

DRUM MOTOR

DM SERIES

DM 0080



Practice-oriented, scalable and thought out in detail: The new drum motor DM 0080 makes it easy to build a completely individual conveyor system and is dimensioned for the higher requirements of permissible belt tension now demanded from industry and belt manufacturers alike.

With a broader speed spectrum, the DM 0080 covers all possible applications. The clever plug-and-play connection significantly simplifies the installation. Each motor is approved, tested, and modularized so that it can be produced and delivered around the world in the shortest amount of time.

The modular design of the DM 0080 allows a free combination of individual module groups, such as shaft, end housing, shell, steel or technopolymer gear, asynchronous or synchronous motor winding, to perfectly meet the requirements of an application. In addition, various options, such as encoder, brake, backstop, rubber laggings, etc., as well as different accessories are available.

With the platform concept of the DM 0080, it is possible to cover all internal logistics applications in the food processing sector, as well as in industry, distribution and airports.

The DM 0080 synchronous drum motor is also offered as oil-free variant. It is ideal for highly dynamic applications, conveyor systems in food processing, SmartBelt conveyors and many belt conveyors with servo driver.



Technical data

	Asynchronous squirrel cage motor	AC synchronous permanent magnet motor
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)	Class F, IEC 34 (VDE 0530)
Voltage	230/460 V $\pm 5\%$ (IEC 34/38) Most of the common international voltages and frequencies are available upon request	230 or 400 V
Frequency	60 Hz	200 Hz
Shaft seal, internal	NBR	NBR
Protection rate Motor*	IP69K	IP69K
Thermal controller	Bi-metal switch	Bi-metal switch
Operating mode	S1	S1
Ambient temperature, 3-phase motor	36 to 104 °F Low temperature ranges on request	36 to 104 °F Low temperature ranges on request
Ambient temperature, 3-phase motor for applications with form-fit belts or no belt	+36 to +77 °F	+36 to +104 °F

* The protection rate of the cable connector may deviate.

Design variants and accessories

Laggings	Lagging for friction drive belts Lagging for modular plastic belts Lagging for positive drive solid homogeneous belts
Sprockets	Sprockets
Options	Backstop Electromagnetic holding brake and rectifier* Encoder* Balancing Plug connection*
Oils	Food-grade oils (EU, FDA, NSF H1) Synchronous motors also available as oil-free variants
Certificate	cULus safety certificates
Accessories	Idler pulleys; conveyor rollers; mounting brackets; cables; inverters

A combination of encoder and safety holding brake is not possible. In addition, the use of a backstop with a synchronous motor is technically not meaningful.

* Depending on the option, the motor extends by 1.97" – 2.76".

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Material variants

The following components can be selected for the drum motor and the electrical connection. The combination of components depends on the material used.

Component	Version	Aluminum	Mild steel	Stainless steel	Brass/nickel	Technopolymer
Shell	Crowned		●	●		
	Cylindrical		●	●		
	Cylindrical + key for sprockets		●	●		
End housing	Standard	●		●		
Shaft	Standard			●		
	Cross-drilled thread			●		
Gear boxes	Planetary gear box		●			●
Electrical connector	Straight connector			●	●	●
	Straight hygienic connector			●		
	Elbow connector			●		●
	Terminal box	●		●		●
	Straight plug connection			●		
	90° plug connection			●		
	90° hygienic connector			●		
Motor winding	Asynchronous motor					
	Synchronous motor					
External seal	PTFE					

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Motor variants

Mechanical data for synchronous motors with steel gear

P _N [W/HP]	n _p	gs	i	v [ft/min]	n _A [min ⁻¹]	M _A [lbf·ft]	F _N [lbf]	M _{MAX} /M _A	FW _{MIN} [in]	SL _{MIN} [in]
145/0.19	8	3	164	16	18	48	358	1.40	8.31	8.03
145/0.19	8	3	120	22	25	35	261	2.10	8.31	8.03
145/0.19	8	3	104	24	29	30	227	2.50	8.31	8.03
145/0.19	8	3	85	30	35	25	186	3.00	8.31	8.03
145/0.19	8	2	63	39	48	19	143	2.20	7.56	7.28
145/0.19	8	2	54	47	56	16	123	2.50	7.56	7.28
145/0.19	8	2	42	59	71	13	97	3.00	7.56	7.28
145/0.19	8	2	39	65	78	12	88	3.00	7.56	7.28
145/0.19	8	2	31	81	96	10	72	3.00	7.56	7.28
145/0.19	8	2	27	94	111	8	62	3.00	7.56	7.28
145/0.19	8	2	20	124	148	6	46	3.00	7.56	7.28
145/0.19	8	2	14	175	208	4	33	3.00	7.56	7.28
145/0.19	8	2	11	224	267	3	26	3.00	7.56	7.28
145/0.19	8	1	8	305	364	3	20	3.00	7.56	7.28
145/0.19	8	1	5	535	637	2	11	3.00	7.56	7.28
298/0.40	8	2	54	47	56	34	253	1.20	8.74	8.46
298/0.40	8	2	42	59	71	27	199	1.50	8.74	8.46
298/0.40	8	2	39	65	78	24	182	1.60	8.74	8.46
298/0.40	8	2	31	81	96	20	148	3.00	8.74	8.46
298/0.40	8	2	27	94	111	17	127	3.00	8.74	8.46
298/0.40	8	2	20	124	148	13	96	3.00	8.74	8.46
298/0.40	8	2	14	175	208	9	68	3.00	8.74	8.46
298/0.40	8	2	11	224	267	7	53	3.00	8.74	8.46
298/0.40	8	1	8	305	364	5	41	3.00	8.74	8.46
298/0.40	8	1	5	535	637	3	23	3.00	8.74	8.46
425/0.57	8	2	39	65	78	34	258	1.20	9.92	9.65
425/0.57	8	2	31	81	96	28	210	3.00	9.92	9.65
425/0.57	8	2	27	94	111	24	181	3.00	9.92	9.65
425/0.57	8	2	20	124	148	18	136	3.00	9.92	9.65
425/0.57	8	2	14	175	208	13	97	3.00	9.92	9.65
425/0.57	8	2	11	224	267	10	75	3.00	9.92	9.65
425/0.57	8	1	8	305	364	8	58	3.00	9.92	9.65

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P _N [W/HP]	n _p	gs	i	v [ft/min]	n _A [min ⁻¹]	M _A [lbf·ft]	F _N [lbf]	M _{MAX} /M _A	FW _{MIN} [in]	SL _{MIN} [in]
425/0.57	8	1	5	535	637	4	33	3.00	9.92	9.65
550/0.74	8	2	31	81	96	36	272	2.00	11.10	10.83
550/0.74	8	2	27	93	111	31	234	2.30	11.10	10.83
550/0.74	8	2	20	124	148	23	176	2.90	11.10	10.83
550/0.74	8	2	14	175	208	17	125	3.00	11.10	10.83
550/0.74	8	2	11	224	267	13	98	3.00	11.10	10.83
550/0.74	8	1	8	305	364	10	76	1.90	11.10	10.83
550/0.74	8	1	5	535	637	6	43	3.00	11.10	10.83

P _N	= Rated power	M _A	= Drum motor rated torque
n _p	= Number of poles	F _N	= Drum motor rated belt pull
gs	= Gear stages	M _{MAX} /M _A	= Ratio of max. acceleration torque to rated torque
i	= Speed ratio	FW _{MIN}	= Minimum drum width
v	= Speed @ 200 Hz	SL _{MIN}	= Minimum shell length
n _A	= Shell rated speed @ 200 Hz		

Electrical data for synchronous motors

P _N [W/HP]	n _p	U _N [V]	I _N [A]	I ₀ [A]	I _{MAX} [A]	f _N [Hz]	η	n _N [RPM]	J _R [kgcm ²]	M _N [Nm]	M ₀ [Nm]	M _{MAX} [Nm]	R _M [Ω]	L _{SD} [mH]	L _{SQ} [mH]	k _e [V/krpm]	T _e [ms]	k _{TN} [Nm/A]	U _{SH} [V]
145/0.19	8	230	0.81	0.1	2.43	200	0.85	3000	0.14	0.46	0.46	1.38	21.6	45.6	53.7	41.57	4.97	0.57	25
145/0.19	8	400	0.47	0.12	1.41	200	0.83	3000	0.14	0.46	0.46	1.38	62.5	130.7	138.0	72.23	4.41	0.98	36
298/0.40	8	230	1.30	0.21	3.90	200	0.86	3000	0.28	0.95	0.95	2.85	10.2	27.8	29.3	47.46	5.75	0.73	19
298/0.40	8	400	0.78	0.2	2.34	200	0.87	3000	0.28	0.95	0.95	2.85	29.1	81.9	94.1	83.09	6.48	1.22	32
425/0.57	8	230	2.30	0.2	6.90	200	0.87	3000	0.42	1.35	1.35	4.05	5.66	16.3	19.4	45.81	6.86	0.59	19
425/0.57	8	400	1.32	0.22	3.96	200	0.86	3000	0.42	1.35	1.35	4.05	17.6	49.8	59.0	80.80	6.70	1.02	33
550/0.74	8	230	2.94	0.2	8.82	200	0.90	3000	0.60	1.75	1.75	5.25	3.89	10.2	11.8	38.45	6.06	0.59	5.73
550/0.74	8	400	1.70	0.1	5.10	200	0.90	3000	0.60	1.75	1.75	5.25	9.20	24.1	27.6	66.60	6.00	1.03	23.46

P _N	= Rated power	M _N	= Rated torque of rotor
n _p	= Number of poles	M ₀	= Standstill torque
U _N	= Rated voltage	M _{MAX}	= Maximum torque
I _N	= Rated current	R _M	= Phase to phase resistance
I ₀	= Standstill current	L _{SD}	= d-axis inductance
I _{MAX}	= Maximum current	L _{SQ}	= q-axis inductance
f _N	= Rated frequency	k _e	= EMF (mutual induction voltage constant)
η	= Efficiency	T _e	= Electrical time constant
n _N	= Rated torque of rotor	k _{TN}	= Torque constant
J _R	= Rotor moment of inertia	U _{SH}	= Heating voltage

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Mechanical data for synchronous motors with oil-free steel gear

P _N [W/HP]	n _p	g _s	i	v [ft/min]	n _A [min ⁻¹]	M _A [lb·ft]	F _N [lbf]	M _{MAX} /M _A	FW _{MIN} [in]	SL _{MIN} [in]
80/0.11	8	2	63	39	48	10	78	3.00	7.56	7.28
80/0.11	8	2	54	47	56	9	67	3.00	7.56	7.28
80/0.11	8	2	42	59	71	7	52	3.00	7.56	7.28
80/0.11	8	2	39	65	78	6	48	3.00	7.56	7.28
80/0.11	8	2	31	81	96	5	39	3.00	7.56	7.28
80/0.11	8	2	27	93	111	4	33	3.00	7.56	7.28
80/0.11	8	2	21	124	148	3	25	3.00	7.56	7.28
80/0.11	8	2	14	175	208	2	18	3.00	7.56	7.28
80/0.11	8	2	11	224	267	2	14	3.00	7.56	7.28
80/0.11	8	1	8	305	364	1	11	3.00	7.56	7.28
80/0.11	8	1	5	535	637	1	6	3.00	7.56	7.28
110/0.15	8	2	54	47	56	12	93	3.00	8.74	8.46
110/0.15	8	2	42	59	71	10	74	3.00	8.74	8.46
110/0.15	8	2	39	65	78	9	67	3.00	8.74	8.46
110/0.15	8	2	31	81	96	7	54	3.00	8.74	8.46
110/0.15	8	2	27	93	111	6	47	3.00	8.74	8.46
110/0.15	8	2	20	124	148	5	35	3.00	8.74	8.46
110/0.15	8	2	14	175	208	3	25	3.00	8.74	8.46
110/0.15	8	2	11	224	267	3	20	3.00	8.74	8.46
110/0.15	8	1	8	305	364	2	15	3.00	8.74	8.46
110/0.15	8	1	5	535	637	1	9	3.00	8.74	8.46
180/0.24	8	2	39	65	78	15	109	2.70	9.92	9.65
180/0.24	8	2	31	81	96	12	89	3.00	9.92	9.65
180/0.24	8	2	27	93	111	10	76	3.00	9.92	9.65
180/0.24	8	2	20	124	148	8	57	3.00	9.92	9.65
180/0.24	8	2	14	175	208	5	41	3.00	9.92	9.65
180/0.24	8	2	11	224	267	4	32	3.00	9.92	9.65
180/0.24	8	1	8	305	364	3	25	3.00	9.92	9.65
180/0.24	8	1	5	535	637	2	14	3.00	9.92	9.65

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P_N [W/HP]	n_p	gs	i	v [ft/min]	n_A [min ⁻¹]	M_A [lbf·ft]	F_N [lbf]	M_{MAX}/M_A	FW_{MIN} [in]	SL_{MIN} [in]
235/0.32	8	2	39	65	78	20	153	1.90	11.10	10.83
235/0.32	8	2	31	81	96	17	125	3.00	11.10	10.83
235/0.32	8	2	27	93	111	14	107	3.00	11.10	10.83
235/0.32	8	2	20	124	148	11	80	3.00	11.10	10.83
235/0.32	8	2	14	175	208	8	57	3.00	11.10	10.83
235/0.32	8	2	11	224	267	6	45	3.00	11.10	10.83
235/0.32	8	1	8	305	364	5	35	3.00	11.10	10.83
235/0.32	8	1	5	535	637	3	20	3.00	11.10	10.83

P_N	= Rated power	M_A	= Drum motor rated torque
n_p	= Number of poles	F_N	= Drum motor rated belt pull
gs	= Gear stages	M_{MAX}/M_A	= Ratio of max. acceleration torque to rated torque
i	= Speed ratio	FW_{MIN}	= Minimum drum width
v	= Speed @ 200 Hz	SL_{MIN}	= Minimum shell length
n_A	= Shell rated speed @ 200 Hz		

Electrical data for oil-free synchronous motors

P_N [W/HP]	n_p	U_N [V]	I_N [A]	I_0 [A]	I_{MAX} [A]	f_N [Hz]	η	n_N [RPM]	J_R [kgcm ²]	M_N [Nm]	M_0 [Nm]	M_{MAX} [Nm]	R_M [Ω]	L_{SD} [mH]	L_{SQ} [mH]	k_e [V/krpm]	T_e [ms]	k_{TN} [Nm/A]	U_{SH} [V DC]
80/0.11	8	230	0.45	0.1	1.34	200	0.85	3000	0.14	0.25	0.25	0.76	21.62	45.6	53.7	41.57	4.97	0.57	25
80/0.11	8	400	0.26	0.12	0.78	200	0.83	3000	0.14	0.25	0.25	0.76	62.54	130.7	138.0	72.23	4.41	0.98	36
110/0.15	8	230	0.48	0.21	1.44	200	0.86	3000	0.28	0.35	0.35	1.05	10.20	27.8	29.3	47.46	5.75	0.73	19
110/0.15	8	400	0.29	0.2	0.86	200	0.87	3000	0.28	0.35	0.35	1.05	29.06	81.9	94.1	83.09	6.48	1.22	32
180/0.24	8	230	0.97	0.2	2.91	200	0.87	3000	0.42	0.57	0.57	1.72	5.66	16.3	19.4	45.81	6.86	0.59	19
180/0.24	8	400	0.56	0.22	1.69	200	0.86	3000	0.42	0.57	0.57	1.72	17.60	49.8	59.0	80.80	6.70	1.02	33
235/0.32	8	230	1.30	0.2	3.90	200	0.92	3000	0.60	0.75	0.75	2.25	3.89	10.2	11.8	38.45	6.06	0.58	2.53
235/0.32	8	400	0.75	0.1	2.25	200	0.92	3000	0.60	0.75	0.75	2.25	9.20	24.1	27.6	66.60	6.00	1.00	3.45

P_N	= Rated power	M_N	= Rated torque of rotor
n_p	= Number of poles	M_0	= Standstill torque
U_N	= Rated voltage	M_{MAX}	= Maximum torque
I_N	= Rated current	R_M	= Phase to phase resistance
I_0	= Standstill current	L_{SD}	= d-axis inductance
I_{MAX}	= Maximum current	L_{SQ}	= q-axis inductance
f_N	= Rated frequency	k_e	= EMF (mutual induction voltage constant)
η	= Efficiency	T_e	= Electrical time constant
n_N	= Rated torque of rotor	k_{TN}	= Torque constant
J_R	= Rotor moment of inertia	U_{SH}	= Heating voltage

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Mechanical data for 3-phase asynchronous motor with steel gear

P _N [W/HP]	n _p	g _s	i	v [ft/min]	n _A [min ⁻¹]	M _A [lbf·ft]	F _N [lbf]	FW _{MIN} [in]	SL _{MIN} [in]
40/0.05	4	3	164.23	7	9	25	189	8.62	8.35
40/0.05	4	3	119.83	12	13	18	138	8.62	8.35
40/0.05	4	3	103.89	12	15	16	120	8.62	8.35
40/0.05	4	3	85.34	14	18	13	98	8.62	8.35
40/0.05	4	2	62.7	21	25	10	76	7.87	7.60
40/0.05	4	2	53.63	24	29	9	65	7.87	7.60
40/0.05	4	2	42.28	31	36	7	51	7.87	7.60
40/0.05	4	2	38.5	33	40	6	47	7.87	7.60
40/0.05	4	2	31.35	40	49	5	38	7.87	7.60
40/0.05	4	2	26.94	47	57	4	33	7.87	7.60
40/0.05	4	2	20.27	64	76	3	25	7.87	7.60
75/0.10	2	3	164.23	17	20	23	170	8.62	8.35
75/0.10	2	3	119.83	24	27	17	124	8.62	8.35
75/0.10	2	3	103.89	26	31	14	108	8.62	8.35
75/0.10	2	3	85.34	31	38	12	88	8.62	8.35
75/0.10	2	2	62.7	43	51	9	68	7.87	7.60
75/0.10	2	2	53.63	50	60	8	58	7.87	7.60
75/0.10	2	2	42.28	64	76	6	46	7.87	7.60
75/0.10	2	2	38.5	71	83	6	42	7.87	7.60
75/0.10	2	2	31.35	85	102	5	34	7.87	7.60
75/0.10	2	2	26.94	100	119	4	29	7.87	7.60
75/0.10	2	2	20.27	133	158	3	22	7.87	7.60
75/0.10	2	2	14.44	187	222	2	16	7.87	7.60
75/0.10	2	2	11.23	240	285	2	12	7.87	7.60

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P _N [W/HP]	n _p	gs	i	v [ft/min]	n _A [min ⁻¹]	M _A [lbf*ft]	F _N [lbf]	FW _{MIN} [in]	SL _{MIN} [in]
80/0.11	4	3	119.83	12	13	36	267	10.59	10.31
80/0.11	4	3	103.89	12	15	31	231	10.59	10.31
80/0.11	4	3	85.34	17	18	25	190	10.59	10.31
80/0.11	4	2	62.7	21	25	20	146	9.84	9.57
80/0.11	4	2	53.63	24	29	17	125	9.84	9.57
80/0.11	4	2	42.28	31	37	13	99	9.84	9.57
80/0.11	4	2	38.5	36	41	12	90	9.84	9.57
80/0.11	4	2	31.35	43	50	10	73	9.84	9.57
80/0.11	4	2	26.94	50	59	8	63	9.84	9.57
80/0.11	4	2	20.27	66	78	6	47	9.84	9.57
80/0.11	4	2	14.44	92	109	4	34	9.84	9.57
80/0.11	4	2	11.23	119	140	4	26	9.84	9.57
80/0.11	4	1	8.25	161	191	3	20	9.84	9.57
80/0.11	4	1	4.71	280	335	2	12	9.84	9.57
140/0.19	2	3	119.83	24	28	30	225	10.59	10.31
140/0.19	2	3	103.89	26	32	26	195	10.59	10.31
140/0.19	2	3	85.34	33	39	22	160	10.59	10.31
140/0.19	2	2	62.7	45	53	17	123	9.84	9.57
140/0.19	2	2	53.63	52	62	14	105	9.84	9.57
140/0.19	2	2	42.28	66	78	11	83	9.84	9.57
140/0.19	2	2	38.5	74	86	10	76	9.84	9.57
140/0.19	2	2	31.35	90	106	8	62	9.84	9.57
140/0.19	2	2	26.94	104	123	7	53	9.84	9.57
140/0.19	2	2	20.27	138	164	5	40	9.84	9.57
140/0.19	2	2	14.44	192	230	4	28	9.84	9.57
140/0.19	2	2	11.23	249	295	3	22	9.84	9.57
140/0.19	2	1	8.25	337	402	2	17	9.84	9.57
140/0.19	2	1	4.71	591	704	1	10	9.84	9.57

P_N = Rated power
 n_p = Number of poles
 gs = Gear stages
 i = Speed ratio
 v = Speed @ 60 Hz

n_A = Rated speed of shell @ 60 Hz
 M_A = Drum motor rated torque
 F_N = Drum motor rated belt pull
 FW_{MIN} = Minimum drum width
 SL_{MIN} = Minimum shell length

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Mechanical data for 3-phase asynchronous motor with technopolymer gear

P _N [W/HP]	n _p	gs	i	v [ft/min]	n _A [min ⁻¹]	M _A [lbf·ft]	F _N [lbf]	FW _{MIN} [in]	SL _{MIN} [in]
40/0.05	4	3	78.6	17	20	12	91	9.41	9.13
40/0.05	4	3	71.6	19	22	11	83	9.41	9.13
40/0.05	4	3	63.5	21	24	10	73	9.41	9.13
40/0.05	4	3	52.9	24	29	8	61	9.41	9.13
40/0.05	4	3	48.8	26	32	8	56	9.41	9.13
40/0.05	4	3	43.3	31	36	7	50	9.41	9.13
40/0.05	4	2	19.2	66	80	3	23	9.41	9.13
40/0.05	4	2	16	81	96	3	19	9.41	9.13
40/0.05	4	2	13.1	100	118	2	16	9.41	9.13
75/0.10	2	3	78.6	33	41	11	81	9.41	9.13
75/0.10	2	3	71.6	38	45	10	74	9.41	9.13
75/0.10	2	3	63.5	43	50	9	66	9.41	9.13
75/0.10	2	3	52.9	50	60	7	55	9.41	9.13
75/0.10	2	3	48.8	55	66	7	51	9.41	9.13
75/0.10	2	3	43.3	62	74	6	45	9.41	9.13
75/0.10	2	2	19.2	140	167	3	21	9.41	9.13
75/0.10	2	2	16	168	200	2	17	9.41	9.13
75/0.10	2	2	13.1	206	245	2	14	9.41	9.13

P _N	= Rated power	n _A	= Rated speed of shell @ 60 Hz
n _p	= Number of poles	M _A	= Drum motor rated torque
gs	= Gear stages	F _N	= Drum motor rated belt pull
i	= Speed ratio	FW _{MIN}	= Minimum drum width
v	= Speed @ 60 Hz	SL _{MIN}	= Minimum shell length

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Electrical data for 3-phase asynchronous motor

P_N [W/HP]	n_p	n_N [min ⁻¹]	f_N [Hz]	U_N [V]	I_N [A]	I_0 [A]	$\cos\varphi$	η	J_R [kgcm ²]	I_s/I_N	M_s/M_N	M_p/M_N	M_B/M_N	M_N [Nm]	R_M [Ω]	$U_{SH\Delta}$ [V]	U_{SHY} [V]
40/0.05	4	1551	60	230	0.33	0.32	0.72	0.43	0.67	1.89	1.34	1.34	1.43	0.25	294.5	35.4	—
40/0.05	4	1644	60	460	0.21	0.22	0.61	0.40	0.67	1.98	1.85	1.85	2.08	0.23	294.5	—	61.4
75/0.10	2	3248	60	230	0.37	0.24	0.85	0.59	0.67	3	1.54	1.54	1.68	0.22	164.4	25.9	—
75/0.10	2	3377	60	460	0.21	0.18	0.73	0.61	0.67	3.52	2.03	2.03	2.39	0.21	164.4	—	44.8
80/0.11	4	1572	60	230	0.55	0.46	0.69	0.53	1.25	2.17	1.42	1.42	1.55	0.49	132.5	26.4	—
80/0.11	4	1659	60	460	0.34	0.33	0.57	0.51	1.25	2.4	2.09	2.09	2.25	0.46	132.5	—	45.8
140/0.19	2	3355	60	230	0.63	0.35	0.81	0.69	1.25	3.84	1.76	1.76	1.91	0.40	72.7	19	—
140/0.19	2	3431	60	460	0.37	0.27	0.69	0.68	1.25	4.45	2.46	2.46	2.67	0.39	72.7	—	32.9

P_N = Rated power
 n_p = Number of poles
 n_N = Rated speed of rotor
 f_N = Rated frequency
 U_N = Rated voltage
 I_N = Rated current
 I_0 = Standstill current
 $\cos\varphi$ = Power factor
 η = Efficiency

J_R = Rotor moment of inertia
 I_s/I_N = Ratio of startup current – rated current
 M_s/M_N = Ratio of startup torque – rated torque
 M_B/M_N = Ratio of pull-out torque – rated torque
 M_p/M_N = Ratio of pull-up torque – rated torque
 M_N = Rated torque of rotor
 R_M = Branch resistance
 $U_{SH\Delta}$ = Heater voltage in delta connection
 U_{SHY} = Heater voltage in star connection

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Mechanical data for 1-phase asynchronous motor with steel gear

P _N [W/HP]	n _p	g _s	i	v [ft/min]	n _A [1/min]	M _A [lbf*ft]	F _N [lbf]	FW _{MIN} [in]	SL _{MIN} [in]
25/0.03	4	3	119.83	12	13	11	83	10.59	10.31
25/0.03	4	3	103.89	12	15	10	72	10.59	10.31
25/0.03	4	3	85.34	17	19	8	59	10.59	10.31
25/0.03	4	2	62.7	21	25	6	45	9.84	9.57
25/0.03	4	2	53.63	26	30	5	39	9.84	9.57
25/0.03	4	2	42.28	31	38	4	31	9.84	9.57
25/0.03	4	2	38.5	36	41	4	28	9.84	9.57
25/0.03	4	2	31.35	43	51	3	23	9.84	9.57
25/0.03	4	2	26.94	50	59	3	19	9.84	9.57
25/0.03	4	2	20.27	66	78	2	15	9.84	9.57
75/0.10	2	3	119.83	24	28	16	120	10.59	10.31
75/0.10	2	3	103.89	26	32	14	104	10.59	10.31
75/0.10	2	3	85.34	33	39	11	85	10.59	10.31
75/0.10	2	2	62.7	45	53	9	65	9.84	9.57
75/0.10	2	2	53.63	52	62	7	56	9.84	9.57
75/0.10	2	2	42.28	66	78	6	44	9.84	9.57
75/0.10	2	2	38.5	74	86	5	40	9.84	9.57
75/0.10	2	2	31.35	88	106	4	33	9.84	9.57
75/0.10	2	2	26.94	104	123	4	28	9.84	9.57
75/0.10	2	2	20.27	138	163	3	21	9.84	9.57
75/0.10	2	2	14.44	192	229	2	15	9.84	9.57
75/0.10	2	2	11.23	247	295	2	12	9.84	9.57
85/0.12	2	3	119.83	24	28	18	138	10.59	10.31
85/0.12	2	3	103.89	26	32	16	120	10.59	10.31
85/0.12	2	3	85.34	33	39	13	98	10.59	10.31
85/0.12	2	2	62.7	45	53	10	75	9.84	9.57
85/0.12	2	2	53.63	52	62	9	65	9.84	9.57
85/0.12	2	2	42.28	66	78	7	51	9.84	9.57
85/0.12	2	2	38.5	74	86	6	46	9.84	9.57
85/0.12	2	2	31.35	88	106	5	38	9.84	9.57

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P_N [W/HP]	n_p	gs	i	v [ft/min]	n_A [1/min]	M_A [lbf*ft]	F_N [lbf]	FW_{MIN} [in]	SL_{MIN} [in]
85/0.12	2	2	26.94	104	123	4	32	9.84	9.57
85/0.12	2	2	20.27	138	163	3	24	9.84	9.57
85/0.12	2	2	14.44	192	229	2	17	9.84	9.57
85/0.12	2	2	11.23	247	295	2	13	9.84	9.57
110/0.15	2	3	119.83	24	28	23	175	10.59	10.31
110/0.15	2	3	103.89	26	32	20	151	10.59	10.31
110/0.15	2	3	85.34	33	39	17	124	10.59	10.31
110/0.15	2	2	62.7	45	53	13	96	9.84	9.57
110/0.15	2	2	53.63	52	62	11	82	9.84	9.57
110/0.15	2	2	42.28	66	78	9	65	9.84	9.57
110/0.15	2	2	38.5	74	86	8	59	9.84	9.57
110/0.15	2	2	31.35	88	106	6	48	9.84	9.57
110/0.15	2	2	26.94	104	123	6	41	9.84	9.57
110/0.15	2	2	20.27	138	163	4	31	9.84	9.57
110/0.15	2	2	14.44	192	230	3	22	9.84	9.57
110/0.15	2	2	11.23	249	295	2	17	9.84	9.57

P_N = Rated power
 n_p = Number of poles
gs = Gear stages
i = Speed ratio
v = Speed @ 60 Hz

n_A = Rated speed of shell @ 60 Hz
 M_A = Drum motor rated torque
 F_N = Drum motor rated belt pull
 FW_{MIN} = Minimum drum width
 SL_{MIN} = Minimum shell length

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Mechanical data for 1-phase asynchronous motor with technopolymer gear

P _N [W/HP]	n _p	gs	i	v [ft/min]	n _A [RPM]	M _A [lbf·ft]	F _N [lbf]	FW _{MIN} [in]	SL _{MIN} [in]
25/0.03	4	3	115.2	12	14	11	79	11.30	11.02
25/0.03	4	3	96	14	17	9	66	11.30	11.02
25/0.03	4	3	78.55	17	20	7	54	11.30	11.02
25/0.03	4	3	71.56	19	22	7	49	11.30	11.02
75/0.10	2	3	96	28	34	13	95	11.30	11.02
75/0.10	2	3	78.55	36	42	10	78	11.30	11.02
75/0.10	2	3	71.56	38	46	10	71	11.30	11.02
75/0.10	2	3	63.51	45	52	8	63	11.30	11.02
85/0.12	2	3	78.55	36	42	12	90	11.30	11.02
85/0.12	2	3	71.56	38	46	11	82	11.30	11.02
85/0.12	2	3	63.51	45	52	10	73	11.30	11.02
110/0.15	2	3	63.51	45	52	12	92	11.30	11.02
110/0.15	2	3	52.92	52	63	10	77	11.30	11.02
110/0.15	2	3	48.79	57	68	10	71	11.30	11.02
110/0.15	2	3	43.3	64	77	8	63	11.30	11.02
110/0.15	2	2	19.2	145	173	4	29	11.30	11.02
110/0.15	2	2	16	173	207	3	25	11.30	11.02
110/0.15	2	2	13.09	213	253	3	20	11.30	11.02

P _N	= Rated power	n _A	= Rated speed of shell @ 60 Hz
n _p	= Number of poles	M _A	= Drum motor rated torque
gs	= Gear stages	F _N	= Drum motor rated belt pull
i	= Speed ratio	FW _{MIN}	= Minimum drum width
v	= Speed @ 60 Hz	SL _{MIN}	= Minimum shell length

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Electrical data for 1-phase asynchronous motor

P_N [W/HP]	n_p	n_N [min ⁻¹]	f_N [Hz]	U_N [V]	I_N [A]	I_0 [A]	$\cos\varphi$	η	J_R [kgcm ²]	I_s/I_N	M_s/M_N	M_B/M_N	M_P/M_N	M_N [Nm]	R_M [Ω]	$U_{SH\Delta}$ [V DC]	U_{SHY} [V DC]	C_R [μF]
25/0.03	4	1320	50	230	0.39	0.31	1	0.28	1.3	2.19	1.11	1.37	1.11	0.18	150	44	—	3
50/0.07	2	3300	60	115	1.26	0.85	0.99	20	—	—	—	—	—	0.14	9.5	33	3	10
75/0.10	2	3300	60	230	0.68	0.5	1	28	—	—	—	—	—	0.22	38	34	4	6
85/0.12	2	3300	60	115	1.42	0.93	0.99	—	—	—	—	—	—	0.25	9.5	—	—	20
85/0.12	2	3300	60	230	0.72	0.45	1	—	—	—	—	—	—	0.25	38	28	6	6

P_N = Rated power

n_p = Number of poles

n_N = Rated speed of rotor

f_N = Rated frequency

U_N = Rated voltage

I_N = Rated current

I_0 = Standstill current

$\cos\varphi$ = Power factor

η = Efficiency

J_R = Rotor moment of inertia

I_s/I_N = Ratio of startup current – rated current

M_s/M_N = Ratio of startup torque – rated torque

M_B/M_N = Ratio of pull-out torque – rated torque

M_P/M_N = Ratio of pull-up torque – rated torque

M_N = Rated torque of rotor

R_M = Branch resistance

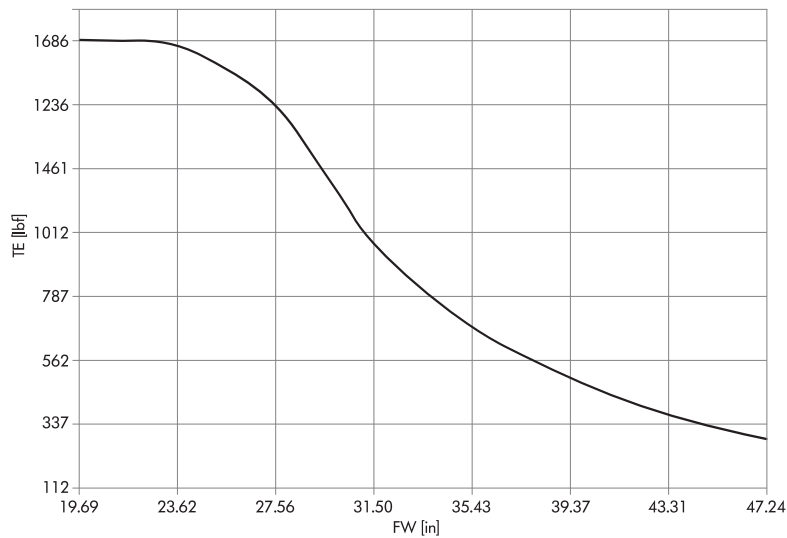
$U_{SH\Delta}$ = Heater voltage in delta connection

U_{SHY} = Heater voltage in star connection

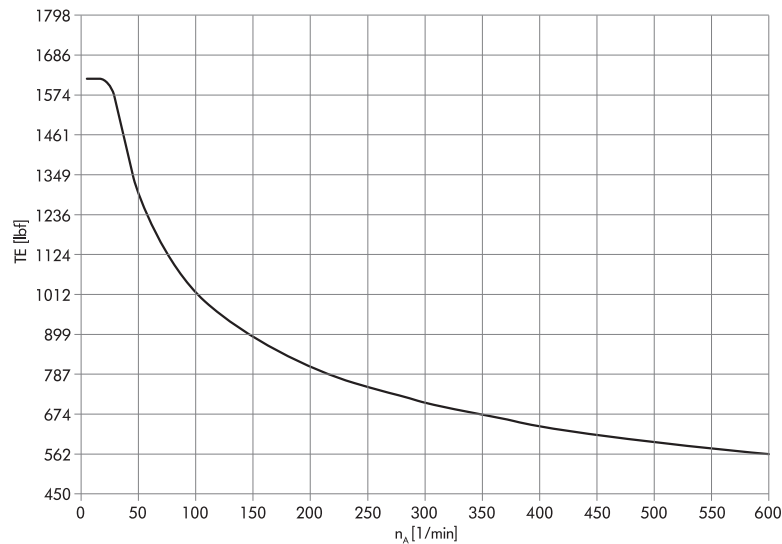
C_R = Capacitor size

Belt tension diagrams

Belt tension depending on drum width



Belt tension depending on rated speed of shell



Note: The correct value for the maximum permissible belt tension is determined from the speed of the drum motor. When selecting the motor, also check whether the maximum permissible TE value fits the desired drum width (FW). The belt tension diagrams apply only to standard shafts.

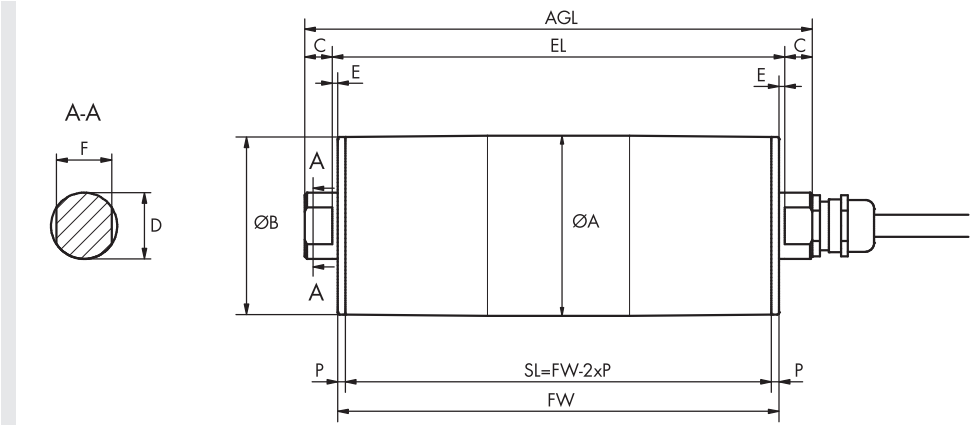
TE = Belt tension
 n_A = Rated speed of shell @ 60 Hz
FW = Drum width

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Dimensions

Drum motor



Type		A [in]	B [in]	C [in]	D [in]	S [in]	F [in]	P [in]	SL [in]	EL [in]	AGL [in]
DM 0080 crowned	Standard	3.21	3.17	0.49	1.18	0.10	0.98	0.14	FW - 0.28	FW + 0.20	FW + 1.18
	Optional	3.21	3.17	0.49	0.98	0.10	0.79	0.14	FW - 0.28	FW + 0.20	FW + 1.18
	Optional	3.21	3.17	0.49	0.67	0.10	0.53	0.14	FW - 0.28	FW + 0.20	FW + 1.18
DM 0080 cylindrical	Standard	3.19	3.19	0.49	1.18	0.10	0.98	0.14	FW - 0.28	FW + 0.20	FW + 1.18
	Optional	3.19	3.19	0.49	0.98	0.10	0.79	0.14	FW - 0.28	FW + 0.20	FW + 1.18
	Optional	3.19	3.19	0.49	0.67	0.10	0.53	0.14	FW - 0.28	FW + 0.20	FW + 1.18
DM 0080 cylindrical + key	Standard	3.22	3.22	0.49	1.18	0.10	0.98	0.14	FW - 0.28	FW + 0.20	FW + 1.18
	Optional	3.22	3.22	0.49	0.98	0.10	0.79	0.14	FW - 0.28	FW + 0.20	FW + 1.18
	Optional	3.22	3.22	0.49	0.67	0.10	0.53	0.14	FW - 0.28	FW + 0.20	FW + 1.18

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