Momentum Technologies GmbH

MTM82

Asynchronous Drum Motor

oil-less

Partner Company

ROLLEX SYSTEMS

Momentum Technologies GmbH

Characteristics

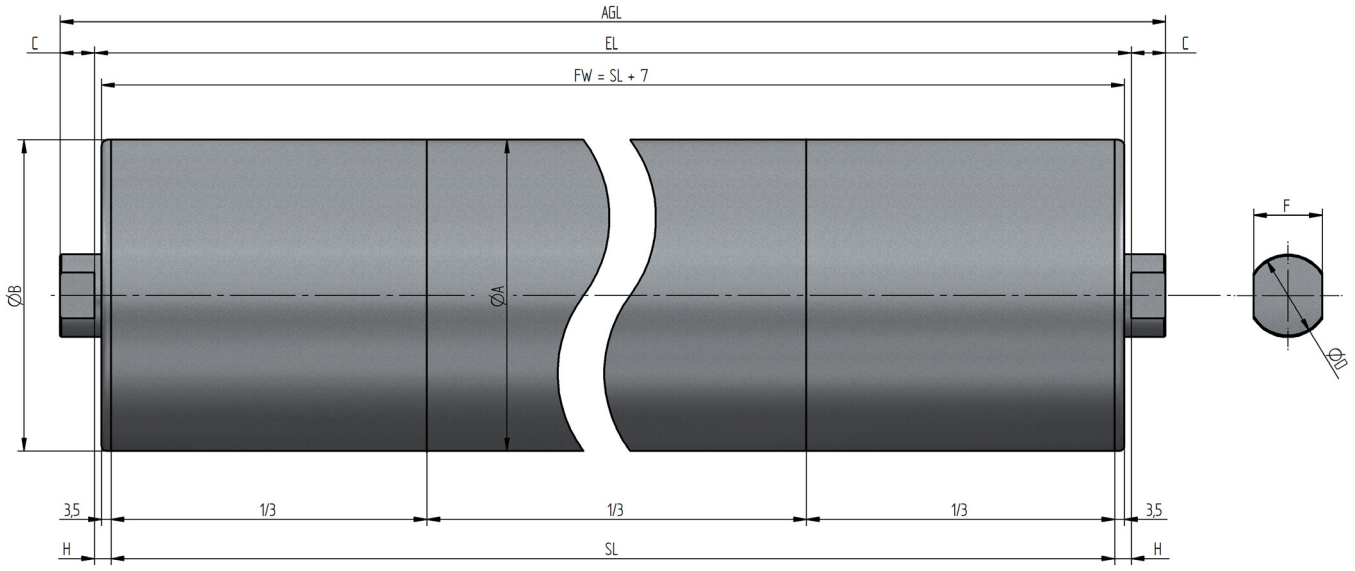
Nominal Diameter (mm)	82	**oil-free (no leakage)**
Nominal Power (kW)	0.07 - 0.12	steel or stainless steel construction
Nominal Force (N)	6 - 922	hardened steel planetary gear
Nominal Torque (Nm)	0.23 - 37.8	with cable gland
Nominal Speed (m/min)	705 - 1	maintenance free
Nominal Speed (m/s)	11.7 - 0.02	
Nominal Speed (U/min)	2,735 - 6	

Drum motors listed on the following pages are available with short lead times.

Technical Data

Type of motor	asynchronous squirrel-cage motor
Connection	mains operation or frequency inverter
Voltage	230 / 400 V ± 5 % 50 Hz (alternatives available on request) single or dual voltage (Δ/Y)
Motor winding insulation class	F
Thermal protection	thermal switch
Temperature range	+5 °C to +40 °C (standard) for operation with belt low temperature range to -25 °C (optional)
Protection class	IP66 (standard), IP62 or IP69K optional
Electrical connection	cable shielded 4 x 0.5 qmm + 2 x 0.25 qmm (single voltage) 7 x 0.5 qmm + 2 x 0.25 qmm (dual voltage)

Dimensions



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Dimensions Shell

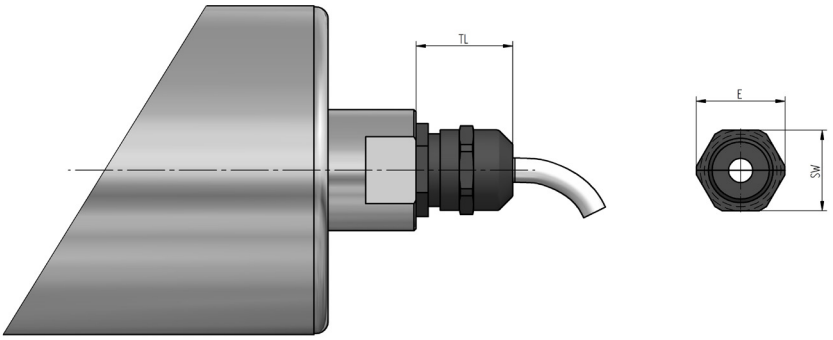
Type	ØA (mm)	ØB (mm)	shell length max.* (mm)
crowned	81.5	80.5	900
cylindrical	81.0	81.0	900
cylindrical with key	81.7	81.7	900

*longer motors available on request

Dimensions Shaft

	ØD (mm)	F (mm)	C (mm)	H (mm)	cable gland	voltage available
Standard	30.0	25.0	12.5	6.0	M20	single or dual voltage
Option	25.0	20.0	12.5	6.0	M16	single or dual voltage
Option	17.0	13.5	12.5	6.0	M12	single voltage

Dimensions Cable Connection



	SW (mm)	E (mm)	TL (mm)
M20 Brass / Stainless Steel	24	27	27-30
M16 Brass	20	22	26-28
M16 Stainless Steel	22	24	26-28
M12 Brass	16	18	26-28
M12 Stainless Steel	17	19	26-28

Construction / Material variants

Component	**Variants**	**Standard**	**Option**
Tube	crowned	Steel	Stainless steel
	cylindrical	Steel	Stainless steel
	cylindrical with key	Steel	Stainless steel
	flat rubber lagging	Steel	Stainless steel
	profiled rubber lagging	Steel	Stainless steel
	sprocket	Steel	Stainless steel
Shaft		Steel	Stainless steel
Cover	laser engraved nameplate	Steel	Stainless steel
Labyrinth seal		Galvanised steel	Stainless steel A2
Electrical connection	straight cable gland	Brass	Stainless steel A2
	angled cable gland	Steel	Stainless steel A2

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Motor variants

MTM82-0.07-2

Rated values refer to the drum tube						
Power	**Rotational Speed**	**Linear Speed**		**Torque**	**Belt pull**	**Min. tube length**
kW	**RPM**	**m/min**	**m/s**	**Nm**	**N**	**mm**
0.07	326	84	1.40	1.8	43	260
	218	56	0.93	2.6	63	280
	163	42	0.70	3.5	84	280
	131	34	0.56	4.3	105	280
	82	21	0.35	6.9	169	280
	65	17	0.28	8.6	211	280
	44	11	0.19	12.4	303	300
	26	7	0.11	20.7	505	300

MTM82-0.12-2

Rated values refer to the drum tube						
Power	**Rotational Speed**	**Linear Speed**		**Torque**	**Belt pull**	**Min. tube length**
kW	**RPM**	**m/min**	**m/s**	**Nm**	**N**	**mm**
0.12	342	88	1.47	3.2	79	300
	228	59	0.98	4.7	116	320
	171	44	0.73	6.3	154	320
	137	35	0.59	7.9	193	320
	85	22	0.37	12.6	308	320
	68	18	0.29	15.8	385	320
	46	12	0.20	22.7	553	330
	27	7	0.12	37.8	922	330

Motor data

Motor		**MTM82-0.07-2**	**MTM82-0.12-2**
Nominal power [kW]	P_N	0.07	0.12
Pole pairs		1	1
Nominal rotational speed [min^{-1}]	n_N	2,610	2,735
Connection		Δ/Y	Δ/Y
Nominal voltage [V]	U_N	230/400	230/400
Nominal frequency [Hz]	f_N	50	50
Nominal current per phase [A_{rms}]	I_N	0.40/0.23	0.66/0.38
Power factor	cos φ	0.78	0.68
Efficiency	η	0.57	0.59
Rotor inertia [kgcm²]	J_R	0.9	1.7
Ratio starting current - nominal current	I_A/I_N	2.9	2.9
Ratio starting torque - nominal torque	M_A/M_N	2.1	2.1

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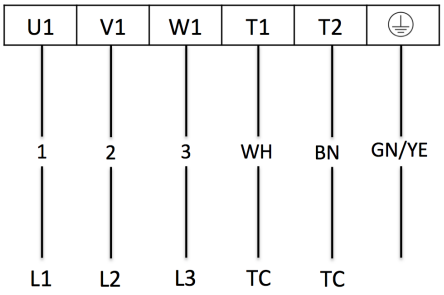
Cable specifications

Power cable

	Single voltage	Dual voltage
Construction	4 x 0.50 mm² + (2 x 0.25 mm²)C shielded	7 x 0.50 mm² + (2 x 0.25 mm²)C shielded
Voltage	600 V (0.5 mm²)	600 V (0.5 mm²)
Sheath material	PUR	PUR (TPE-U)
Outer diameter	7.6 mm (+/- 0.25)	7.7 mm (+/- 0.25)
Sheath colour	orange (similar to RAL 2003)	orange (similar to RAL 2003)
Temperature range (fixed in place)	-50 °C to +105 °C	-50 °C to +105 °C
Minimum bending radius (fixed in place)	7.5 x D	7.5 x D
flame retardant	yes	yes
halogen free	yes	yes
oil resistant	yes	yes
UL	AWM STYLE 21928/11559 105 °C 600 V	AWM STYLE 21928/11559 105 °C 600 V

Pin assignment single voltage

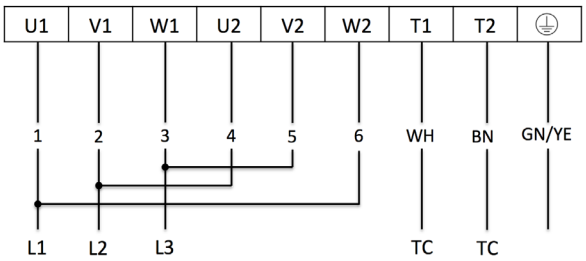
Colour/Code	Function
black/1	U1
black/2	V1
black/3	W1
green-yellow	PE
brown	thermal protection
white	thermal protection



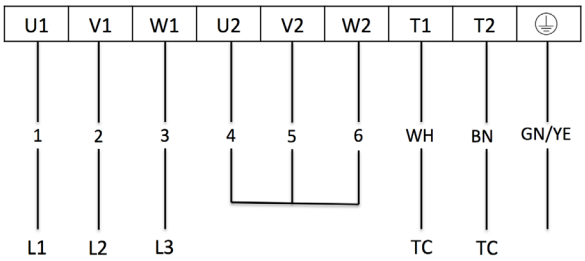
Pin assignment dual voltage

Colour/Code	Function
black/1	U1
black/2	V1
black/3	W1
black/4	U2
black/5	V2
black/6	W2
green-yellow	PE
brown	thermal protection
white	thermal protection

Connection Δ (direction of rotation: clockwise, seen from cable side)



Connection Y (direction of rotation: clockwise, seen from cable side)



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Thermal protection

The MTM drum motor is fitted as standard with a bimetallic thermal protector (normally closed contact).

The thermal switch has to be connected in series with a suitable contactor or relay, so that the motor supply voltage is safely switched off when the switch trips.

Thermal protector, technical data

Rated voltage AC	**250 V**		
Rated current AC (cos φ = 1)	2.5 A	Lifetime (cycles)	10,000
Rated current AC (cos φ = 0.6)	1.6 A	Lifetime (cycles)	10,000
Max. switching current AC (cos φ = 1)	6.3 A	Lifetime (cycles)	3,000
Rated voltage DC	**12 V**		
Max. switching current DC	40 A	Lifetime (cycles)	10,000
Contact resistance	< 50 mΩ		