COMOT

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Technical Catalog

CMTD SERIES

LOW VOLTAGE DIRECT CURRENT MOTOR SERIES

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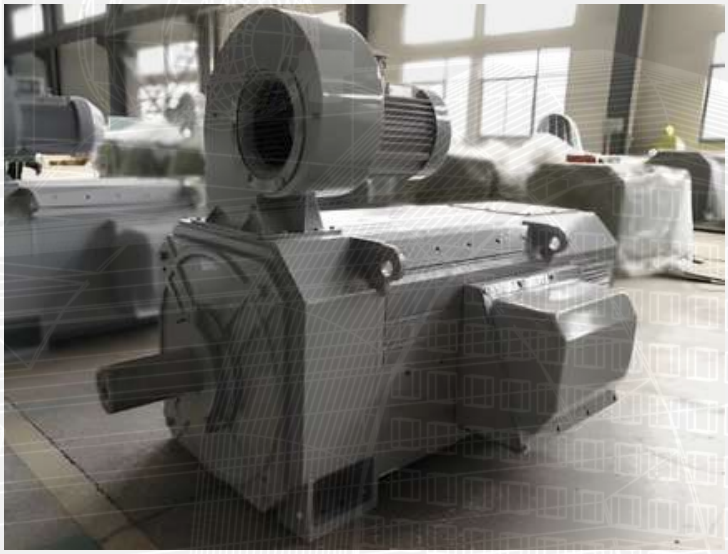
LOW VOLTAGE DC MOTORS

Three Phase Direct Current Motors



CMTD series DC motors are based on a flexible and standardized design platform that allows various cooling types, degrees of protection, mounting arrangements. This uniform construction ensures optimized production costs while providing high reliability and long service life.

The CMTD series is specifically designed for applications requiring high starting torque and precise speed control, such as extruder drives, crane and hoist drives, conveyor systems, roller and winder drives, paper and packaging machine drives, test benches, as well as drives for presses, kneading machines, and mixers.

Typical industries and applications include the paper industry, plastic industry, steel industry, rolling mills, and hoisting and lifting systems, where stable operation under dynamic and heavy-duty conditions is essential.

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DC Motor
Product Code Selection

Brand Code	Motor Power	Efficiency Class	Base Speed	Voltage	Cooling System	Ins. / Temp. Class	Service Factor	Other Options
CMTD	--- 0175	--- 00	--- 250	--- 001	--- C02	--- T01	--- 010	--- OP01
1	2	3	4	5	6	7	8	9

1 Product Family

CMTD	Direct current motor code

2 Motor Power kW

0160	160 kW
0175	175 kW
0185	185 kW
0200	200 kW
0132	250 kW
0160	160 kW
0200	200 kW
0250	250 kW
0315	315 kW
0355	355 kW
0400	400 kW
0450	450 kW
0500	500 kW
0560	550 kW
0630	630 kW
0710	710 kW
0800	800 kW
0900	900 kW
0XX0	Special Power Requests

3 Efficiency Class

00	IEC

4 Base Speed

00	Default
200	200rpm
250	250rpm
300	300rpm
350	350rpm
400	400rpm
450	450rpm
500	500rpm
650	650rpm
700	700rpm
750	750rpm
850	850rpm
900	900rpm
1000	1000rpm
1200	1200rpm
1500	1500rpm

5 Voltage

001	400 V	002	500 V	003	690 V
		004	720 V		

6 Cooling System

C00	IC 06
C01	IC 17
C02	IC 37
C03	IC 86W
C04	IC 666

7 Ins. / Temp. Class

T01	CL-F / B (155°C / 130°C)
T21	CL-H / F (180°C / 155°C)

8 Service Factor

000	SF=1.00
010	SF=1.10
015	SF=1.15
020	SF=1.20
025	SF=1.25

9 Other Options

OP01 --- Brake	OP02 --- PT100 - windings & bearings	OP03 --- Insulated Bearings	OP04 --- Encoder
OP05 --- Duty Type S1 to S9	OP06 --- IP Class: from IP23 to IP66	OP07 --- Vibration Sensor	OP08 --- Load Tests

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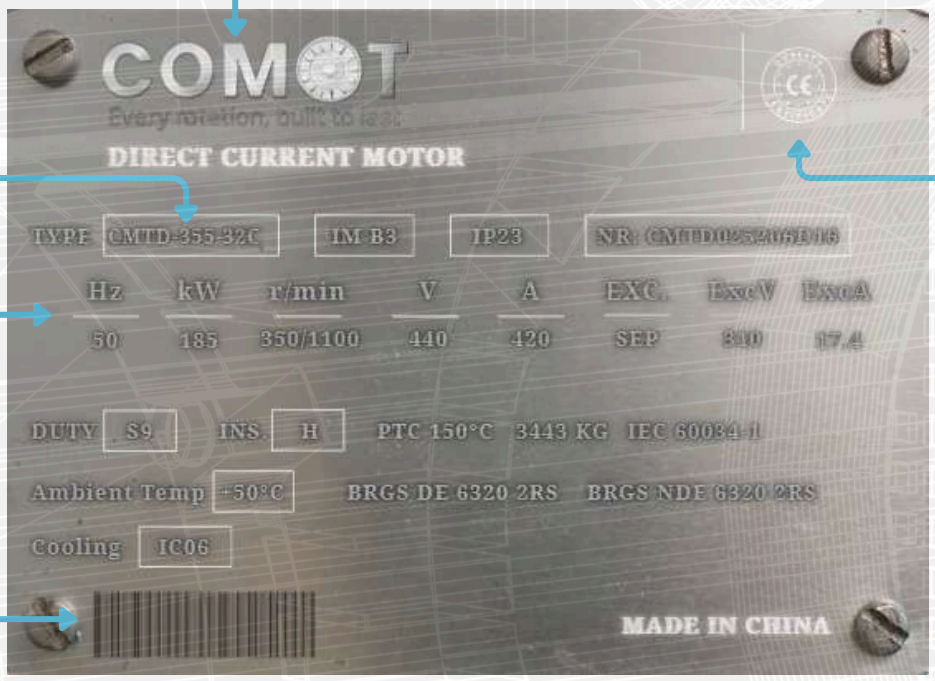
Rating Nameplate



Numbers	Description
1	BRAND NAME
2	MOTOR TYPE
3	TECHNICAL VALUES
4	PRODUCT BARCODE
5	CE NORM

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DIRECT CURRENT MOTORS

FEATURES

Re-Engineered Feature Set – Heavy-Duty DC Motors

- High operational efficiency with optimized electrical and magnetic design
- Heavy-duty bearing system engineered for high radial and axial loads
- Excellent dynamic performance with smooth speed control and low vibration levels
- Advanced insulation system in Class F / H for superior thermal endurance
- Long service life under continuous and demanding industrial duty cycles
- High overload capability with stable torque delivery across the full speed range
- Low noise operation supported by optimized ventilation and cooling airflow design
- Fully customizable configurations tailored to project-specific and application-driven requirements

STANDARDS

The motors comply with the latest European EN60034 and IEC60034 standards. Special versions (NEMA, CSA, etc.) are available upon request.

MOUNTING

The motors are available for the configuration of IM B3.

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DIRECT CURRENT MOTORS

PROTECTION

The motors are designed for CMTD Series as IP 23 degree of protection, respectively. Other degrees of protection are available upon request.

COOLING TYPE

DC motors are supplied as standard with the IC 37 cooling system, in which the heat generated inside the machine is effectively dissipated through natural air circulation over the motor frame. The robust mechanical design and optimized heat transfer surfaces ensure reliable thermal performance under continuous industrial operation.

Depending on application requirements and operating conditions, alternative cooling arrangements can be provided upon request. These include IC 06 for external forced ventilation, IC 17 for ducted air cooling systems, and IC 86W for water-to-air heat exchanger configurations.

Such options allow the motors to be adapted to demanding environments, restricted airflow installations, or applications requiring enhanced thermal control.

OVERLOAD CAPACITY

Heavy-duty DC motors for rolling mill applications are designed to withstand high overload conditions, delivering up to 150% of rated torque for 60 seconds and up to 200% of rated torque for short-time peak loads, subject to thermal limits and cooling arrangement.

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DIRECT CURRENT MOTORS

INSULATION

The motor winding, designed for enhanced environmental resistance, is produced according to temperature class F and impregnated using the VPI (Vacuum Pressure Impregnation) process.

The thermal loading of the motors is kept within the limits of class B, providing an additional power reserve and contributing to slower insulation ageing.
If required, insulation systems in class H can also be supplied.

The winding structure is engineered to withstand very high mechanical forces, allowing the motor to restart safely against a remaining magnetic field of 100% after a power interruption.

The table below specifies the permissible temperature rise (ΔT*) and the maximum hotspot temperature (Tmax) in accordance with EN 60034-1.

Insulation Class	ΔT*	Tmax
B	80K	125 °C
F	105K	155 °C
H	125K	180 °C

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VIBRATION

Even in the standard configuration, the motors comply with vibration severity level N (normal). Vibration measurements are carried out with the motor running at no-load under rated voltage and frequency.

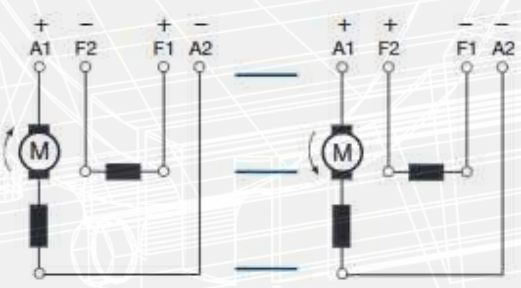
As delivered, the motors are balanced to the “half-key” quality level. Full-key balancing can be provided upon request.

NOISE LEVEL

Even in its standard version, the motor features a refined structure that ensures reduced acoustic emission levels.

The noise measurement is performed with the motor running at no-load under rated voltage and frequency conditions.

VOLTAGE RATINGS



The motors are available for the following nominal voltage ratings:

Nominal voltage range: 380-420 / 660-725 V

HEAD OFFICE

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