

EXPLOSION-PROOF MOTOR DRIVEN CABLE REELS MCR



MCR ELBE motor driven cable reel is specially designed and manufactured for mobile feeding power systems. The feeding is realized by low voltage electrical cables. The mobile systems are generally overhead cranes or translating working machines, used in all kinds of environment, such as ports, steelworks, constructions, lift and transports plants. This means that this machine has always to be integrated with other machines as a complement. For this reason it is normally controlled by the machine it is integrated with; rarely, it is equipped with an independent control panel.

APPLICATION	CATEGORY	PROTECTION	EX PROTECTION CLASS
Zone 1	II 2 G	Gas	Exde IIB T4
			Exde II C T4
ZONE 2	II 3 G	Gas	Exde II B T3
ZONE 21	II 2 D	Dust	ExtD A21 IP66
ZONE22	II 3 D	Dust	ExtD A22 IP66

GENERAL PROPERTIES

- Environment outdoor
- Working temperature -15°C +40°C
- Altitude max 1500 O.S.L.
- Fixing point by four holed painting

MOTORS TORQUE STANDARD

- Three phase electric torque motor IP55
- Torque 2, 3, 4.5, 6.8 Nm self-ventilated (Option servo-ventilated)
- Torque 10, 12, 17, 22, 35 Nm servo-ventilated

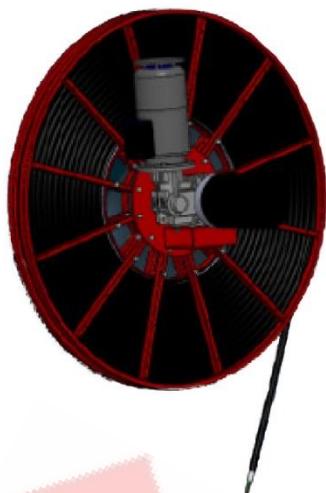
ELECTRIC COLLECTOR/STATOR LOW VOLTAGE

- Protection IP65
- Power voltage from 691Vac up to 400A
- Auxiliary and signals/can bus up to 42 rings
- Mixed power plus auxiliary/signals

STANDARD CABLE REEL



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- Gearbox support aluminum or cast-iron high resistance casing red painted. Special casehardened and ground steel gears. High resistance steel shafts. Lubrication for life.

- Electric motor torque voltage 230/400Vac here-phase 50HZ. Protection IP55, class H isolation. Die cast aluminum casing. Painted black. Stationing brake disk with two braking surfaces (asbestos free). Protection timing case painted bolts and nuts.

- Electric collector outside the drum. Cast alloy bronze power rings, brass auxiliary rings, gold-plating or silver plating signal rings. Power and auxiliary copper-electro graphite brushes, signals silver-graphite brushes. Plastic reinforced by fiber glass insulators.

OPTIONAL

Special motor torque – electrical with special voltages up to 660Vac three phase

- Electrical with tropicalisation T° -15° +40° / HR 90%

- Servo-ventilation on 2, 3, 4.5, 6 Nm
Limit switch with four adjustable positions
Heating from 100W to 200W pre-wired

1- BLOCK PHASE

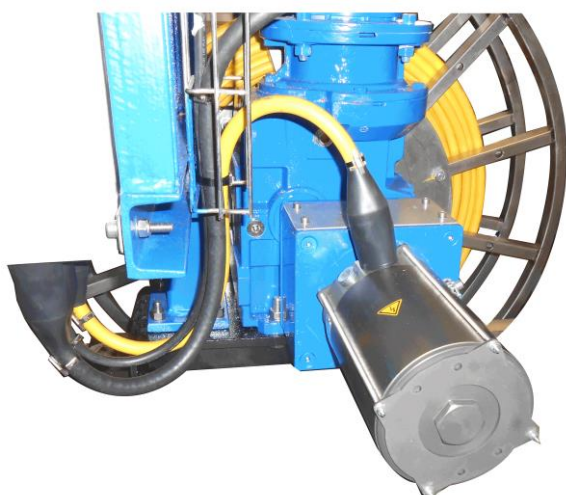
During the block stage, the motor can be either not supplied (long block), or being supplied along the winding direction (short block) allowing the system to slip.

2- UNWINDING PHASE

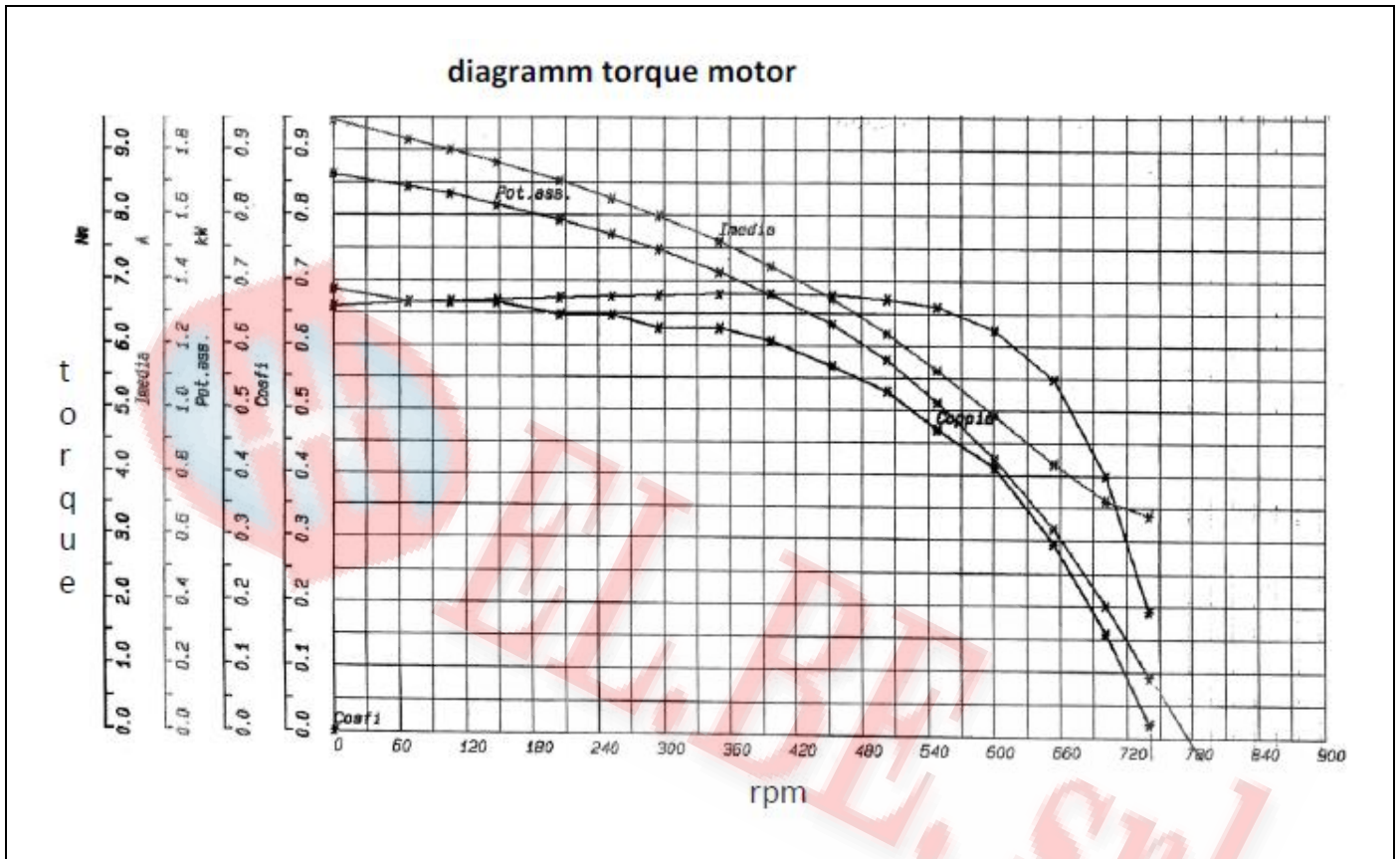
During the unwinding phase, the motor is supplied along the cable in unwound trough traction by the operating machine.

3- WINDING PHASE

During the winding phase, the motor is supplied along winding. The torque motor can operate on a continuous basis (100%) without being damaged, since it can resist temperatures of 100°C and above.



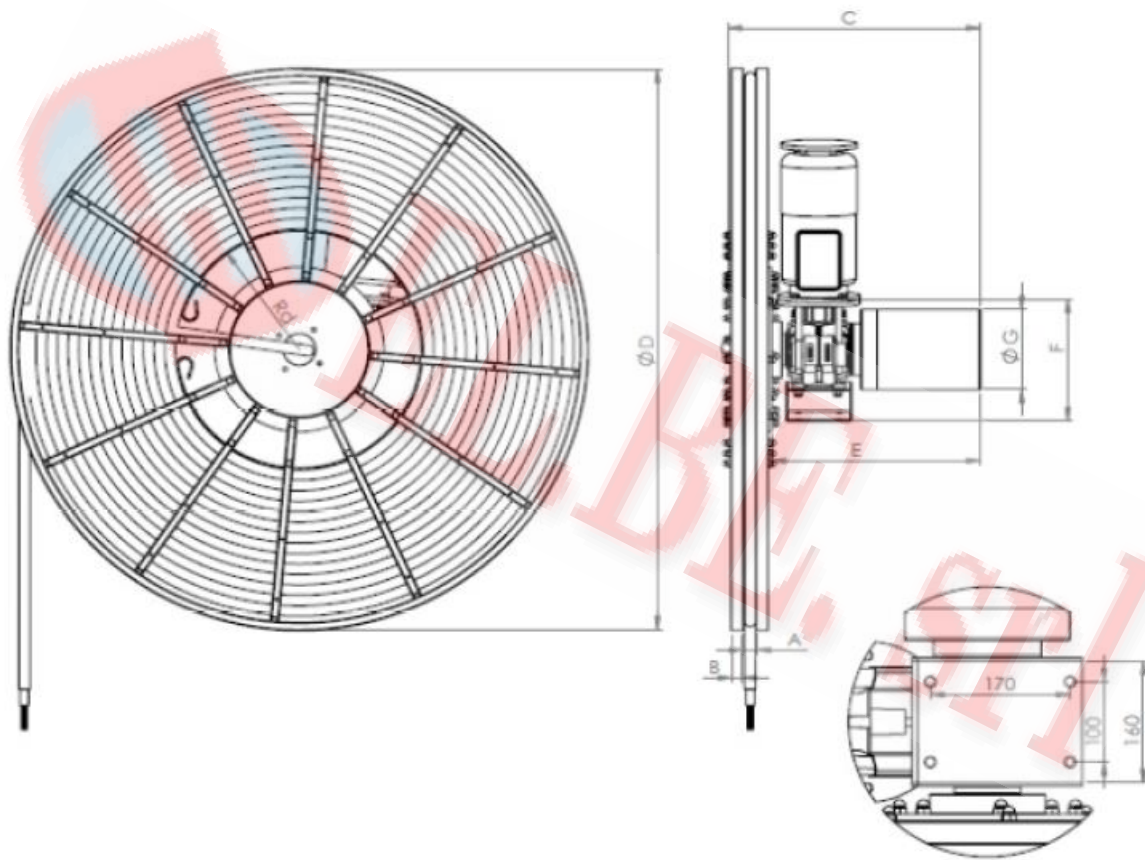
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HORIZONTAL STANDARD SIZE 03D



MACHINE CODE				D	Rd	A	B	C	E	F	G	
MCR	480	D	2320	612	1200	300	30	30	628	517	310	200
MCR	480	D	2320	614	1400	300	30	30	628	517	310	200
MCR	480	D	2330	616	1600	300	40	30	628	517	310	200
MCR	480	D	2330	618	1800	300	40	30	628	517	310	200
MCR	480	D	2830	820	2000	400	60	30	628	517	310	200
MCR	480	D	2845	822	2200	400	60	30	628	517	310	200
MCR	4100	D	2330	612	1200	300	30	35	628	517	310	200
MCR	4100	D	2330	614	1400	300	30	35	628	517	310	200
MCR	4100	D	2345	616	1600	300	40	35	628	517	310	200



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MCR	4100	D	2860	822	2200	400	60	35	628	517	310	200
MCR	4150	D	2345	614	1400	300	30	40	628	517	310	200
MCR	4150	D	2345	616	1600	300	40	40	628	517	310	200
MCR	4150	D	2360	618	1800	300	40	40	628	517	310	200
MCR	4150	D	2860	820	2000	400	60	40	628	517	310	200
MCR	4150	D	2860	822	2200	400	60	40	628	517	310	200

TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS

- Modular slip ring
- Sizes under H 240
- Suitable for analogue-digital auxiliary
- Power up to 100A for way
- Mixed signal plus power plus can bus
- Operating voltage max 400Vac -110Vdc
- Test voltage 1000Vac
- Intensity max current 20A continuous duty
- Contact resistance wire/ring <20 mOhm
- Protection IP67 standard
- Maximum operating speed 12rpm/1
- Mounting position vertical/horizontal
- Operating temperature -40°C +85°C
- Direction of rotation CW/CCW

CONSTRUCTION STANDARDS

- Anodized aluminum body collector
- Ring collector brass/nickel-plated, silver-plated brass/gold signal
- Power friction wire: wire in beryllium copper/nickel, beryllium copper/silver/gold signal
- Mechanical bolts and steel
- Rotating shaft of two ball bearings sealed and lubricated for life
- Cable wiring cables multipolar/unipolar (spiral sheath)
- Rating plate on the head side of the body

REFERENCE STANDARDS

- Standards EN 60309-1-2 plugs, socket-outlets and couplers for industrial purposes
- Machinery directive 2006/42 Annex B
- Standards EN 60204-1 for electrical systems on board
- CE marking

STANDARD EN 60947-1 LOW-VOLTAGE SWITCH GEARAND CONTROL GEAR PATRT 1: GENERAL RULE



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N° STATOR	m CABLE	N° ROTOR	QUALITY CONTACT	CABLE SECTION (mm ²)	A. (20°C)	VCA/ VDC	DESCRIPTION
1	2,5	1	CU+be/Ni & Bz/Ni	1X25	80	400Vva/110Vd c	Y/G
2	2,5	2	CU+be/Ni & Bz/Ni	1X25	80	400Vva/110Vd c	POWER N°1
3	2,5	3	CU+be/Ni & Bz/Ni	1X25	80	400Vva/110Vd c	POWER N°2
4	2,5	4	CU+be/Ni & Bz/Ni	1X25	80	400Vva/110Vd c	POWER N°3

INSTALLATION AND WIRING

The SRH slipring has to be installed only by qualified personnel in compliance with current safety standards. Power to the machine must be turned off before carrying out cabling. Connections are to be made in compliance with the wiring scheme of the controlled equipment. After installation has been completed, the prolonged contact with oils and acids when using the equipment, as these may damage the products.

- 1) Using the locknuts, attach the central pipe to the minimum 3mm thick plate with a central hole of $\frac{3}{4}$ " \varnothing (using the reducing cable clip on the nuts). As an alternative the central pipe can be attached to a plate with a threaded hole of 1", 1.5mm pitch using the locknuts as jam nuts
- 2) Rotation is achieved thanks to 4 \varnothing 13mm pivots on the cover at a distance of 100mm from each other. We recommend the coupling to be made with slack to take up any possible runout during rotation. Rotation can also be achieved by attaching the cover using the 4 pivots, thus enabling the central pipe to rotate by (thanks to a suitable coaxial joint)
- 3) The cables are connected to the brushes through the pipe union on the superior flange. Please ensure that the wires do not interfere with any moving parts. The rings are connected to the terminal board through the pipe union
- 4) Please check the equipotential of any surfaces not generally recommended to be used under tension, and the ground connection using cables provided

MAINTENANCE

A program of periodical maintenance is required to be carried out to ensure that the PRP slipring is kept in perfect working order. All maintenance is to be effected by qualified personnel using only original spare parts.

In particular:

- 1) Disconnect from power source and wait until the internal parts have cooled down
- 2) Remove the mobile semi-covers
- 3) Copper-graphite brushes execution: check the brushes for wear and tear, and check that they fit properly to the rings
Blade brushes execution: check the brushes and rings for wear and tear
- 4) Copper-graphite brushes execution: remove copper-graphite dust with de-humidified compressed air or a clean brush
Blade brushes execution: remove dust or grease again with a suitable lubricant
- 5) Check tightness of cables



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6) Check that the cover seal is in good condition

7) Replace the mobile semi-covers

Please note that the guarantee does not cover any equipment whose parts have been modified and tampered.

