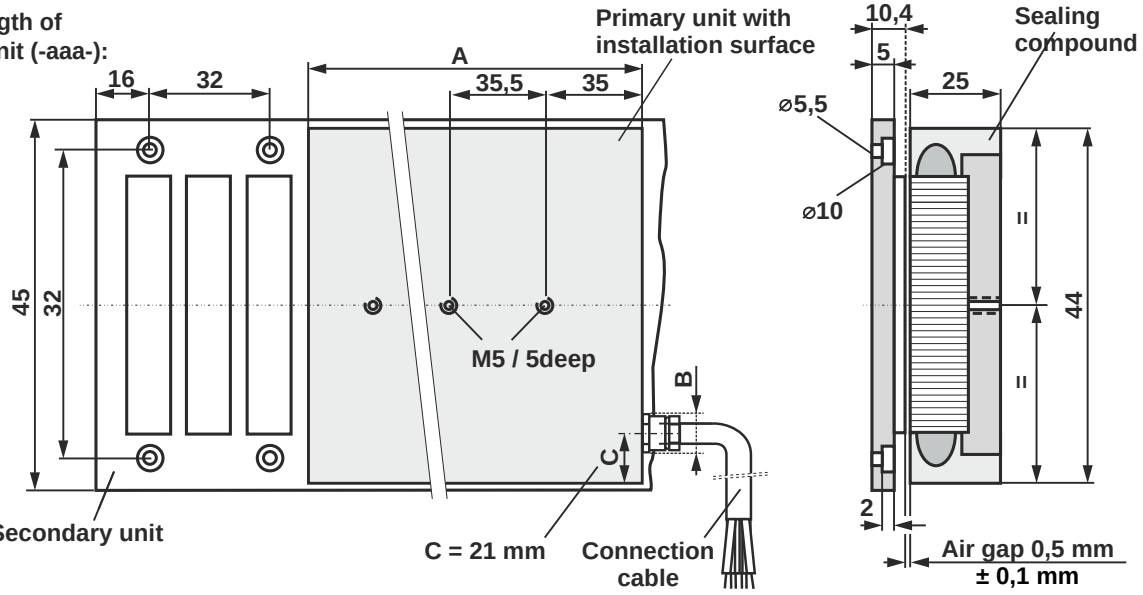
$F_{max} = f(v)$

$\hat{U}_{min\ DC}$: 300 V / 520 V
Winding-temp.: 130°C



Dimensions

available length of secondary unit (-aaa-):
- 064 mm
- 096 mm
- 160 mm
- 288 mm
- 544 mm
- 992 mm



Performance data are tolrated +/-10%. Measurements in mm.

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BOB synchronous - linear - motor

Typ LMS-P 35-035 / ...

Primary unit	Symbol	Unit	... / 160 P - 3stH - 1 - S		... / 320 P - 3stH -1 - S	
Circuit mode			s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N	130	130	240	240
Maximum force	F_{max}	N	430	430	870	870
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W	87	87	148	148
Thermal resistance	R_{th}	K/W	1,363	1,363	0,729	0,729
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$	16,7	16,7	23,6	23,6
Force constant	K_t	N/A	32,0	55,5	64,1	111,0
Back EMF constant	K_e	Vs/m	18,5	32,0	37,0	64,1
Time constant electrical	t_e	ms	5,5	5,5	5,5	5,5
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A	4,1	2,3	3,7	2,2
Peak current	I_{max}	A	19,2	11,1	19,4	11,2
Demagnetising current	I_P	A	>70	>40	>70	>40
DC-resistance Ph/Ph (20°C)	R	W	2,5	7,4	4,9	14,8
Inductance Ph/Ph	L	mH	13,6	40,9	27,3	81,9
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V	700	700	700	700
Max. speed	v_{max}	m/s	13,4	15,5	6,7	7,7
Force from magnetic attraction	F_{mag}	kN	0,72	0,72	1,43	1,43
Displacement force (deenrgised)	F_v	N	2,2	2,2	4,5	4,5
Length primary unit	A	mm	184	184	344	344
Mass primary unit	m_p	kg	1,5	1,5	2,7	2,7
Motor-cable (wire-cross-section)	□	mm^2	1,5	1,5	1,5	1,5
Motor-cable (diameter)	Ø	mm	12,1	12,1	12,1	12,1
Motor-cable (PG-locknut diameter)	B	mm	22	22	22	22
Secondary unit			... / S -aaa- S			
Pole pitch (N-S)	pp	mm	16			
Mass per meter Secondary unit	m_s	kg/m	4,5			

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

Connection

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

Motor
(shielded)
0,6 m long

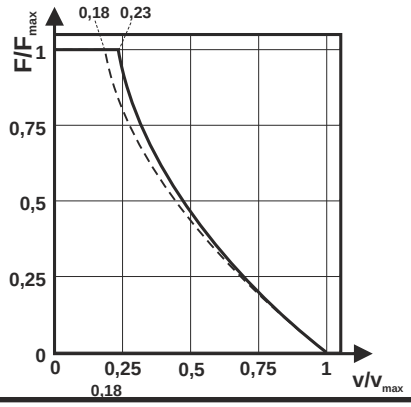
Sensor
(shielded)
0,6 m long
ˇ : 8,6 mm

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	BN	
MT -	BU	
Shield	WH or "SHIELD"	

$F_{max} = f(v)$

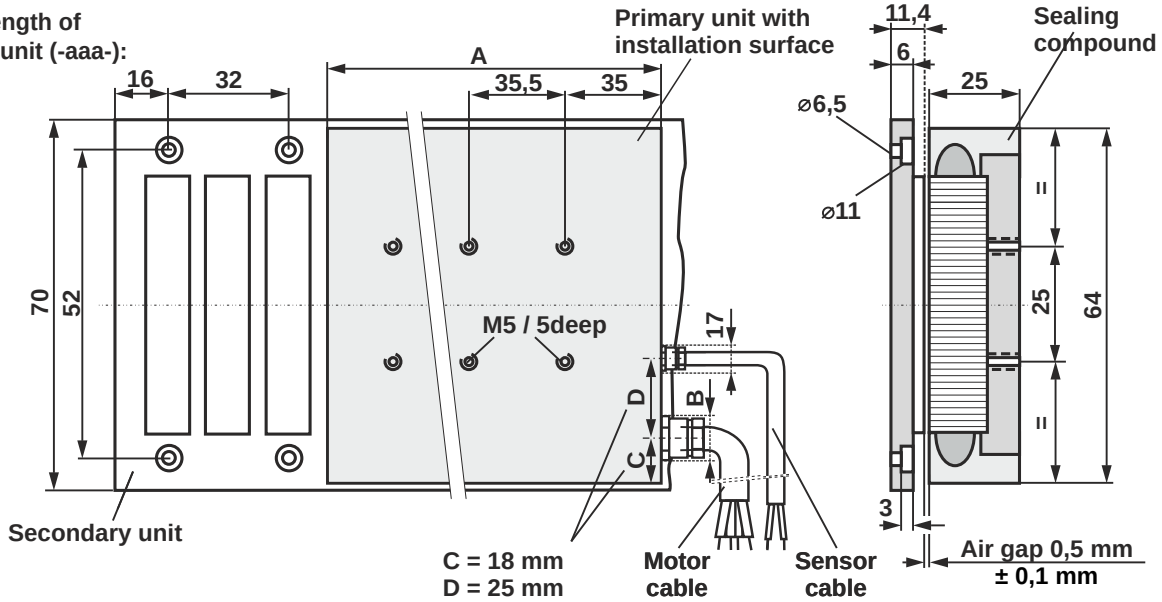
$\hat{U}_{min\ DC}$: 300 V / 520 V
Winding-temp.: 130°C

LMS-P 35-35/160 ——
LMS-P 35-35/320 - - - - - - - -



Dimensions

available length of secondary unit (-aaa-):
- 064 mm
- 096 mm
- 160 mm
- 288 mm
- 544 mm
- 992 mm



Performance data are tolrated +/-10%. Measurements in mm.
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BOB synchronous - linear - motor

Typ LMS-P 35-052 / ...

Primary unit	Symbol	Unit	... / 160 P - 3stM - 1 - S		... / 320 P - 3stM - 1 - S	
Circuit mode			s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N	200	200	380	380
Maximum force	F_{max}	N	640	640	1290	1290
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W	126	126	227	227
Thermal resistance	R_{th}	K/W	0,918	0,918	0,491	0,491
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$	21,3	21,3	30,2	30,2
Force constant	K_t	N/A	29,4	50,9	58,8	101,8
Back EMF constant	K_e	Vs/m	17,0	29,4	33,9	58,8
Time constant electrical	t_e	ms	6,1	6,1	6,1	6,1
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A	6,8	3,9	6,5	3,7
Peak current	I_{max}	A	31,1	18,0	31,4	18,1
Demagnetising current	I_P	A	>110	>65	>110	>65
DC-resistance Ph/Ph (20°C)	R	W	1,3	3,8	2,5	7,6
Inductance Ph/Ph	L	mH	7,7	23,2	15,4	46,3
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V	700	700	700	700
Max. speed	v_{max}	m/s	14,6	16,8	7,3	8,4
Force from magnetic attraction	F_{mag}	kN	1,06	1,06	2,13	2,13
Displacement force (deenrgised)	F_v	N	3,3	3,3	6,7	6,7
Length primary unit	A	mm	184	184	344	344
Mass primary unit	m_p	kg	2,0	2,0	3,6	3,6
Motor-cable (wire-cross-section)	□	mm^2	1,5	1,5	1,5	1,5
Motor-cable (diameter)	Ø	mm	12,1	12,1	12,1	12,1
Motor-cable (PG-locknut diameter)	B	mm	22	22	22	22
Secondary unit			... / S -aaa- S			
Pole pitch (N-S)	pp	mm	16			
Mass per meter Secondary unit	m_s	kg/m	6,0			

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

Connection

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

Motor
(shielded)
0,6 m long

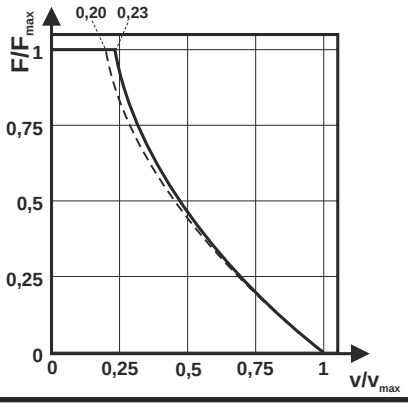
Sensor
(shielded)
0,6 m long
ˇ : 8,6 mm

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	BN	
MT -	BU	
Shield	WH or "SHIELD"	

$F_{max} = f(v)$

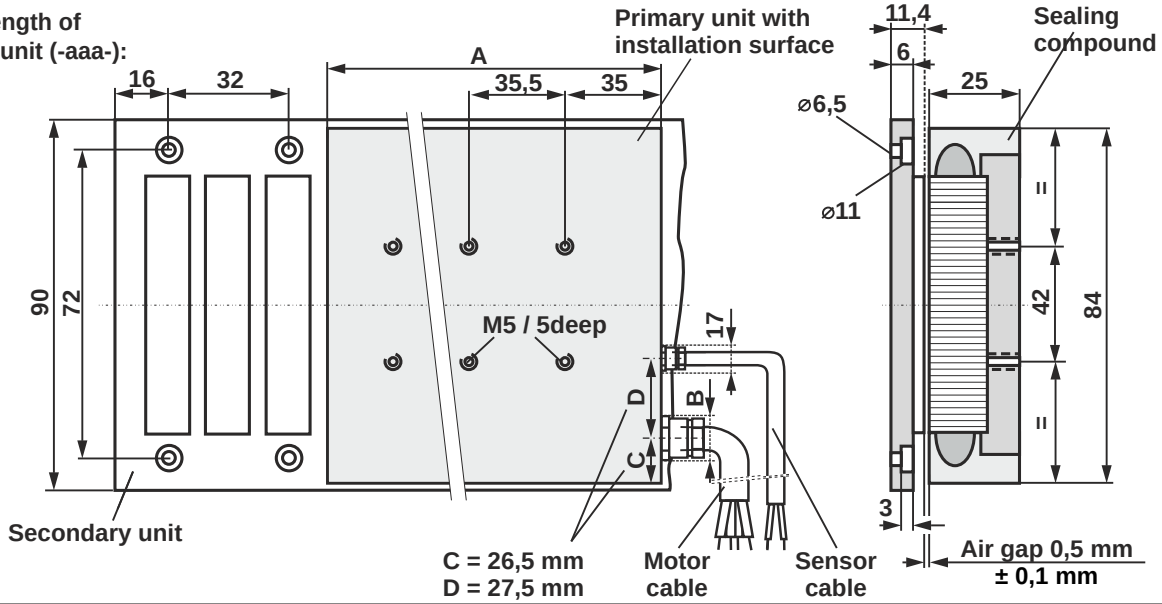
$\hat{U}_{min\ DC}$: 300 V / 520 V
Winding-temp.: 130°C

LMS-P 35-52/160 ——
LMS-P 35-52/320 - - - - - - - -



Dimensions

available length of secondary unit (-aaa-):
- 064 mm
- 096 mm
- 160 mm
- 288 mm
- 544 mm
- 992 mm



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BOB synchronous - linear - motor

Typ LMS-P 35-070 / ...

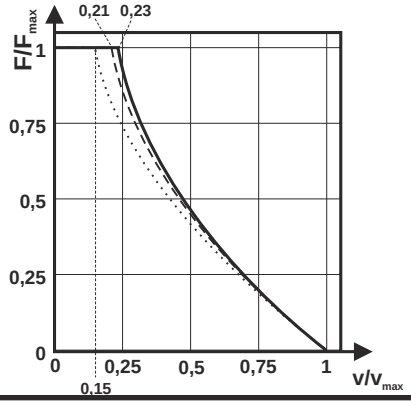
Primary unit	Symbol	Unit	... / 160 P - 3stO - 1 - S		... / 320 P - 3stO - 1 - S		... / 480 P - 3stO - 1 - S	
Circuit mode			s = D	s = S	s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N	280	280	540	540	810	810
Maximum force	F_{max}	N	870	870	1740	1740	2600	2600
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W	160	160	299	299	448	448
Thermal resistance	R_{th}	K/W	0,682	0,682	0,365	0,365	0,249	0,249
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$	26,5	26,5	37,4	37,4	45,8	45,8
Force constant	K_t	N/A	29,7	51,4	59,4	102,8	89,0	154,1
Back EMF constant	K_e	Vs/m	17,1	29,7	34,2	59,3	51,4	89,0
Time constant electrical	t_e	ms	7,0	7,0	7,0	7,0	7,0	7,0
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A	9,4	5,4	9,1	5,3	9,1	5,3
Peak current	I_{max}	A	41,9	24,2	41,9	24,2	41,7	24,1
Demagnetising current	I_P	A	>150	>85	>150	>85	>150	>85
DC-resistance Ph/Ph (20°C)	R	W	0,8	2,5	1,7	5,0	2,5	7,5
Inductance Ph/Ph	L	mH	5,8	17,5	11,7	35,1	17,5	52,6
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V	700	700	700	700	700	700
Max. speed	v_{max}	m/s	14,4	16,7	7,2	8,3	4,8	5,6
Force from magnetic attraction	F_{mag}	kN	1,43	1,43	2,86	2,86	4,30	4,30
Displacement force (deenrgised)	F_v	N	4,5	4,5	9,0	9,0	13,4	13,4
Length primary unit	A	mm	184	184	344	344	504	504
Mass primary unit	m_p	kg	2,5	2,5	4,6	4,6	6,7	6,7
Motor-cable (wire-cross-section)	□	mm^2	1,5	1,5	1,5	1,5	1,5	1,5
Motor-cable (diameter)	Ø	mm	12,1	12,1	12,1	12,1	12,1	12,1
Motor-cable (PG-locknut diameter)	B	mm	22	22	22	22	22	22
Secondary unit			... / S -aaa- S					
Pole pitch (N-S)	pp	mm	16					
Mass per meter Secondary unit	m_s	kg/m	7,1					

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

$F_{max} = f(v)$

$\hat{U}_{min\ DC}$: 300 V / 520 V
Winding-temp.: 130°C

LMS-P 35-70/160
LMS-P 35-70/320
LMS-P 35-70/480



Connection

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

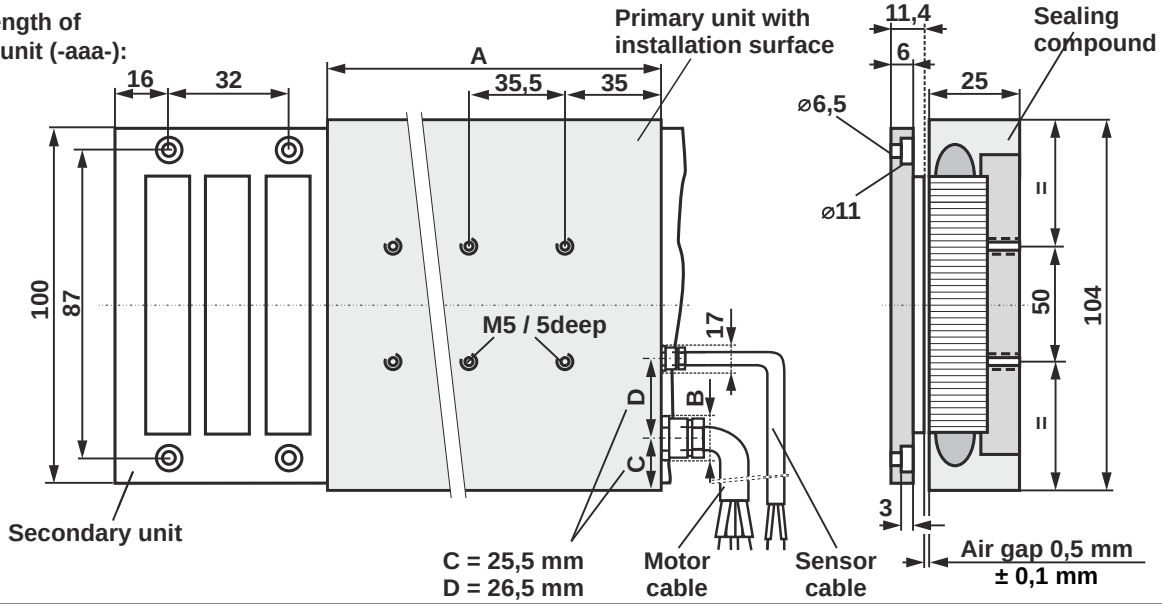
Motor
(shielded)
0,6 m long

Sensor
(shielded)
0,6 m long
ˇ : 8,6 mm

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	BN	
MT -	BU	
Shield	WH or "SHIELD"	

Dimensions

available length of secondary unit (-aaa-):
- 064 mm
- 096 mm
- 160 mm
- 288 mm
- 544 mm
- 992 mm



Performance data are tolrated +/-10%. Measurements in mm.
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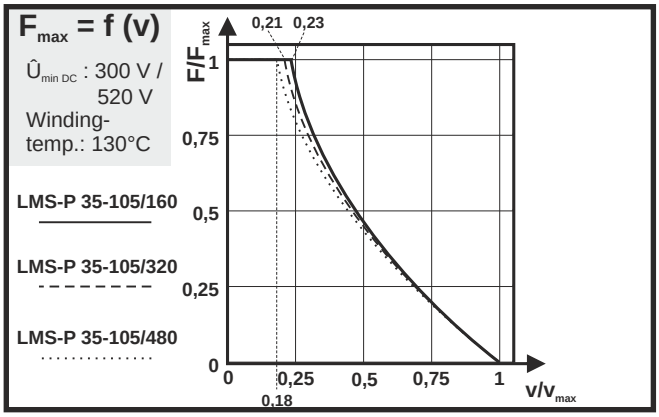
BOB synchronous - linear - motor

Typ LMS-P 35-105 / ...

Primary unit	Symbol	Unit	... / 160 P - 3stS - 1 - S		... / 320 P - 3stS - 1 - S		... / 480 P - 3stS - 1 - S	
Circuit mode			s = D	s = S	s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N		440		840		1250
Maximum force	F_{max}	N		1300		2600		3910
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W		247		450		663
Thermal resistance	R_{th}	K/W		0,454		0,243		0,166
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$		33,5		47,4		58,1
Force constant	K_t	N/A		44,7		89,4		134,2
Back EMF constant	K_e	Vs/m		25,8		51,6		77,5
Time constant electrical	t_e	ms		7,5		7,5		7,5
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A		9,8		9,4		9,3
Peak current	I_{max}	A		41,5		41,5		41,6
Demagnetising current	I_P	A		>150		>150		>150
DC-resistance Ph/Ph (20°C)	R	W		1,2		2,4		3,6
Inductance Ph/Ph	L	mH		8,9		17,7		26,6
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V		700		700		700
Max. speed	v_{max}	m/s		19,2		9,6		6,4
Force from magnetic attraction	F_{mag}	kN		2,15		4,30		6,44
Displacement force (deenrgised)	F_v	N		6,7		13,4		20,2
Length primary unit	A	mm		184		344		504
Mass primary unit	m_p	kg		3,5		6,5		9,5
Motor-cable (wire-cross-section)	□	mm^2		1,5		1,5		1,5
Motor-cable (diameter)	Ø	mm		12,1		12,1		12,1
Motor-cable (PG-locknut diameter)	B	mm		22		22		22
Secondary unit			... / S -aaa- S					
Pole pitch (N-S)	pp	mm	16					
Mass per meter Secondary unit	m_s	kg/m	10,1					

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.



Connection

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

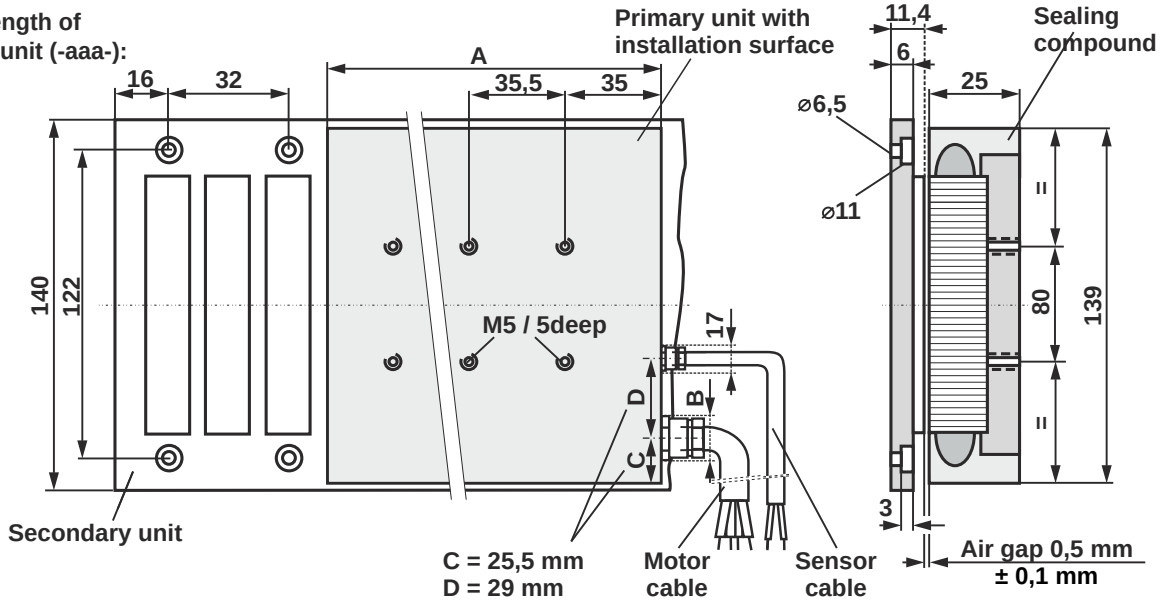
Motor
(shielded)
0,6 m long

Sensor
(shielded)
0,6 m long
ˇ : 8,6 mm

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	BN	
MT -	BU	
Shield	WH or "SHIELD"	

Dimensions

available length of secondary unit (-aaa-):
- 064 mm
- 096 mm
- 160 mm
- 288 mm
- 544 mm
- 992 mm



Performance data are tolrated +/-10%. Measurements in mm.

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BOB synchronous - linear - motor

Typ LMS-P 35-140 / ...

Primary unit	Symbol	Unit	... / 160 P - 3stT - 1 - S		... / 320 P - 3stT - 1 - S		... / 480 P - 3stT - 1 - S	
Circuit mode			s = D	s = S	s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N		590		1150		1700
Maximum force	F_{max}	N		1740		3470		5210
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W		320		608		887
Thermal resistance	R_{th}	K/W		0,341		0,182		0,124
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$		39,5		55,8		68,3
Force constant	K_t	N/A		43,1		86,3		129,4
Back EMF constant	K_e	Vs/m		24,9		49,8		74,7
Time constant electrical	t_e	ms		7,8		7,8		7,7
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A		13,7		13,3		13,1
Peak current	I_{max}	A		57,7		57,4		57,5
Demagnetising current	I_P	A		>200		>200		>200
DC-resistance Ph/Ph (20°C)	R	W		0,8		1,6		2,4
Inductance Ph/Ph	L	mH		6,2		12,4		18,5
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V		700		700		700
Max. speed	v_{max}	m/s		19,9		9,9		6,6
Force from magnetic attraction	F_{mag}	kN		2,86		5,73		8,59
Displacement force (deenrgised)	F_v	N		9,0		17,9		26,9
Length primary unit	A	mm		184		344		504
Mass primary unit	m_p	kg		4,4		8,3		12,2
Motor-cable (wire-cross-section)	□	mm^2		1,5		1,5		1,5
Motor-cable (diameter)	Ø	mm		12,1		12,1		12,1
Motor-cable (PG-locknut diameter)	B	mm		22		22		22
Secondary unit			... / S -aaa- S					
Pole pitch (N-S)	pp	mm	16					
Mass per meter Secondary unit	m_s	kg/m	15,9					

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

Connection

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

Motor
(shielded)
0,6 m long

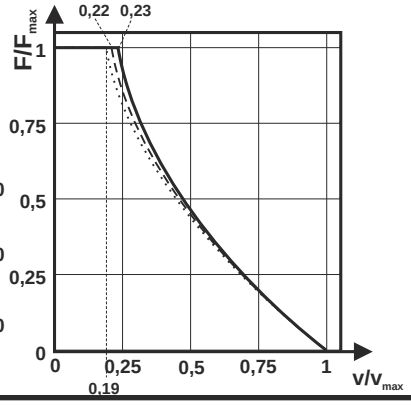
Sensor
(shielded)
0,6 m long
ˇ : 8,6 mm

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	BN	
MT -	BU	
Shield	WH or "SHIELD"	

$F_{max} = f(v)$

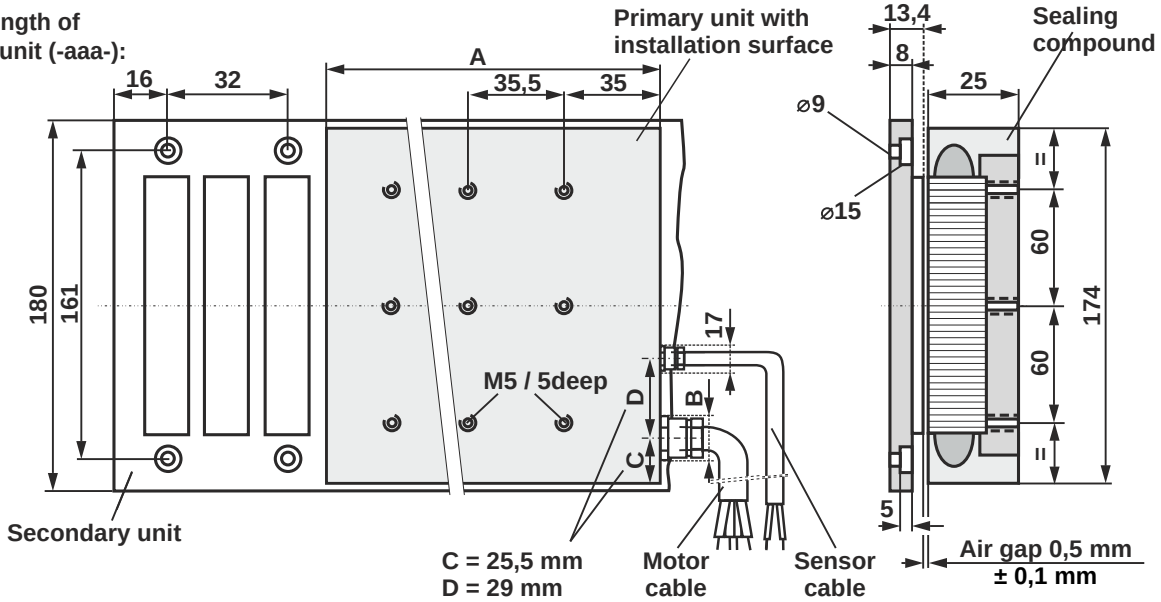
$\hat{U}_{min\ DC}$: 300 V / 520 V
Winding-temp.: 130°C

LMS-P 35-140/160
LMS-P 35-140/320
LMS-P 35-140/480



Dimensions

available length of secondary unit (-aaa-):
- 064 mm
- 096 mm
- 160 mm
- 288 mm
- 544 mm
- 992 mm



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BOB synchronous - linear - motor

Typ LMS-P 58-035 / ...

Primary unit	Symbol	Unit	... / 185 P - 3st1 - 1 - S		... / 370 P - 3st1 - 1 - S	
Circuit mode			s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N	290	290	550	550
Maximum force	F_{max}	N	500	500	1000	1000
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W	116	116	208	208
Thermal resistance	R_{th}	K/W	0,975	0,975	0,523	0,523
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$	32,2	32,2	45,6	45,6
Force constant	K_t	N/A	27,1	46,9	54,1	93,7
Back EMF constant	K_e	Vs/m	15,6	27,1	31,2	54,1
Time constant electrical	t_e	ms	20,9	20,9	20,9	20,9
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A	10,7	6,2	10,2	5,9
Peak current	I_{max}	A	26,4	15,2	26,4	15,2
Demagnetising current	I_P	A	>90	>55	>90	>55
DC-resistance Ph/Ph (20°C)	R	W	0,5	1,4	0,9	2,8
Inductance Ph/Ph	L	mH	9,8	29,5	19,6	58,9
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V	700	700	700	700
Max. speed	v_{max}	m/s	15,8	18,3	7,9	9,1
Force from magnetic attraction	F_{mag}	kN	0,88	0,88	1,76	1,76
Displacement force (deenrgised)	F_v	N	2,6	2,6	5,2	5,2
Length primary unit	A	mm	214	214	399	399
Mass primary unit	m_p	kg	2,9	2,9	5,5	5,5
Motor-cable (wire-cross-section)	□	mm^2	1,5	1,5	1,5	1,5
Motor-cable (diameter)	Ø	mm	12,1	12,1	12,1	12,1
Motor-cable (PG-locknut diameter)	B	mm	22	22	22	22
Secondary unit			... / S -aaa- S			
Pole pitch (N-S)	pp	mm	18,5			
Mass per meter Secondary unit	m_s	kg/m	4,7			

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

Connection

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

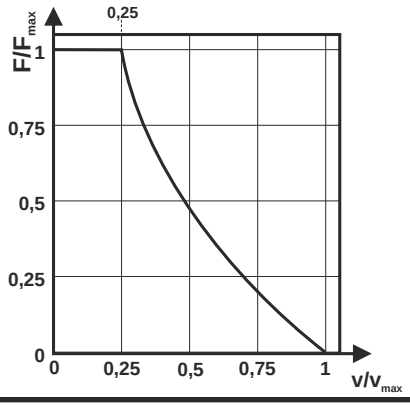
Motor
(shielded)
0,6 m long

Sensor
(shielded)
0,6 m long
ˇ : 8,6 mm

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	BN	
MT -	BU	
Shield	WH or "SHIELD"	

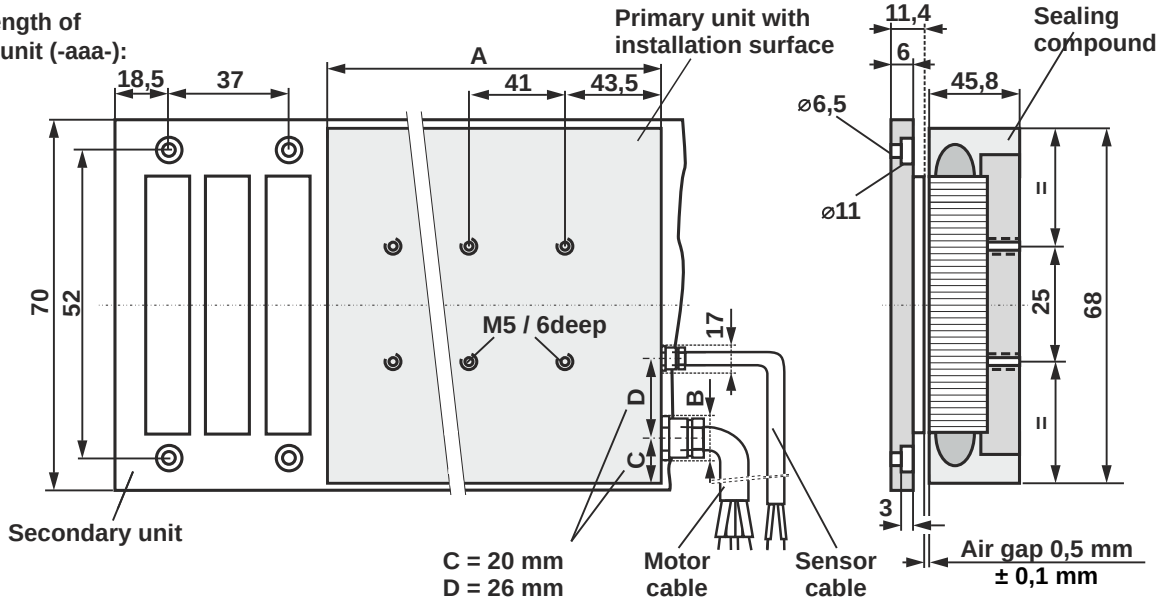
$F_{max} = f(v)$

$\hat{U}_{min\ DC}$: 300 V / 520 V
Winding-temp.: 130°C



Dimensions

available length of secondary unit (-aaa-):
- 074 mm
- 111 mm
- 185 mm
- 333 mm
- 629 mm
- 999 mm



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BOB synchronous - linear - motor

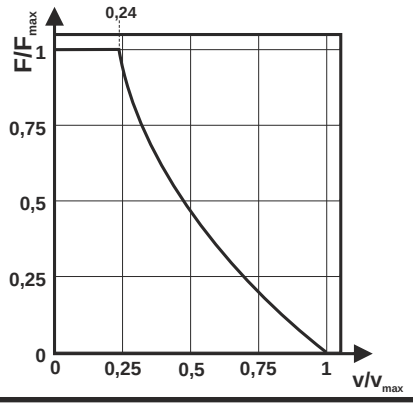
Typ LMS-P 58-070 / ...

Primary unit	Symbol	Unit	... / 185 P - 3st3 - 1 - S		... / 370 P - 3st3 - 1 - S		... / 555 P - 3st3 - 1 - S	
Circuit mode			s = D	s = S	s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N	640	640	1230	1230	1830	1830
Maximum force	F_{max}	N	1000	1000	2000	2000	3000	3000
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W	227	227	419	419	618	618
Thermal resistance	R_{th}	K/W	0,488	0,488	0,261	0,261	0,179	0,179
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$	50,8	50,8	71,9	71,9	88,1	88,1
Force constant	K_t	N/A	24,3	42,1	48,6	84,1	72,9	126,2
Back EMF constant	K_e	Vs/m	14,0	24,3	28,1	48,6	42,1	72,9
Time constant electrical	t_e	ms	25,9	25,9	26,0	26,0	26,0	26,0
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A	26,3	15,2	25,3	14,6	25,1	14,5
Peak current	I_{max}	A	58,8	33,9	58,8	34,0	58,8	34,0
Demagnetising current	I_P	A	>210	>120	>210	>120	>210	>120
DC-resistance Ph/Ph (20°C)	R	W	0,2	0,5	0,3	0,9	0,5	1,4
Inductance Ph/Ph	L	mH	4,0	11,9	7,9	23,7	11,9	35,6
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V	700	700	700	700	700	700
Max. speed	v_{max}	m/s	17,6	20,4	8,8	10,2	5,9	6,8
Force from magnetic attraction	F_{mag}	kN	1,76	1,76	3,52	3,52	5,28	5,28
Displacement force (deenrgised)	F_v	N	5,2	5,2	10,4	10,4	15,5	15,5
Length primary unit	A	mm	214	214	399	399	584	584
Mass primary unit	m_p	kg	4,9	4,9	9,4	9,4	13,9	13,9
Motor-cable (wire-cross-section)	□	mm^2	4,0	2,5	4,0	2,5	4,0	2,5
Motor-cable (diameter)	Ø	mm	17,4	14,6	17,4	14,6	17,4	14,6
Motor-cable (PG-locknut diameter)	B	mm	34	27	34	27	34	27
Secondary unit			... / S -aaa- S					
Pole pitch (N-S)	pp	mm	18,5					
Mass per meter Secondary unit	m_s	kg/m	7,5					

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

$F_{max} = f(v)$

$\hat{U}_{min\ DC}$: 300 V / 520 V
Winding-temp.: 130°C



Connection

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

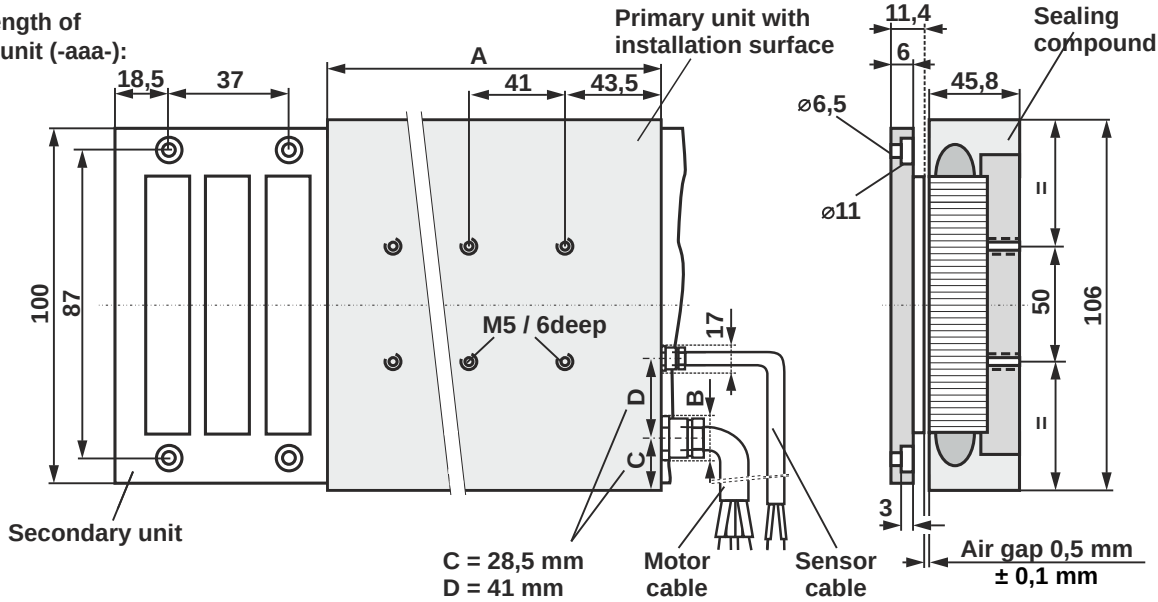
Motor
(shielded)
0,6 m long

Sensor
(shielded)
0,6 m long
ˇ : 8,6 mm

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	BN	
MT -	BU	
Shield	WH or "SHIELD"	

Dimensions

available length of secondary unit (-aaa-):
- 074 mm
- 111 mm
- 185 mm
- 333 mm
- 629 mm
- 999 mm



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BOB synchronous - linear - motor

Typ LMS-P 58-105 / ...

Primary unit	Symbol	Unit	... / 185 P - 3st3 - 1 - S		... / 370 P - 3st3 - 1 - S		... / 555 P - 3st3 - 1 - S	
Circuit mode			s = D	s = S	s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N	990	990	1920	1920	2840	2840
Maximum force	F_{max}	N	1500	1500	3000	3000	4500	4500
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W	337	337	635	635	926	926
Thermal resistance	R_{th}	K/W	0,325	0,325	0,174	0,174	0,119	0,119
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$	64,5	64,5	91,2	91,2	111,7	111,7
Force constant	K_t	N/A	36,4	63,1	72,9	126,2	109,3	189,3
Back EMF constant	K_e	Vs/m	21,0	36,4	42,1	72,9	63,1	109,3
Time constant electrical	t_e	ms	27,8	27,8	27,8	27,8	28,0	28,0
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A	27,2	15,7	26,4	15,2	26,0	15,0
Peak current	I_{max}	A	58,8	34,0	58,8	34,0	58,8	34,0
Demagnetising current	I_P	A	>210	>120	>210	126,3	>210	>120
DC-resistance Ph/Ph (20°C)	R	W	0,2	0,6	0,4	1,3	0,6	1,9
Inductance Ph/Ph	L	mH	5,9	17,8	11,9	35,6	17,8	53,4
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V	700	700	700	700	700	700
Max. speed	v_{max}	m/s	11,8	13,6	5,9	6,8	3,9	4,5
Force from magnetic attraction	F_{mag}	kN	2,64	2,64	5,28	5,28	7,92	7,92
Displacement force (deenrgised)	F_v	N	7,8	7,8	15,5	15,5	23,3	23,3
Length primary unit	A	mm	214	214	399	399	584	584
Mass primary unit	m_p	kg	6,9	6,9	13,3	13,3	19,7	19,7
Motor-cable (wire-cross-section)	□	mm^2	4,0	2,5	4,0	2,5	4,0	2,5
Motor-cable (diameter)	Ø	mm	17,4	14,6	17,4	14,6	17,4	14,6
Motor-cable (PG-locknut diameter)	B	mm	34	27	34	27	34	27
Secondary unit			... / S -aaa- S					
Pole pitch (N-S)	pp	mm	18,5					
Mass per meter Secondary unit	m_s	kg/m	10,8					

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

Connection

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

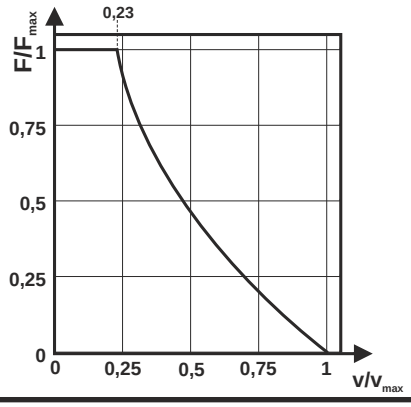
Motor
(shielded)
0,6 m long

Sensor
(shielded)
0,6 m long
ˇ : 8,6 mm

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	BN	
MT -	BU	
Shield	WH or "SHIELD"	

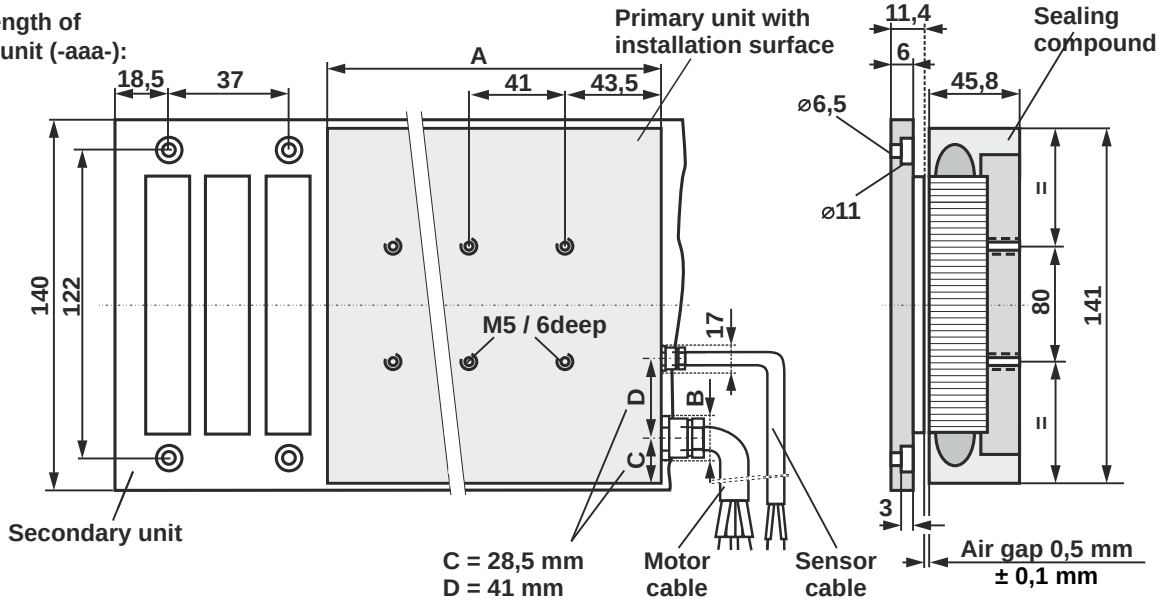
$F_{max} = f(v)$

$\hat{U}_{min\ DC}$: 300 V / 520 V
Winding-temp.: 130°C



Dimensions

available length of secondary unit (-aaa-):
- 074 mm
- 111 mm
- 185 mm
- 333 mm
- 629 mm
- 999 mm



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BOB synchronous - linear - motor

Typ LMS-P 58-140 / ...

Primary unit	Symbol	Unit	... / 185 P - 3st3 - 1 - S		... / 370 P - 3st3 - 1 - S		... / 555 P - 3st3 - 1 - S	
Circuit mode			s = D	s = S	s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N	1300	1300	2600	2600	3900	3900
Maximum force	F_{max}	N	2000	2000	4000	4000	6010	6010
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W	420	420	841	841	1260	1260
Thermal resistance	R_{th}	K/W	0,244	0,244	0,131	0,131	0,089	0,089
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$	75,9	75,9	107,3	107,3	131,5	131,5
Force constant	K_t	N/A	48,6	84,1	97,2	168,3	145,7	252,4
Back EMF constant	K_e	Vs/m	28,1	48,6	56,1	97,1	84,1	145,7
Time constant electrical	t_e	ms	28,9	28,9	29,0	29,0	28,9	28,9
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A	26,8	15,5	26,8	15,4	26,8	15,5
Peak current	I_{max}	A	58,8	34,0	58,8	34,0	58,9	34,0
Demagnetising current	I_P	A	>210	>120	>210	>120	>210	>120
DC-resistance Ph/Ph (20°C)	R	W	0,3	0,8	0,5	1,6	0,8	2,5
Inductance Ph/Ph	L	mH	7,9	23,7	15,8	47,5	23,7	71,2
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V	700	700	700	700	700	700
Max. speed	v_{max}	m/s	8,8	10,2	4,4	5,1	2,9	3,4
Force from magnetic attraction	F_{mag}	kN	3,52	3,52	7,04	7,04	10,56	10,56
Displacement force (deenrgised)	F_v	N	10,4	10,4	20,7	20,7	31,1	31,1
Length primary unit	A	mm	214	214	399	399	584	584
Mass primary unit	m_p	kg	8,9	8,9	17,2	17,2	25,5	25,5
Motor-cable (wire-cross-section)	□	mm^2	4,0	2,5	4,0	2,5	4,0	2,5
Motor-cable (diameter)	Ø	mm	17,4	14,6	17,4	14,6	17,4	14,6
Motor-cable (PG-locknut diameter)	B	mm	34	27	34	27	34	27
Secondary unit			... / S -aaa- S					
Pole pitch (N-S)	pp	mm	18,5					
Mass per meter Secondary unit	m_s	kg/m	16,8					

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

Connection

MT : NTC / 130 °C (t = N)
PTC / 130 °C (t = P)
KTY 84 - 130 (t = K)

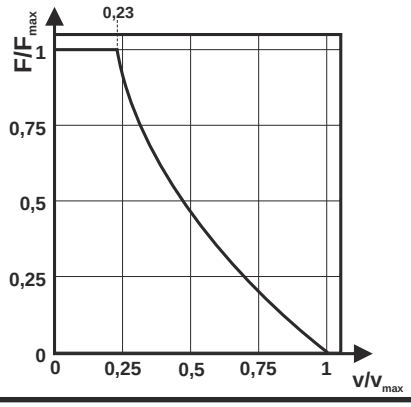
Motor
(shielded)
0,6 m long

Sensor
(shielded)
0,6 m long
ˇ : 8,6 mm

Connector	Code	
Phase U	1 (BK)	BK
Phase V	2 (BK)	BN
Phase W	3 (BK)	BU
PE	GNYE	
MT +	BN	
MT -	BU	
Shield	WH or "SHIELD"	

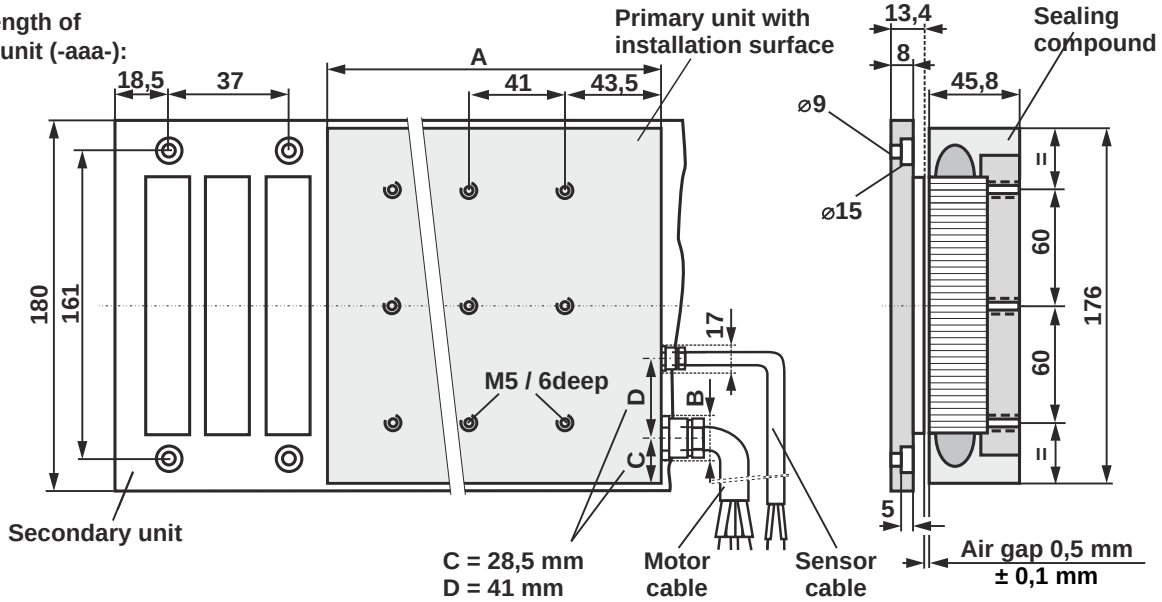
$F_{max} = f(v)$

$\hat{U}_{min\ DC}$: 300 V / 520 V
Winding-temp.: 130°C



Dimensions

available length of secondary unit (-aaa-):
- 074 mm
- 111 mm
- 185 mm
- 333 mm
- 629 mm
- 999 mm



Performance data are tolrated +/-10%. Measurements in mm.

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Web : www.bobolowski.com

BOB synchronous - linear - motor

Typ LMS-P 58-210 / ...

Primary unit	Symbol	Unit	... / 185 P - 3st5 - 1 - S		... / 370 P - 3st5 - 1 - S		... / 555 P - 3st5 - 1 - S	
Circuit mode			s = D	s = S	s = D	s = S	s = D	s = S
Continuous force (Cu: 130°C)	$F_{C\ 130°C}$	N		2100		4100		6000
Maximum force	F_{max}	N		3000		6010		9010
Continuous power loss(Cu:130°C)	$P_{v\ 130°C}$	W		690		1313		1876
Thermal resistance	R_{th}	K/W		0,154		0,085		0,058
Motor constant	$K_{m\ 20°C}$	$N/W^{1/2}$		95,7		135,4		165,8
Force constant	K_t	N/A		93,0		186,0		279,0
Back EMF constant	K_e	Vs/m		53,7		107,4		161,1
Time constant electrical	t_e	ms		30,6		30,7		30,7
Continuous current (Cu: 130°C)	$I_{C\ 130°C}$	A		22,6		22,0		21,5
Peak current	I_{max}	A		46,1		46,2		46,1
Demagnetising current	I_P	A		>165		>165		>165
DC-resistance Ph/Ph (20°C)	R	W		0,6		1,3		1,9
Inductance Ph/Ph	L	mH		19,3		38,7		58
Max. permitted input-voltage	$\hat{U}_{max\ DC}$	V		700		700		700
Max. speed	v_{max}	m/s		9,2		4,6		3,1
Force from magnetic attraction	F_{mag}	kN		5,28		10,56		15,84
Displacement force (deenrgised)	F_v	N		15,5		31,1		46,6
Length primary unit	A	mm		226		411		596
Mass primary unit	m_p	kg		15,1		28,9		42,5
Motor-cable (wire-cross-section)	□	mm^2		4,0		4,0		4,0
Motor-cable (diameter)	Ø	mm		17,4		17,4		17,4
Motor-cable (PG-locknut diameter)	B	mm		34		34		34
Secondary unit			... / S -aaa- S					
Pole pitch (N-S)	pp	mm	18,5					
Mass per meter Secondary unit	m_s	kg/m	27,9					

Electrical figures apply for sinusoidal commutation and are r.m.s. values or refer to r.m.s.values respectively.

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PTC / 130 °C (t = P)
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MT +	BN	
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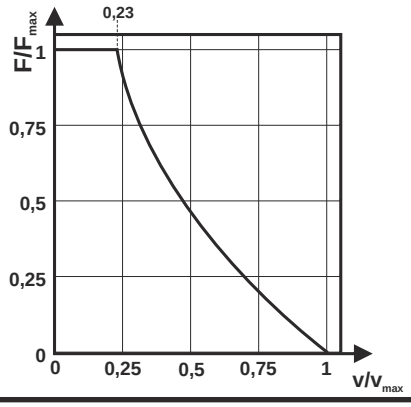

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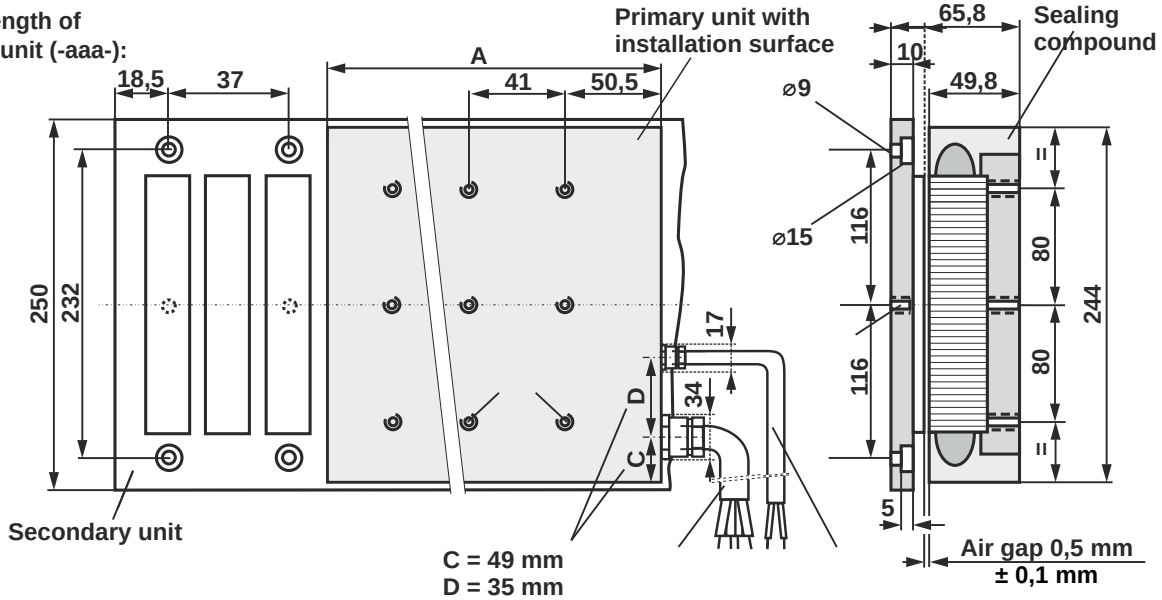

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