Selection guides for 1PH7 and 1PL6 motors
Ventilation data and sound pressure level

Ventilation data and sound pressure level

Shaft height SH	Fan motor: Current consumption at			Direction of air flow	Sound pressure level L_{pA}	Air flow rate at
	400 V/50 Hz (±10%)	400 V/60 Hz (±10%)	480 V/60 Hz (+5%, −10%)		Motor + external fan unit Rated load, 50 Hz Tolerance +3 dB	50 Hz approx.
	A	A	A		1 dB(A)	m^3/s
1PH7 motors						
100	0.19	0.13	0.18	NDE → DE	70	0.04
	0.20	0.13	0.20	DE → NDE	70	0.04
132	0.35	0.24	0.32	NDE → DE	70	0.10
	0.37	0.24	0.33	DE → NDE	70	0.10
160	0.29	0.31	0.33	NDE → DE	72	0.15
	0.3	0.33	0.34	DE → NDE	75	0.15
180	0.8	1.1	1.1	NDE → DE, DE → NDE	73	0.19
225	1.9	2.2	2.2	NDE → DE	74	0.36
	2.8	2.8	2.8	DE → NDE	76	0.36
280	2.55	2.6	2.6	NDE → DE, DE → NDE	74	0.42
1PL6 motors						
180	0.8	1.1	1.1	NDE → DE, DE → NDE	73 [1)]	0.27
225	1.9	2.2	2.2	NDE → DE	74 [1)]	0.38
	2.8	2.8	2.8	DE → NDE	76 [1)]	0.38
280	2.55	2.6	2.6	NDE → DE, DE → NDE	74 [1)]	0.52

1) Speed range 0 to 2000 rpm.

Bearing design/drive type and maximum speeds

Shaft height/ motor type	Bearing type/ drive type	Bearing arrangement		Max. continuous speed for S1 duty		Max. speed limit [1]	
				n_{s1}	n_{s1} [2]	$n_{max.}$	$n_{max.}$ [2]
		Motor end	Bearing designation	rpm	rpm	rpm	rpm
100	Deep-groove ball bearings for coupling or belt output	DE NDE	6308 C4 6208 C4	5500	10000	9000	12000
132	Deep-groove ball bearings for coupling or belt output	DE NDE	6310 C4 6210 C4	4500	8500	8000	10000
160	Deep-groove ball bearings for coupling or belt output	DE NDE	6312 C4 6212 C4	3700	7000	6500	8000
180	Deep-groove ball bearings for coupling output	DE NDE	6214 C3 6214 C3	3500	4500	5000	7000
	Cylindrical roller bearings for belt output	DE NDE	NU22 14E 6214 C3	3500	–	5000	–
	Cylindrical roller bearings for increased cantilever forces	DE NDE	NU22 14E 6214 C3	3000	–	5000	–
225	Deep-groove ball bearings for coupling output	DE NDE	6216 C3 6216 C3	3100	3600 (for 1PH7224)	4500	5500 (for 1PH7224)
	Cylindrical roller bearings for belt output	DE NDE	NU22 16E 6216 C3	3100	–	4500	–
Type 224, 226	Cylindrical roller bearings for increased cantilever forces	DE NDE	NU22 16E 6216 C3	2700	–	4500	–
Type 228	Cylindrical roller bearings for increased cantilever forces	DE NDE	NU22 16E 6216 C3	2500	–	4000	–
280	Deep-groove ball bearings for coupling output	DE NDE	6220 C3 6220 C3	2200	–	3300	–
	Cylindrical roller bearings for belt output	DE NDE	NU22 0E 6220 C3	2200	–	3300	–

Bearing service life

The bearing service life is limited by material fatigue (fatigue service life) or lubrication failure (grease lifetime).

The fatigue service life (static bearing service life L_{10h}) is primarily dependent on the mechanical load. This correlation can be seen in the cantilever force/axial force diagrams. The values are determined according to DIN/ISO 281.

The bearing lifetime is mainly dependent on the bearing size, speed, temperature, as well as the vibrational load.

The bearing lifetime can be extended by especially favorable operating conditions (low average speed, low bearing temperature, cantilever force or vibration load).

A reduction can be expected for difficult operating conditions and when motors are mounted vertically.

Further information can be found in the Planning Guides.

Lubrication for entire service life

For permanent lubrication, the bearing lifetime is coordinated with the bearing service life.

In the basic version, motors up to and including shaft height 225 have lubrication for entire service life.

Regreasing

For motors which can be regreased at defined regreasing intervals, the bearing service life can be extended and/or unfavorable factors such as mounting conditions, speed, bearing size and mechanical load compensated.

A lubricating nipple for regreasing is provided as standard on motors with SH 280.

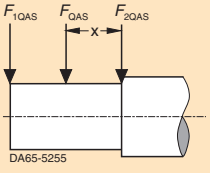
A lubricating nipple for regreasing can be ordered as an optional extra for motors with SH 180 and 225, order code **K40**.

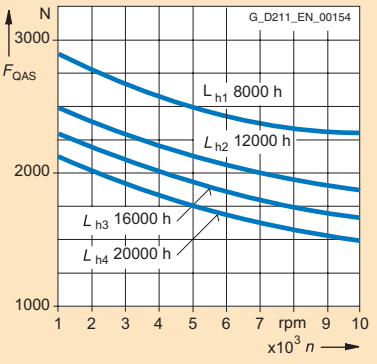
[1] For continuous operation (with 30% n_{max}, 60% $^2/_3$ n_{max}, 10% standstill) for a duty cycle duration of 10 min.

[2] Version for increased maximum speed, see selection and ordering data for 1PH7.

Cantilever force diagrams

Permissible cantilever forces 1PH7 motors Shaft height 100

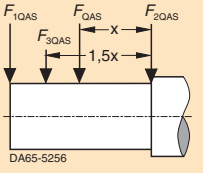


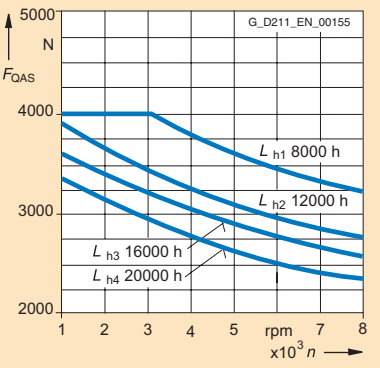


x = 40 mm (1.57 in)
$F_{1QAS} = 0.9\ F_{QAS}$
$F_{2QAS} = 1.1\ F_{QAS}$
L_{h1}, L_{h2}, L_{h3}, L_{h4} = lifetime estimate for variable operating conditions (F_{QAS}; n)
q = period of efficiency [%] under constant conditions

$$L_{10hges} = \frac{100}{\frac{q_1}{L_{h1}} + \frac{q_2}{L_{h2}} + \frac{q_3}{L_{h3}} + \frac{q_4}{L_{h4}}}$$

Permissible cantilever forces 1PH7 motors Shaft height 132

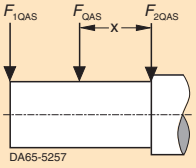


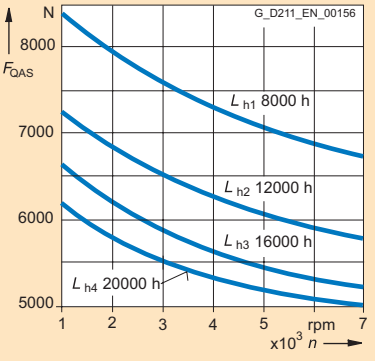


x = 55 mm (2.17 in)
F_{1QAS} = max. 2000 N (449.62 lb_f)
$F_{2QAS} = 1.1\ F_{QAS}$
F_{3QAS} = max. 2500 N (562.03 lb_f)
L_{h1}, L_{h2}, L_{h3}, L_{h4} = lifetime estimate for variable operating conditions (F_{QAS}; n)
q = period of efficiency [%] under constant conditions

$$L_{10hges} = \frac{100}{\frac{q_1}{L_{h1}} + \frac{q_2}{L_{h2}} + \frac{q_3}{L_{h3}} + \frac{q_4}{L_{h4}}}$$

Permissible cantilever forces 1PH7 motors Shaft height 160

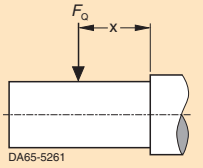


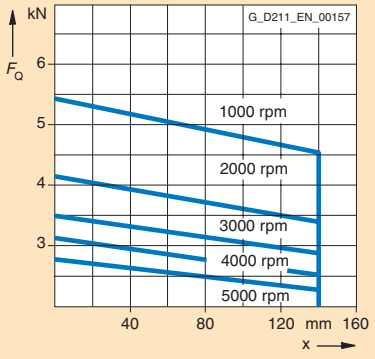


x = 55 mm (2.17 in)
$F_{1QAS} = 0.9\ F_{QAS}$
$F_{2QAS} = 1.1\ F_{QAS}$
L_{h1}, L_{h2}, L_{h3}, L_{h4} = lifetime estimate for variable operating conditions (F_{QAS}; n)
q = period of efficiency [%] under constant conditions

$$L_{10hges} = \frac{100}{\frac{q_1}{L_{h1}} + \frac{q_2}{L_{h2}} + \frac{q_3}{L_{h3}} + \frac{q_4}{L_{h4}}}$$

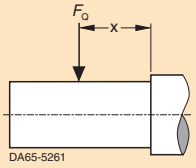
Permissible cantilever forces 1PH718 and. 1PL618 motors. Shaft height 180 for coupling output

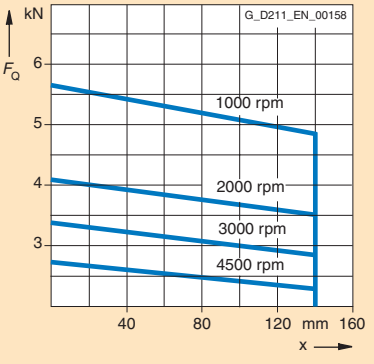




L_{10h} = 20000 h

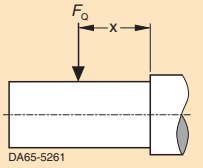
Permissible cantilever forces 1PH722 and. 1PL622 motors. Shaft height 225 for coupling output



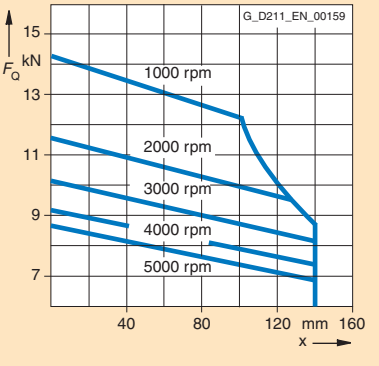


L_{10h} = 20000 h

Permissible cantilever forces 1PH718 and. 1PL618 motors. Shaft height 180 for belt output



Minimum cantilever force 3 kN

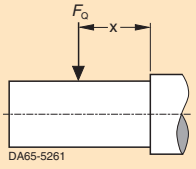


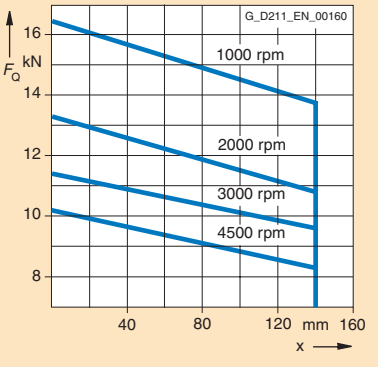
L_{10h} = 12000 h

The roller bearings used here could sustain damage if they are operated under no load.
Observe the specified minimum cantilever forces!

Cantilever force diagrams

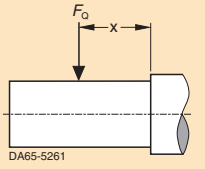
Permissible cantilever forces 1PH722 and. 1PL622 motors. Shaft height 225 for belt output

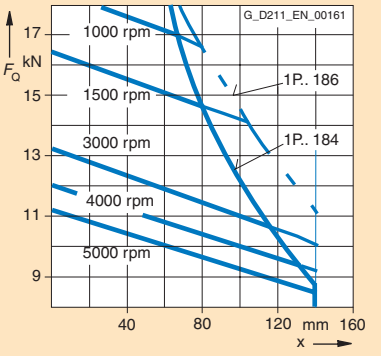




Minimum cantilever force 4 kN L_{10h} = 12000 h

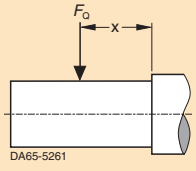
Permissible cantilever forces 1PH718 and. 1PL618 motors. Shaft height 180 for belt output with incr. cantilever force

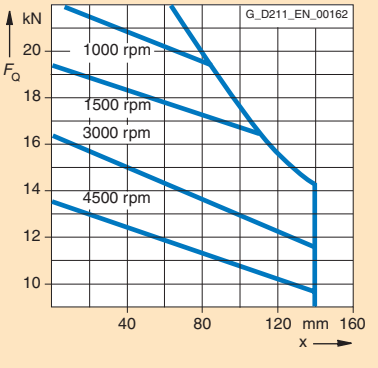




Minimum cantilever force 4 kN L_{10h} = 12000 h

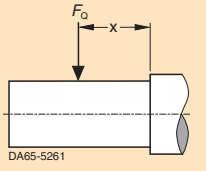
Permissible cantilever forces 1PH722 and. 1PL622 motors. Shaft height 225 for belt output with incr. cantilever force

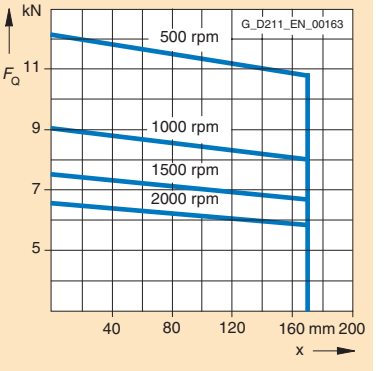




Minimum cantilever force 5 kN L_{10h} = 12000 h

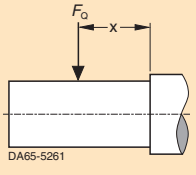
Permissible cantilever forces 1PH728 and. 1PL628 motors. Shaft height 280 for coupling output

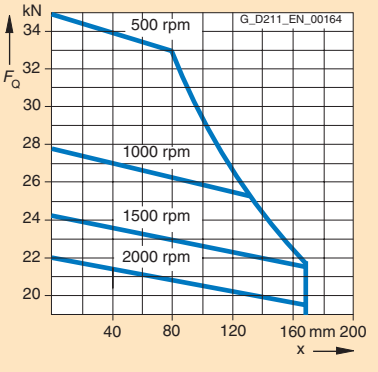




L_{10h} >20000 h when regreased

Permissible cantilever forces 1PH728 and. 1PL628 motors. Shaft height 280 for belt output with incr. cantilever force





Minimum cantilever force 9 kN L_{10h} >12000 h when regreased

The roller bearings used here could sustain damage if they are operated under no load.
Observe the specified minimum cantilever forces!

Selection guides for 1PH7 and 1PL6 motors
Mounting position

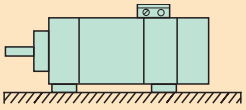
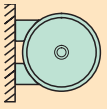
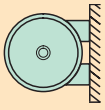
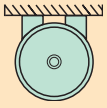
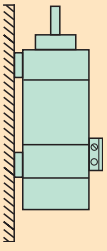
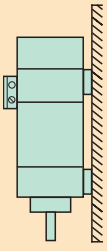
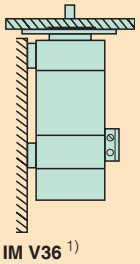
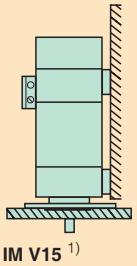
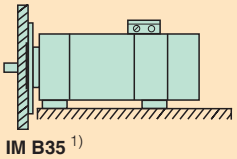
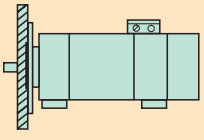
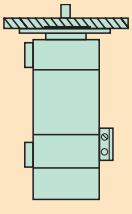
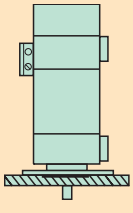
1PH7 and 1PL6 motors are available in types of construction IM B3 (standard model), IM B5 and IM B35. Other types (IM V15, IM V36, IM B6, IM B7, IM B8 etc.) can also be supplied. Depending on the intended motor mounting position, the motor order (shaft heights 180 and 225) must clearly indicate where the lifting lugs need to be fitted before the motor leaves the factory (12th position in motor order number). In the case of motors of shaft heights 100 to 160, the lifting lug screw fittings can be repositioned later for other hoisting methods.

Note: There are no condensate drain holes in the motors.

1 2 3 4 5 6 7 8 9 10 11 12

1PH7 . . . - . . . .

1PL6 . . . - . . . .

Construction type		Construction type			
	**IM B3**		**IM B6**	1	Foot-mounted type (IM B3)
				0	
	**IM B7**		**IM B8**	1	
	**IM V6**		**IM V5**	1	Foot/flange-mounted type (IM B35)
	**IM V36** [1]		**IM V15** [1]	5	
	**IM B35** [1]			3	
	**IM B5**		**IM V3**	2	Flange-mounted type (IM B5)
			**IM V1**		

[1] Flange and foot mounting required.

Terminal box assignment, max. connectable cross sections

Shaft height SH	Motor type	Terminal box type	Cable entry	Max. possible outer cable diameter	Cable entry	Max. possible outer cable diameter [2]	Number of main terminals	Max. possible cross section per terminal	Max. possible current per terminal [1]
			Valid for the 8th position of order no. "2", "4" or "6" [3]		Valid for the 8th position of order no. "7" or "8"				
				mm/in		mm/in		mm^2	A
1PH7 motors									
100	1PH710.-...	Integrated	PG 29	28/1.1	M32 x 1.5	21/0.83	6 x M5	25	84
132	1PH713.-...	Integrated	PG 36	34/1.34	M40 x 1.5	28/1.1	6 x M6	35	104
160	1PH716.-...	Integrated	PG 42	40/1.57	M50 x 1.5	38/1.5	6 x M6	50	123
180	1PH7184-...	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PH7186-..B	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PH7186-..D	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PH7186-..F	1XB7422	2 x M72 x 2	56/2.2	2 x M63 x 1.5	53/2.09	3 x M12	2 x 70	242
	1PH7186-..L	1XB7422	2 x M72 x 2	56/2.2	2 x M63 x 1.5	53/2.09	3 x M12	2 x 70	242
225	1PH7224-..B	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PH7224-..D	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PH7224-..U	1XB7422	2 x M72 x 2	56/2.2	2 x M63 x 1.5	53/2.09	3 x M12	2 x 70	242
	1PH7224-..L	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PH7226-..B	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PH7226-..D	1XB7422	2 x M72 x 2	56/2.2	2 x M63 x 1.5	53/2.09	3 x M12	2 x 70	242
	1PH7226-..F	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PH7226-..L	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PH7228-..B	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PH7228-..D	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PH7228-..F	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PH7228-..L	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
280	1PH728.-..B	1XB7712	3 x M63 x 1.5	53/2.09	–	–	(3+1)[4] x 3 x M16	3 x 95	450
	1PH7284-..C								
	1PH7284-..D								
	1PH7286-..C	1XB7712	3 x M75 x 1.5	68/2.68	–	–	(3+1)[4] x 3 x M16	3 x 185/0.287	710
	1PH7286-..D								
	1PH7288-..C								
	1PH7288-..D								
	1PH728.-..F								

1) Current carrying capacity based on IEC 60204-1, routing type C.
2) Dependent on the design of the metric cable entry.
3) Not for shaft height 280.
4) Including grounding terminal.

Mounted holding brakes for 1PH7 motors

A brake can be mounted on the drive end of 1PH7 motors with shaft heights 100, 132, 160, 180 and 225.

These brakes are electro-magnetic units for dry-running operation. An electro-magnetic field is used to release the brake which is applied using spring force. It operates according to the closed-circuit principle. When de-energized, the spring-operated brake is applied and holds the drive. When current is flowing, the brake opens and the drive can turn.

When the power fails or an “emergency stop” is issued, the drive is braked from its current speed down to standstill. The holding torques and number of emergency stop operations are shown in the table on page 3/165.

The brakes are intended for connection to alternating voltage 230 V AC, 50 to 60 Hz or to direct voltage 24 V DC (only up to frame size 160), which must be provided by the customer.

The rectifier is built into the terminal box of the brake. The degree of protection is IP55.

In the basic version, the brake has three emergency release screws (only for shaft heights 180 and 225); these are axially accessible from the front. The integrated or built-on microswitch can be incorporated in a higher-level control system as either an NC or an NO contact. The fast switching rectifier is used to overexcite the coil to release the brake and to achieve short release times (release current = 2 x holding current).

All of the relevant technical data - e.g. holding torque, permissible speeds, number of emergency braking operations and brake currents are listed in the table on page 3/165.

The operating instructions for the built-on holding brake are supplied together with the motor-brake unit.

Ordering example: 1PH7 186-2HF0**0-2**AA3
Construction type IM B3, holding brake includes microswitch and emergency-release screw (see also order number code on page 3/165 for further ordering options).

Built-on holding brake for motors, shaft heights 100 to 160

The holding brakes for motors in shaft heights 100, 132, and 160 are brake modules (manufactured by Binder) with their own bearings, flange and shaft extension. The brake module's flange and shaft end dimensions are identical to those of the motor. If a motor is to be fitted with a brake, the motor is made in flange-design and with a plain shaft (without a fitted key). The brake module's shaft is then fitted onto the motor shaft by heat shrinking. It can be removed by using an oil-hydraulic interference fit. The brake module is then screwed onto the motor flange. The brake module's shaft end contains a fitted key (with half-key balancing).

The output can be implemented with either a coupling or belt pulley. The permissible cantilever forces can be found in the appropriate cantilever force diagrams.

1PH7 motors (shaft heights 100, 132) are available with type of construction IM B5; further, motors in shaft heights 100, 132 and 160 are also available with type of construction IM B35 (it is also possible to provide motors with a foot mounting type of construction IM B3).

If required, a manual release can be mounted on the brake, so that the brake can be released manually in the event of a voltage failure or motor shutdown. When the manual release lever is released, it automatically returns to the braking state. It is also possible to install a microswitch, which can then be integrated into a higher-level control system as either an NC or NO contact. The microswitch is connected via a separate cable.

The brake module has degree of protection IP55. Motors with built-on brake modules are only available in the vibration severity grade N, and with the shaft and flange accuracy N.

All of the relevant technical data, e.g. holding torque, max. braking energy, permissible speeds, cantilever forces and brake currents are listed in the table on page 3/165.

Ordering example: 1PH7 137-2HF0**2-3K**B3
Construction type IM B5, holding brake with manual release (see also order number code on page 3/165 for further ordering options).

Built-on holding brake for 1PH7 motors, shaft heights 180 and 225

For these motors, the brake (manufactured by Stromag) is mounted on the DE bearing endshield. The motor shaft is extended using a shrunk-on stub shaft. The torque is transmitted through a fitted key in accordance with DIN 6885/1. The stub shaft can in addition be axially secured using a thrust washer and a central screw (M20). The holding brake does not have its own bearings; the output forces are therefore absorbed by the motor bearings. Due to limitations of space and their high transverse forces, belt pulleys cannot be attached. When selecting the coupling to couple to the motor-brake combination, it should be carefully noted that the shaft end diameter is larger than the diameter of the motor shaft end. REVOLEX bolt-type couplings 2LF6337 for shaft height 180 and 2LF6338 for shaft height 225 can be used if preferred.

Ordering data and dimensions, refer to Catalog D 81.1.

Mounted holding brakes for 1PH7 motors (continued)

Technical data of built-on holding brakes with emergency stop function (brake supply voltage 230 V AC, 50 ... 60 Hz/DC 24 V +5% –10%)

Shaft height	Motor type	Brake type	Holding torque (tolerance ±20%)	Speed $n_{max.}$	Perm. single switching energy W_E	Service life switching energy $W_{max.}$	No. emergency stops before lining change from $n_{max.}$ at J z		Coil current AC	Coil current DC	Flange dimension DIN 42 948	Shaft extension dimension DIN 748 Ø length		Perm. cantilever force (3000 rpm, $x_{max.}$)	Moment of inertia of brake	Weight of brake	Opening time	Closing time
			Nm/lb_f-ft	rpm	kJ	MJ	–	kgm^2/lb_f-in-s^2	A	A		mm/in	mm/in	N/lb_f	kgm^2/lb_f-in-s^2	kg/lb	ms	ms
For 1PH7 motors with brake supply voltage 230 V AC, 50 ... 60 Hz																		
100	**1PH710 . Size 19**		60 ... 150/ 44.2 ...110.6	5500	25	90	8700	0.062/ 0.549	1.0	4.7	A250	38/ 1.5	80/ 3.15	2300/ 517.06	0.005/ 0.044	21/ 46.31	255	60
132	**1PH713 . Size 24**		140 ... 310/ 103.2 ... 228.5	4500	40	226	9400	0.208/ 1.841	1.3	6.3	A350	42/ 1.65	110/ 4.33	2000/ 449.62	0.015/ 0.133	46/ 101.43	330	95
160	**1PH716 . Size 29**		280 ... 500/ 206.4 ... 368.5	3700	60	401	11900	0.448/ 3.965	1.35	6.7	A400	55/ 2.17	110/ 4.33	6800/ 1528.71	0.028/ 0.248	66/ 145.53	350	450
180	**1PH7184**	**NFE 60**	600/442.2	3500	69	154	2230	1.02/ 9.028	0.9	–	–	90/ 3.54	90/ 3.54	2800/ 629.47	0.027/ 0.239	55/ 121.28	400	160
	1PH7186	**NFE 60/80**	800/589.6		91	56	620	1.36/ 12.037							0.026/ 0.23			
225	**1PH7224**	**NFE 100**	1000/737	3100	158	153	970	3.0/ 26.552	1.3	–	–	100/ 3.94	100/ 3.94	2800/ 629.47	0.041/ 0.363	75/ 165.38	460	200
	1PH7226	**NFE 100**	1000/737		206	109	530	3.9/ 34.518							0.041/ 0.363			
	1PH7228	**NFE 100/140**	1400/1031.8		248	32	130	4.7/ 41.598							0.041/ 0.363			

Holding torque in Nm (lb_f-ft): For motors in shaft heights 100 to 160, the holding torque can be continuously set in the specified value range using a setting ring. The dynamic braking torque is approximately 0.7 to 0.8 x holding torque.
Speed $n_{max.}$: Max. permissible speed at which emergency stops are possible.
Perm. single switching energy W_E in kJ: Perm. switching energy during an emergency stop, $W_E = J_{total} \times n^2/182.5 \times 10^{-3}$ (J in kgm^2(lb_f-in-s^2), n in rpm)
Service life switching energy $W_{max.}$ in MJ: Max. possible switching energy of the brake (for emergency stop) until the brake linings must be replaced, $W_{max.} = W_E \times z$.
No. of emergency stops z: The specified no. of emergency stops refers to the following conditions: Braking from speed $n_{max.}$, $J_{total} = 2 \times J_{mot.}$
A conversion can be made for operation under different conditions: Number of emergency stops $z = W_{max.}/W_E$
Coil current in A: Current in order to maintain the brake in a released condition. The following applies for NFE brakes:
Release current = 2 x holding current.
Perm. cantilever force in N (lb_f): For motors in shaft heights 100 to 160, coupling and belt outputs are possible; for shaft heights 180 and 225, only coupling outputs are permissible.
Opening (release) time in ms: Separating time until the brake opens (the specified values refer to the max. braking torque).
Closing time in ms: Interlocking time until the brake closes (the values refer to the max. braking torque).

Order No. code for 1PH7 shaft heights 100, 132 and 160 for a built-on holding brake with emergency stop function

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1PH7 . . . - . . . . . - ■ K . .

No brake	**0**
Brake supply voltage: 230 V AC, 50 – 60 Hz	
With brake (brake supply voltage: 230 V AC, 50 – 60 Hz)	**1**
With brake (brake has microswitch)	**2**
With brake (brake has manual release function)	**3**
With brake (brake has a microswitch and manual release)	**4**
Brake supply voltage: 24 V DC	
With brake (brake supply voltage: 24 V DC)	**5**
With brake (brake has microswitch)	**6**
With brake (brake has manual release function)	**7**
With brake (brake has a microswitch and manual release)	**8**

Brake versions are only possible in the following combination:
- Vibration severity grade N, shaft and flange accuracy N ("**K**" in 14th position)
- Shaft extension on the brake module with fitted key and half-key balancing (an "**A**" or "**B**" at the 15th pos.) or plain shaft end (a "**J**" or "**K**" at the 15th pos.)
- Type of construction IM B 5 (only for sizes 100 and 132, a "**2**" at the 12th position) or IM B 35 (a "**3**" at the 12th position, can be mounted/installed with foot type of construction IM B 3) and at the 16th position "**0**", "**3**" or "**6**".

Order No. code for 1PH7 shaft heights 180 and 225 for a built-on holding brake with emergency stop function

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1PH7 . . . - . . . . 0 - ■ AA .

No brake	**0**
With brake (brake has a microswitch and emergency release screw)	**2**
With brake (brake has a microswitch and manual release)	**4**

Versions 2 and 4 are only available in type of construction IM B 3, i.e.:
- at the 12th position, only "**0**"
- at the 14th position, only "**A**"
- at the 15th position, only "**A**"
- and at the 16th position only "**0**", "**3**" or "**6**".

Selection guides for 1PL6 motors
Terminal box assignments/cable cross sections

Terminal box assignment, max. connectable cross sections

Shaft height SH	Motor type	Terminal box type	Cable entry	Max. possible outer cable diameter	Cable entry	Max. possible outer cable diameter [2]	Number of main terminals	Max. possible cross section per terminal	Max. possible current per terminal [1]
			Valid for the 8th position of order no. "2", "4" or "6" [3]		Valid for the 8th position of order no. "7" or "8"				
				mm/in		mm/in		mm^2	A
1PL6 motors									
180	1PL6184-..B	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PL6184-..D	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PL6184-..F	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PL6184-..L	1XB7422	2 x M72 x 2	56/2.2	2 x M63 x 1.5	53/2.09	3 x M12	2 x 70	242
	1PL6186-..B	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PL6186-..D	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PL6186-..F	1XB7422	2 x M72 x 2	56/2.2	2 x M63 x 1.5	53/2.09	3 x M12	2 x 70	242
	1PL6186-..L	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
225	1PL6224-..B	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PL6224-..D	1XB7422	2 x M72 x 2	56/2.2	2 x M63 x 1.5	53/2.09	3 x M12	2 x 70	242
	1PL6224-..F	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PL6224-..L	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PL6226-..B	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PL6226-..D	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PL6226-..F	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PL6226-..L	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PL6228-..B	1XB7322	2 x PG 42	40/1.57	2 x M50 x 1.5	38/1.5	3 x M12	2 x 50	191
	1PL6228-..D	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PL6228-..F	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
	1PL6228-..L	1XB7700	3 x M72 x 2	56/2.2	3 x M75 x 1.5	68/2.68	3 x 2 x M12	3 x 150	583
280	1PL628.	1XB7712	4 x M75 x 1.5	68/2.68	–	–	(3+1) [4] x 4 x M16	4 x 185	925