

ERDURUS

RELIABLE MOTOR SOLUTIONS



PERDURUS CAST IRON MOTORS





PERDURUS is the Australian subsidiary of Huifeng Motors Co., Ltd., a global electric motor manufacturer established in 1989 with more than 35 years of production experience supplying IEC motors across Europe, North America, and Asia-Pacific.

Our manufacturing facilities operate under a structured quality assurance system, with inspection and verification conducted from incoming materials through to final testing. Every motor leaves the factory to a fixed, defined specification — ensuring consistent performance, traceability, and compliance across the entire PER-IND range.

From our facility in Dandenong South, Victoria, we hold local stock of cast iron and aluminium motor ranges designed and built to IEC standards, with full compliance to Australian MEPS and AS/NZS requirements. Our motors are engineered for Australian operating conditions — including high ambient temperatures, outdoor installation, and the demands of continuous industrial duty. Local stock means fast dispatch, reduced lead times, and direct technical support for OEMs, pump manufacturers, contractors, and industrial customers across Australia.

Every motor in the Perdurus range is built to a high-specification industrial standard as default — IE3 efficiency, IP56 ingress protection, VPI insulation system, insulated bearings and shaft grounding protection on larger frame sizes, PTC thermistors from frame 132, and a 36-month manufacturer's warranty. These are not options or upgrades. They are standard.

Where standard configurations do not meet the application requirement, Perdurus offers custom motor builds to order — including special voltages, insulation classes, mounting arrangements, enclosure modifications, and efficiency upgrades to IE4, IE5, or IE6. Our factory engineering team works directly with customers to define the right solution for the application.

Local stock. Local support. Built to specification. Ready when you need it.



36-MONTH MANUFACTURER'S WARRANTY



Every PERDURUS PER-IND cast iron motor is backed by a **36-month manufacturer's warranty** from date of shipment.



COVERS DEFECTS IN
MATERIALS & WORKMANSHIP



VALID FROM
DATE OF SHIPMENT



APPLIES TO STANDARD
& CUSTOM BUILDS



FULL TERMS
AVAILABLE ON REQUEST

A **36-month** standard warranty is our commitment to long-term performance and total cost of ownership.

Perdurus Cast Iron Motors: High-Spec as Standard

The Perdurus Cast Iron Motor range is purpose-built for demanding applications across Australia and New Zealand. By incorporating elite technical features as default, we provide a motor that is ready for immediate service, eliminating the need for costly options or custom modifications.

- **VSD-Ready Protection:** We eliminate the primary cause of motor failure in modern plants. Frames 250–355 include Insulated NDE Bearings and Shaft Grounding Brushes as standard to protect against VSD-induced bearing currents.
- **Maximum Protection:** IP56 ingress protection and comprehensive PTC thermal protection across the entire range.
- **Project-Ready Design:** Dual terminal boxes (Main + Auxiliary) on larger frames for clean, professional wiring and simplified thermistor termination.
- **3-Year Confidence:** A standard 36-month manufacturer's warranty, reflecting our commitment to industrial durability.

While these enhancements are often treated as premium aftermarket modifications elsewhere, PERDURUS integrates high-tier industrial features as standard. This proactive design philosophy reduces installation complexity and significantly lowers the total cost of ownership.



WHY ENGINEERS SPECIFY PER-IND

High Specification as Standard. Not Optional Extras.

Every PER-IND motor leaves our warehouse fully equipped for modern industrial service. The features that protect your plant and your investment are built in — not quoted as extras.

Feature	PER-IND	Industry standard	Typical premium
VPI Winding Treatment	Standard	Often Not Standard	Standard
Insulated NDE Bearing	Standard 75kW+	Option	Extra Cost
Shaft Grounding Brush	Standard 75kW+	Option	Extra Cost
PTC Thermistors (1 Set)	Standard 132 Frame+	Option	Standard
PTC Thermistors (2 Sets)	Standard 280 Frame+	Option	Option
IP Rating	IP56 Standard	IP55 Standard	IP55 Standard
Manufacturer Warranty	36 Months	12 Months	18 Months
Australian Local Stock	Extensive Local Stock	Limited	Limited



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1. Technical Specification & Quality Assurance

Perdurus Cast Iron Motors are produced to a fixed standard industrial configuration, with defined mechanical, electrical, and protection characteristics established at the design stage. This ensures consistent suitability for industrial service, including continuous duty, inverter-driven operation, and demanding site conditions.

Manufacturing is supported by a structured quality-assurance system, with inspection and verification applied at incoming material, in-process assembly, and final testing stages. This provides consistent performance, traceability, and conformance across the PER-IND product range.

Mechanical & Construction

- TEFC cooling system, IC411
- Shaft with standard IEC keyway and tapped end hole
- Cast-iron frame and end shields for industrial duty
- Rotor dynamically balanced to ISO 1940-1 Grade G6.3 (half-key)

Electrical & Thermal

- VPI insulation system
- Insulation Class F with Class B temperature rise
- Standard supply: 380–415 V, 3-phase, 50 Hz
- IE3 Premium Efficiency in accordance with MEPS (GEMS)

Protection & Environment

- IP56 protection as standard
- Drain and breather arrangement suitable for industrial environments

Bearings & Reliability

- SKF or equivalent quality bearings
- Regreasable bearings from frame size 160 and above
- Insulated NDE bearing and shaft grounding brush as standard on frames 280–355

Terminal Box & Installation

- Metric cable glands supplied
- Terminal box rotatable in 90° increments
- Cast-iron main terminal box, top mounted
- Internal and external earthing terminals provided

2. Standards & Compliance

Perdurus Cast Iron Motors are designed, manufactured, and tested in accordance with applicable Australian/New Zealand and international standards governing electrical performance, safety, efficiency, and mechanical integrity.

Category	Reference Standards
Local Compliance	AS/NZS 1359, AS/NZS 60034, MEPS/GEMS (IE3)
Electrical / Performance	IEC 60034-1, -2-1, -8, -12, -30-1
Mechanical / Protection	IEC 60034-5 (IP), -6 (IC), -7, -9, -14
Dimensions & Balance	IEC 60072-1, ISO 1940-1 (G6.3)

3. Product Range Overview

Perdurus Cast Iron Motors are an industrial cast-iron motor platform designed for continuous-duty applications across a broad IEC frame range.

Range scope

- Frame sizes: 80–355
- Duty: S1 continuous
- Frequency: 50 Hz
- Insulation: Class F standard (Class H on request)
- Poles: 2, 4, 6, and 8
- Standard supply: 380–415 V, 3-phase
- Efficiency: IE3 standard (IE4 / IE5 / IE6 on request)

Voltage and Connection

Frames 80–100

- Connections: Δ – Δ / Y–Y // Y–Y
- Voltages: 220–240 / 380–415 V (50 Hz) // 440–460 V (60 Hz)

Frames 112 and above

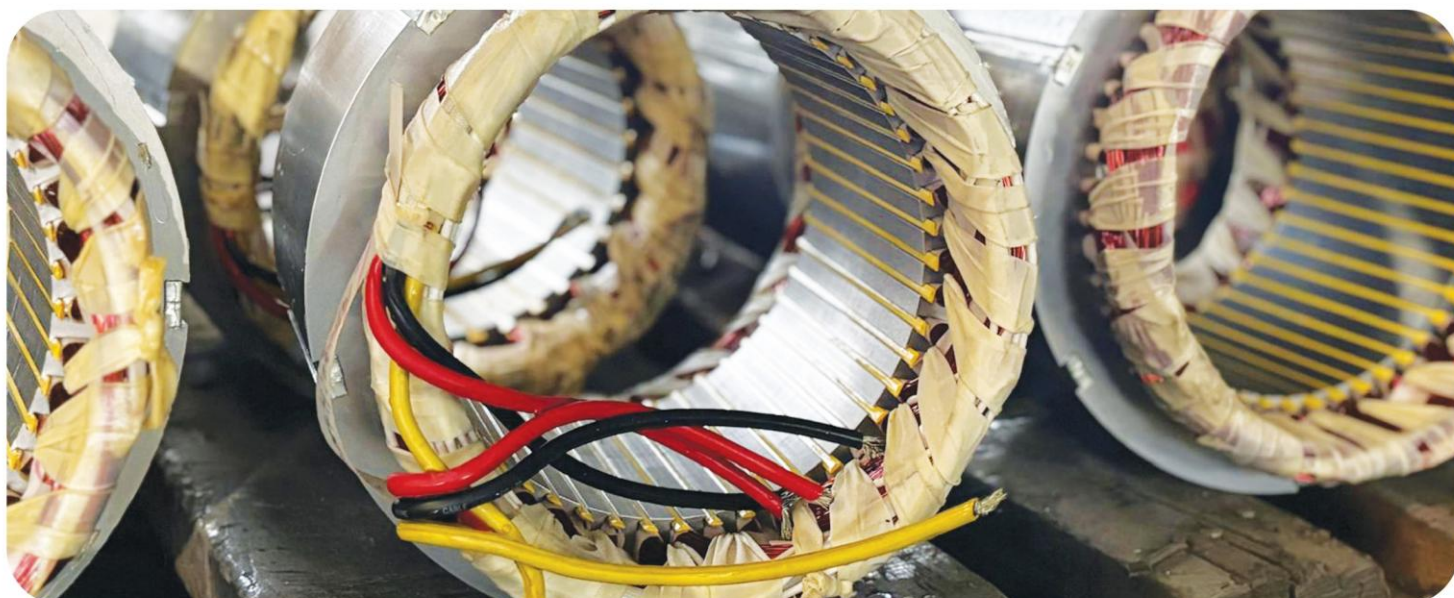
- Connections: Δ – Δ / Y–Y // Δ – Δ
- Voltages: 380–415 / 660–690 V (50 Hz) // 440–460 V (60 Hz)

Where higher efficiency classes or special configurations are specified, compliance is confirmed with the relevant standards.

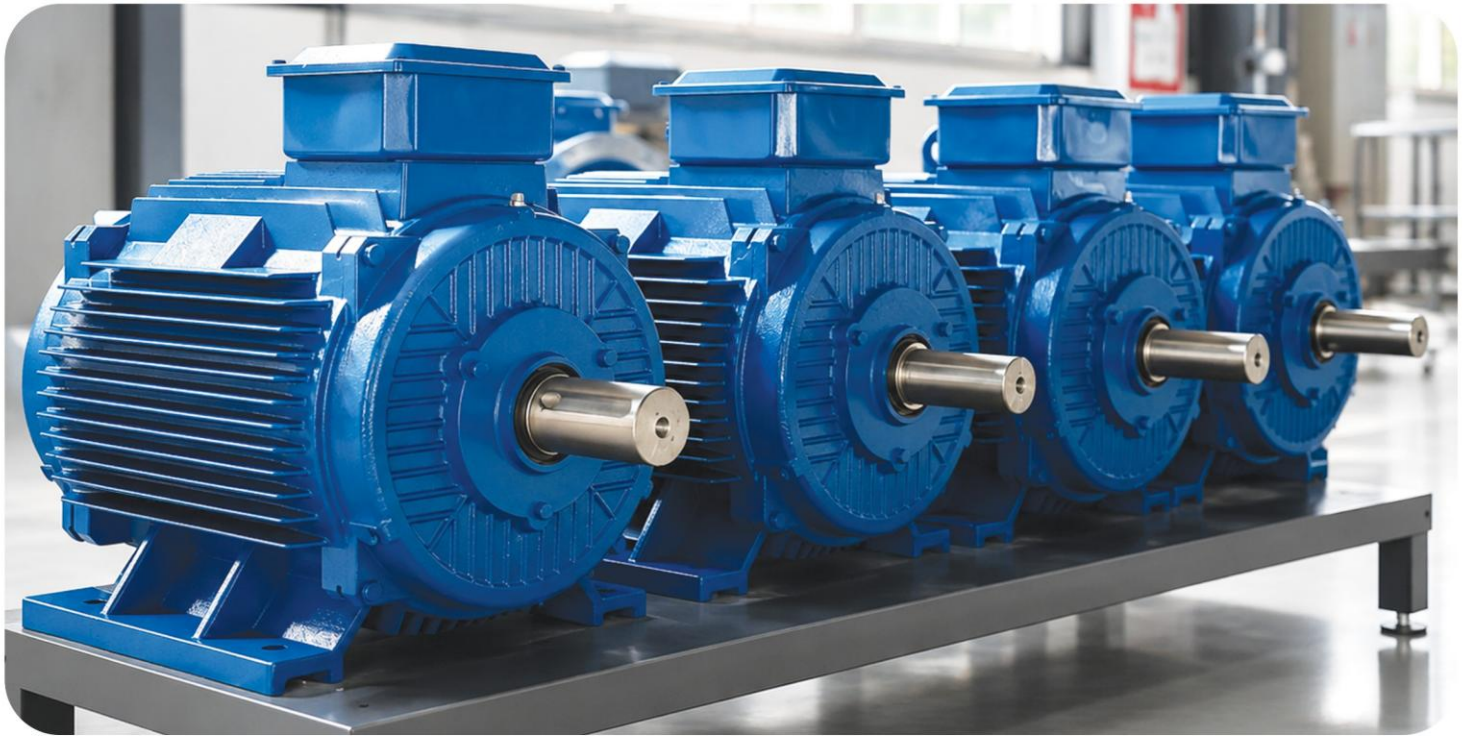
Mounting availability

IEC mounting configurations including B3, B5, B35, B14, and B34, subject to frame size and configuration.

Suitable for pumps, fans, compressors, gearboxes, conveyors, and general industrial machinery.



4. Motor Designation & Ordering Code



Each Perdurus Cast Iron Motor is identified by a structured designation used for ordering, manufacturing, and traceability.

Standard designation:

- PER-IND – Frame – Poles
- Example: PER-IND-200L-4

Mounting codes (IEC 60034-7):

- B3 · B5 · B35 · B14 · B34

Optional suffixes (on request):

- IE4 / IE5 / IE6
- H (Insulation Class H)
- INB (Insulated Non Drive Bearing)
- SB (Shaft Brush)
- 2T (2 Sets of Thermistors)
- HV (High Voltage)
- SP (Space Heater)

Complete example:

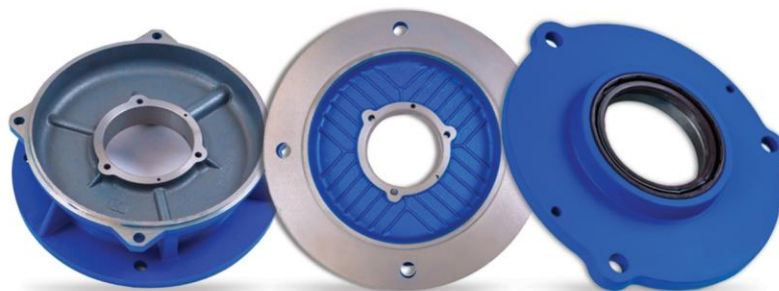
- PER-IND-315L-4-B35-IE4-H-INB-SB

All motors are supplied to the PER-IND standard build unless options are explicitly specified and confirmed.

5. Mounting Configuration

Foot Mounted	IM 1001 (IM B3)		IM 1051 (IM B6)		IM 1061 (IM B7)		IM 1071 (IM B8)		IM 1011 (IM V5)		IM 1031 (IM V6)	
	Horizontal shaft Foot mounted		Horizontal shaft Wall mounted, Feet on left (viewed from D.E.)		Horizontal shaft Wall mounted, Feet on right (viewed from D.E.)		Horizontal shaft Ceiling mounted, Feet above motor		Vertical shaft Wall mounted, Shaft down		Vertical shaft Wall mounted, Shaft up	
Flange Mounted	IM 3001 (IM B5)		IM 3011 (IM V1)		IM 3031 (IM V3)		IM 3601 (IM B14)		IM 3611 (IM V18)		IM 3631 (IM V19)	
	Horizontal shaft D-type flange at D.E No feet		Vertical shaft D-type flange at D.E Shaft down, No feet		Vertical shaft D-type flange at D.E Shaft up, No feet		Horizontal shaft C-type flange at D.E No feet		Vertical shaft C-type flange at D.E Shaft down, No feet		Vertical shaft C-type flange at D.E Shaft up, No feet	
Foot / Flange Mounted	IM 2001 (IM B35)		IM 2011 (IM V15)		IM 2031 (IM V36)		IM 2101 (IM B34)		IM 2111		IM 2131	
	Horizontal shaft D-type flange at D.E Foot mounted		Vertical shaft D-type flange at D.E Shaft down, Wall mounted		Vertical shaft D-type flange at D.E Shaft up, Wall mounted		Horizontal shaft C-type flange at D.E Foot mounted		Vertical shaft C-type flange at D.E Shaft down, Wall mounted		Vertical shaft C-type flange at D.E Shaft up, Wall mounted	

6. Bearings & Lubrication



Perdurus Cast Iron Motors are equipped with rolling element bearings selected for industrial continuous-duty operation and variable speed drive compatibility.

Factory-Filled Grease (Standard):

Motors are factory-filled with high-temperature EP composite lithium grease, NLGI Grade 2.

Australian equivalent greases (do not mix greases without purging):

SKF LGHP 2 · Shell Gadus S3 V220C 2 · Mobilith SHC 100 · Castrol Spheerol EPL 2 · Fuchs Renolit LX-EP 2

Bearing Configuration & Re-Greasing Interval

Frame Size	Drive End (DE) Bearing	Non-Drive End (NDE) Bearing	VSD Bearing Protection	Lubrication Method	Re-Grease Interval*
80–132	Deep groove ball	Deep groove ball	—	Sealed / life-lubricated	Not required
160–250	Deep groove ball	Deep groove ball	75kW (250 frame)	Grease nipple provided	Every 4,000 h
280–355	Deep groove ball (NU roller DE available on request)	Insulated deep groove ball	Insulated NDE + shaft grounding brush (std.)	Grease nipple provided	Every 2,000–3,000 h

IEC Frame	Bearings	
	D.E.	N.D.E.
PID-132S	6208	6208
PID-132M	6208	6208
PID-160M	6309	6309
PID-160L	6309	6309
PID-180M	6311	6311
PID-180L	6311	6311
PID-200M/L	6312	6312
PID-225S/M-2	6313	6313
PID-225S/M-4,6,8	6313	6313
PID-250S/M-2	6316	6314
PID-250S/M2-2	6316	6314
PID-250S/M-4,6,8	6316	6314
PID-250S/M2-4	6316	6314
PID-280S/M-2	6317	6314
PID-280S/M2-2	6317	6314
PID-280S/M-4,6,8	6317	6317
PID-280S/M2-4	6317	6317
PID-315S/M/L-2	6317	6317
PID-315S/M/L-4,6,8	6319	6319
PID-355M/L-2	6319	6319
PID-355M/L-4,6,8	6322	6322

- Normal operating conditions: S1 duty, ≤40 °C ambient, clean environment.

Note

- Grease nipples are provided as standard from frame size 160 and above.
- Deep groove ball bearings are supplied as standard unless otherwise specified.
- For frame sizes up to 250, additional bearing protection for VSD compatibility is generally not required, in line with IEC guidance and PERDURUS recommendations.

7. Terminal Box & Cable Entry



Perdurus Cast Iron Motors are supplied with a robust terminal box arrangement designed for industrial environments.

- Main terminal box manufactured from cast iron
- Top-mounted as standard, rotatable in 90° increments
- Sealing designed to maintain IP56 protection

Cable Gland Configuration & Sizes

Frame Size	Main Terminal box cable entry holes	Frame Size	Main Terminal box cable entry holes
63	1 x M20 x 1.5	180	2 x M40 x 1.5
71	1 x M20 x 1.5	200	2 x M50 x 1.5
80	1 x M20 x 1.5	225S/M	2 x M50 x 1.5
90	1 x M20 x 1.5	250S/M	2 x M63 x 1.5
100	1 x M20 x 1.5	280S/M	2 x M63 x 1.5
112	1 x M25 x 1.5	315S/M	2 x M63 x 1.5
132	1 x M25 x 1.5	315L	2 x M63 x 1.5
160	2 x M32 x 1.5	335M/L	2 x M80 x 1.5

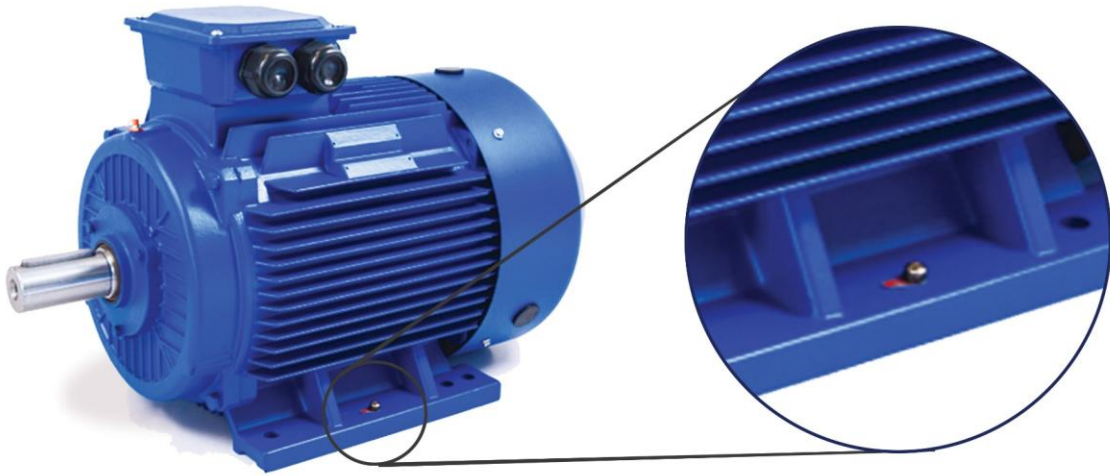
Note

- Terminal box allows 90° rotational positioning.
- Alternative hole quantities and thread sizes are available on request.
- All glands and accessories must match or exceed IP56 rating.

Auxiliary Terminal Box

- Frames 250 and above supplied as standard with auxiliary terminal box
- Two sets of thermistors provided (alarm and trip)

8. Earthing & Electrical Safety



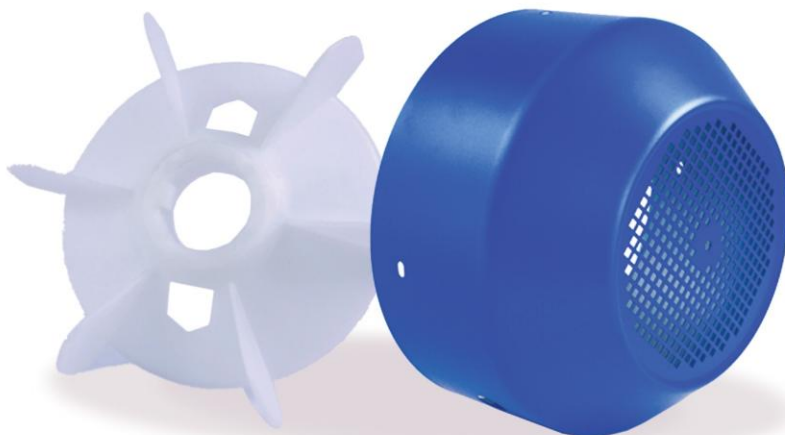
Perdurus Cast Iron Motors feature specified earthing arrangements to guarantee electrical safety and compliance with standards.

- Internal earth terminal provided inside the main terminal box
- External earth terminal provided on the motor frame
- Earthing must comply with applicable AS/NZS and IEC standards

Correct earthing is mandatory prior to energising the motor.

9. Cooling, Insulation & Thermal Protection

Perdurus Cast Iron Motors feature a controlled thermal system that enables continuous-duty operation, long-lasting insulation, and dependable performance in direct-on-line and inverter-fed configurations.



Cooling System

- Designed for S1 continuous duty
- Cooling method: IC411 (IEC 60034-6)
- Totally Enclosed Fan-Cooled

Insulation System

- Insulation Class H available on request
- Insulation Class F supplied as standard
- VPI Impregnation: Boosts dielectric strength, mechanical rigidity, and thermal cycling durability

Temperature Rise Philosophy

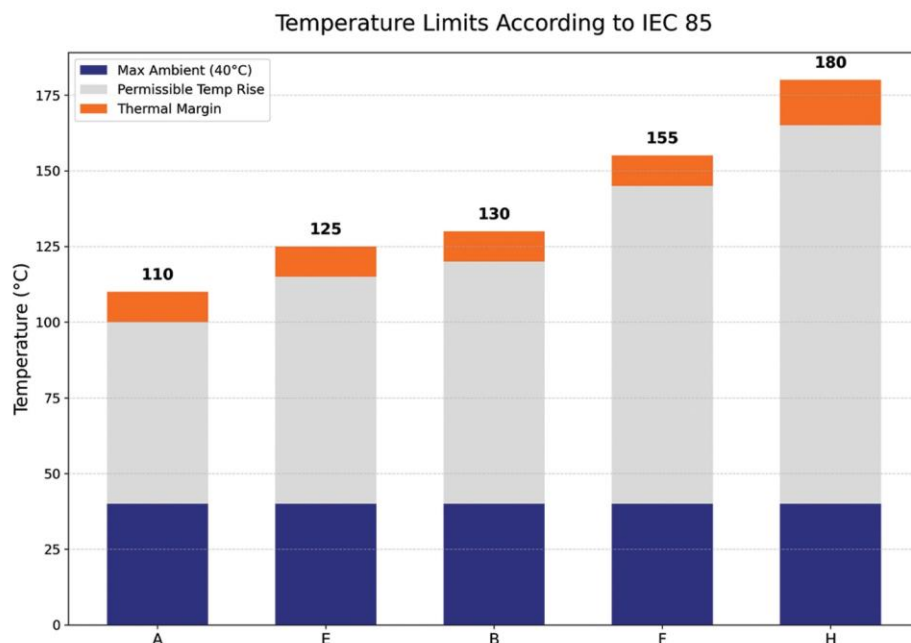
Perdurus Cast Iron Motors are designed with Class F insulation and operate at a Class B temperature rise under rated conditions. This approach reduces thermal stress on the windings, extends insulation service life, and enhances tolerance to overloads and VSD operation.

The relationship between insulation class, permissible temperature rise, and thermal margin is illustrated in the insulation class and temperature rise chart included in this catalogue (IEC reference conditions, 40°C ambient).

IEC Thermal Limits (Reference)

- Class B: 130 °C
- Class F: 155 °C
- Class H: 180 °C

Operating Class F insulation at Class B temperature rise provides a thermal safety margin, reducing insulation ageing in industrial service.



Thermal Protection

Perdurus Cast Iron Motors are equipped with PTC thermistors for stator temperature protection.

Frame sizes 132–250:

- One set of PTC thermistors supplied as standard, intended for over-temperature protection

Frame sizes 250 and above:

- Two sets of PTC thermistors supplied as standard: – One set for alarm/– One set for trip

For frame sizes 250, 280, 315 & 355, an auxiliary terminal box is supplied as standard, incorporating a dedicated terminal block for thermistor connections.

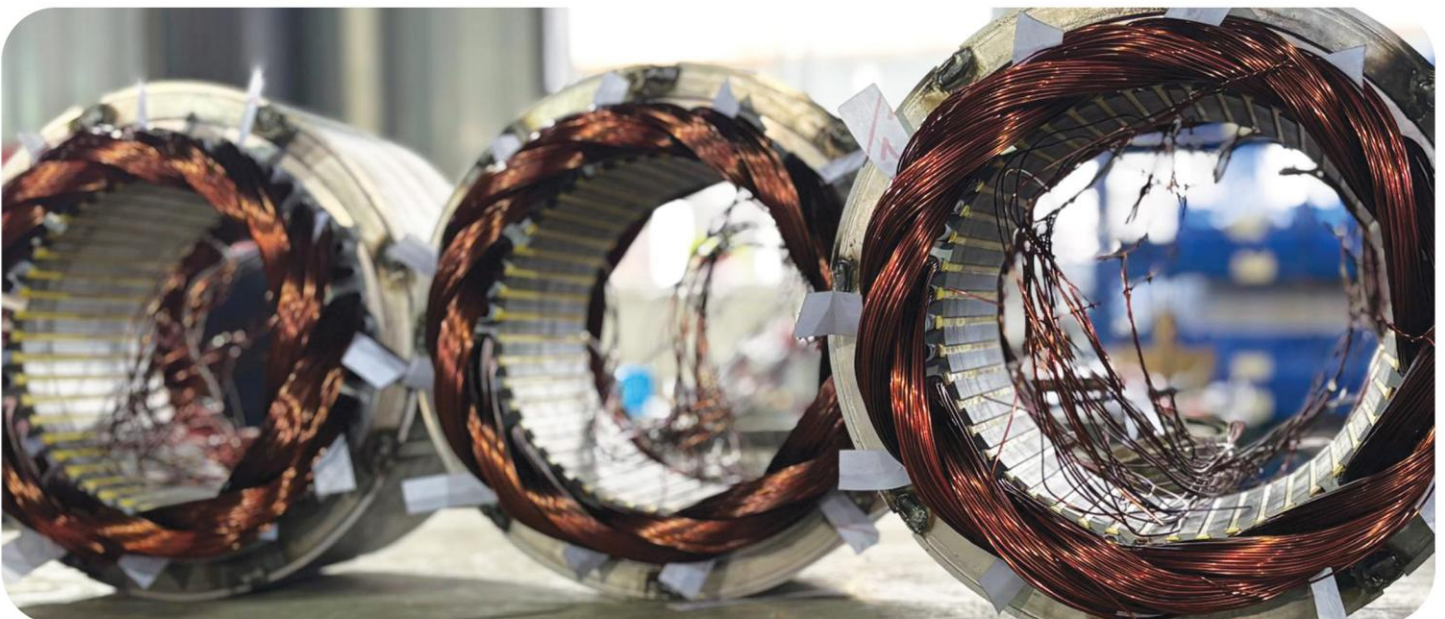
Standard Ambient Conditions & Insulation Requirements

Unless stated otherwise, all rated outputs shown in this catalogue correspond to continuous duty S1, in accordance with IEC 60034-1, under the following standard operating conditions:

- Ambient temperature: $-20\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$
- Installation altitude: Up to 1000 m above sea level
- Environmental condition: Non-condensing, standard industrial environments

In very humid or condensation-prone environments, the use of a space heater is recommended to minimise the risk of internal moisture accumulation during standstill conditions.

For operation outside these standard conditions, applicable derating factors must be applied to determine the maximum permissible output power (P_{max}).



10.Derating Factors — Ambient Temperature & Altitude

All rated outputs in this catalogue apply at standard conditions:

≤40°C ambient and ≤1000 m altitude. Where site conditions exceed these limits, apply the correction factors below to determine maximum permissible output power ($P_{max} = P_{rated} \times k_T \times k_A$).

● Table 1 – Ambient temperature correction factor k_T

Ambient temp (°C)	k_T factor	Max output (%)
≤ 40	1.00	100%
41 – 45	0.96	96%
46 – 50	0.92	92%
51 – 55	0.87	87%
56 – 60	0.82	82%
61 – 65	0.76	76%

● Table 2 – Altitude correction factor k_A

Altitude (m asl)	k_A factor	Max output (%)
≤ 1000	1.00	100%
1001 – 1500	0.97	97%
1501 – 2000	0.94	94%
2001 – 2500	0.90	90%
2501 – 3000	0.86	86%
3001 – 4000	0.82	82%

Table 1 | Standard rated condition — no derating required.
Highlighted rows: consult PERDURUS engineering for Class H insulation option (suffix H)

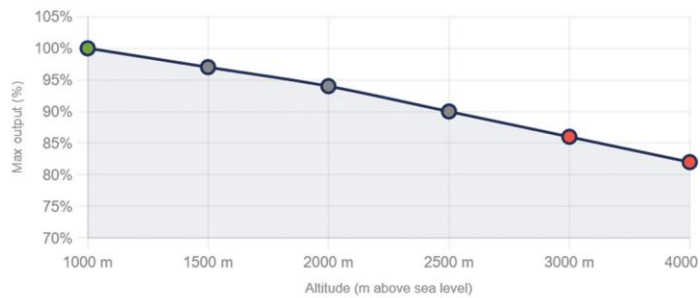
Table 2 | Standard rated condition — no derating required.
Highlighted rows: contact PERDURUS for engineering assessment before ordering.

Combined Derating Curves - $P_{max} = P_{rated} \times k_T \times k_A$

Fig 1 - Output vs. ambient temperature



Fig 2 - Output vs. altitude



Site: 50 °C ambient, 2000 m altitude. Motor ordered: PID-200L-4 (30 kW rated).

$k_T = 0.92 \times k_A = 0.94 = \text{combined factor } 0.865$

$P_{max} = 30 \text{ kW} \times 0.865 = 25.9 \text{ kW}$ — select next frame up (PID-225M-4, 37 kW rated) to run at rated load.

11.Degree of Protection (IP56)



The ingress protection rating defines protection against solid objects and liquids in accordance with IEC 60529.

Perdurus Cast Iron Motors are supplied with IP56 protection as standard.

- First digit 5: Dust-limited ingress with no harmful deposits
- Second digit 6: Protection against powerful water jets from all directions

This level of protection is suitable for typical industrial and outdoor environments.

INGRESS PROTECTION (IP) RATINGS			
FIRST NUMBER	PROTECTION AGAINST SOLIDS	SECOND NUMBER	PROTECTION AGAINST LIQUIDS
0	No protection	0	No protection
1	Objects over 50 mm (hand)	1	Vertically falling drops of water
2	Objects over 12 mm (finger)	2	Direct sprays up to 15° from vertical
3	Objects over 2.5 mm (tools and wires)	3	Direct sprays up to 60° from vertical
4	Objects over 1 mm (small tools and wires)	4	Sprays from all directions, limited ingress
5	Dust-limited ingress (no harmful deposit)	5	Low pressure jets of water from all directions, limited ingress
6	Totally protected against dust	6	Strong jets of water from all directions, limited ingress
		7	Temporary immersion (30 minutes) between 15 centimeters and 1 meter
		8	Long periods of immersion under pressure

12. Surface Protection & Paint System

PERDURUS Cast Iron Motors are finished with a high-performance industrial coating system.

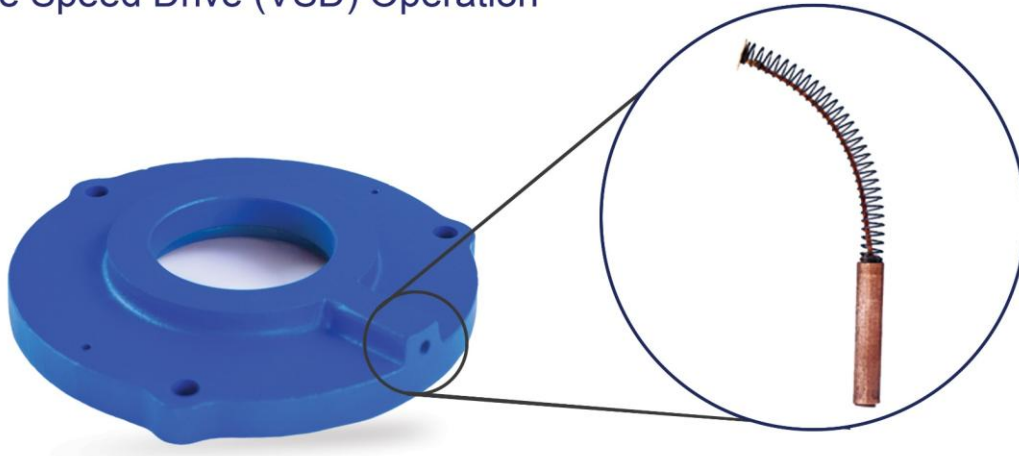
- Standard colour: RAL 5005 (IE3 series)
- Three layer coating system
 - Epoxy primer: 30–40 µm
 - Intermediate epoxy or enamel: 30–40 µm
 - Polyurethane (PU) topcoat: 40–50 µm
- Minimum total dry film thickness (DFT): approx. 130 µm

All motors are painted using a controlled, high-quality industrial paint booth.

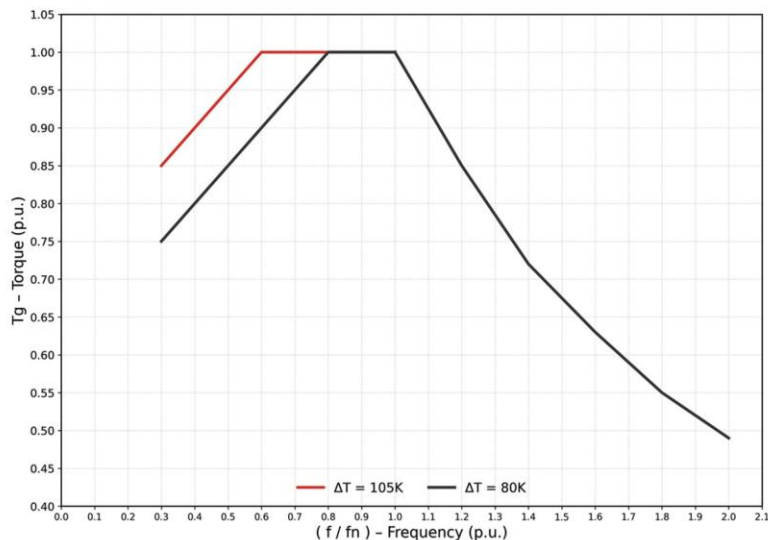
Alternative paint systems and colours are available on request.



13. Variable Speed Drive (VSD) Operation



Perdurus Cast Iron Motors are suitable for operation on PWM variable speed drives. In line with IEC 60034-17 guidance for inverter-fed machines, the available continuous torque under self-ventilated (TEFC) cooling is frequency-dependent and limited by permissible temperature rise. The adjacent curve shows the measured/validated continuous torque capability versus frequency without forced ventilation, including low-speed thermal derating and the field-weakening region above base frequency.



Bearing Current Mitigation (VSD Duty)

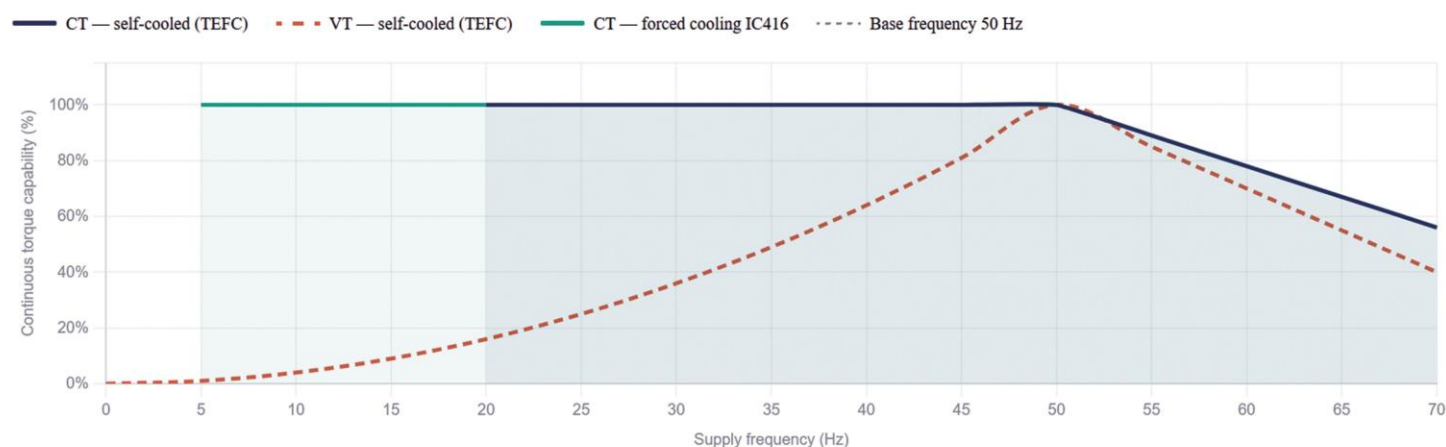
For IEC frame sizes 75kW (250) and above, Perdurus Cast Iron Motors are supplied as standard with:

- Insulated non-drive-end (NDE) bearing, and
- Shaft grounding brush fitted at the drive end (DE) Orange colour

to reduce the risk of VSD-induced bearing currents, consistent with the intent of IEC 60034-25.

For frame sizes below 250, additional bearing protection is typically not required when the drive system is correctly installed and earthed; however, suitability depends on the specific VSD, cabling and installation conditions

Continuous torque capability vs. frequency



- IC416 available frames 132–280 only

Table 3 — Minimum Continuous Operating Frequency by Load Type and Cooling Method

RPM equivalents shown for 4-pole reference ($n_s = 1500$ rpm at 50 Hz). CT self-cooled minimum of 20 Hz validated by Huifeng factory thermal type test per IEC 60034-17 (4-pole). For other pole counts, contact PERDURUS Engineering.

Frame size	CT — self-cooled (TEFC, IC411)			CT — forced cooling (IC416)			VT — self-cooled (TEFC, IC411)			IC416 availability
	Min Hz	Min RPM	Min Hz	Min Hz	Min RPM	Min Hz	Min Hz	Min RPM	Min Hz	
132 – 160	20	600	40%	2	60	4%	8	240	16%	Available 240V 1ph / 415V 3ph
180 – 225	20	600	40%	2	60	4%	8	240	16%	Available 240V 1ph / 415V 3ph
250 – 280	20	600	40%	2	60	4%	5	150	10%	Available 240V 1ph / 415V 3ph
315 – 355	20	600	40%	Not available	—	—	5	150	10%	Not available Consult PERDURUS

- **IC416 forced ventilation option (suffix FV)** : Independently powered external fan fitted to the non-drive end, providing constant airflow regardless of motor speed. Enables full rated continuous torque from 2 Hz (60 rpm, 4-pole equivalent) to 50 Hz base speed. Fan motor available in 240 V single-phase or 415 V three-phase supply — specify at time of order. Available on frames 132–280. Order suffix: add FV to designation, e.g. PER-IND-200L-4-B35-FV.

- **Constant torque (CT) applications** : Conveyors · Positive displacement pumps · Screw compressors · Mixers · Extruders · Hoists · Winders. Full rated torque required at all speeds — IC416 recommended for operation below 20 Hz.

- **Variable torque (VT) applications** : Centrifugal pumps · Fans · Blowers. Torque follows square law ($T \propto n^2$) reduced thermal load at low speed means self-cooled operation is suitable to much lower frequencies without IC416.

14. Nameplates & Identification

All Perdurus Cast Iron Motors are fitted with permanent nameplates to ensure clear identification, traceability, and compliance throughout the motor service life.

Nameplate Construction

- AISI 304 Aluminum (stainless steel)
- Laser-etched for permanent legibility
- Riveted securely to the motor frame

All nameplate data complies with IEC 60034-1 and matches the PERDURUS order specification exactly.

Main Motor Nameplate (All Frames)

Each motor includes, at minimum:

- Frame size
 - Power factor (PF)
 - Full-load current (A)
 - Bearing types (DE / NDE)
 - PER-IND model designation
 - Serial number and manufacture date
 - Efficiency class IE3 (100% / 75% / 50%)
- Speed (r/min)
 - Rated power (kW)
 - Voltage and frequency
 - Degree of protection IP56
 - Grease type (where applicable)
 - PTC thermistor data (where applicable)
 - Insulation Class F with Class B temperature rise

PERDURUS PER-IND IE3 CE		
TYPE YE3-200L-4	VOLTAGE 415 V	CURRENT 51.8 A
OUTPUT 30 kW	SPEED 1475 r/min	FREQUENCY 50Hz
PHASES 3~AC	CONNECTION 	INS.CL. F
COS Φ 0.86	IP 56 IC411	DUTY S1
EFF. 93.6 % (100%) 92.9 % (75%) 92.3 % (50%)	WEIGHT 264 kg	
AMBIENT -20~40 °C	GREASE TYPE /	
ALTITUDE ≤1000 m	BEARINGS DE 6312 / NDE 6312	
IEC 60034-1	SN. 20260208003	DATE 02.2026

Auxiliary Nameplate (Frames 280–355)

For frame sizes 280 to 355, an auxiliary nameplate is provided where required to identify dual PTC thermistor configuration, insulated bearing and shaft grounding features, and special executions (INB, SB, 2T, GN).

PTC THERMISTORS		TM 95300
Trip Temperature	140 °C	DO NOT
Alarm Temperature	130 °C	MEGGER
NDE Bearing: Insulated Bearing		
DE Bearing: Shaft Grounding Brush		

15. Motor Selection Guide

Correct motor selection ensures required performance, efficiency, and service life. This guide provides a quick reference followed by essential engineering relationships.

Engineering Formulas

Three-phase input power:

- $P_{in} \text{ (kW)} = \sqrt{3} \times V \times I \times PF / 1000$

Output power:

- $P_{out} = P_{in} \times \eta$

Torque:

- $T \text{ (Nm)} = 9550 \times P_{out} \text{ (kW)} / n \text{ (r/min)}$

Synchronous speed:

- $n_s = 120 \times f / p$

Rated motor speed accounts for slip and is stated on the nameplate.

Motor Selection Parameters – Critical

Parameter	Key Considerations	Why it's Important
Power Output (kW / HP)	Required Load Startup Torque Application Type	Ensures Motor Meets Demand Without Oversizing
Voltage & Frequency	Supply Voltage (e.g. 240V / 415V) Frequency (50Hz / 60Hz)	Prevents Compatibility Issues & Overheating
Speed / No. of Poles	2-Pole $\approx$ 3000 rpm 4-Pole $\approx$ 1500 rpm 6-Pole $\approx$ 1000 rpm	Matches Motor Speed With Process Requirements
Mounting Arrangement	B3 / B5 / B14 B35 / B34	Ensures Correct Installation and Alignment
IP Rating & Environmental	IP44 (Indoor) IP55 (Industrial) IP66 (Dust/Water Protection)	Guides Enclosure Protection & Material Choice

Parameter	Key Considerations	Why it's Important
Insulation Class & Ambient	Class F/H Temperature Rise - Ambient Operating Temp	Impacts Thermal Limits, Reliability & Lifespan
Efficiency & Duty Cycle	IE rating (IE3–IE6) Continuous / Intermittent Duty	Reduces Energy Cost & Affects Lifespan
Starting Method	DOL or Star-Delta VSD or Soft Starter	Affects Inrush Current & Torque
Cooling Method (IC Code)	IC410 -TENV (Totally Enclosed Non-Ventilated) IC411 - TEFC (Totally Enclosed Fan Cooled) IC416 – Forced Ventilation	Ensures Adequate Cooling in Demanding Applications
Bearings & Lubrication	Bearing Type Regreasing Intervals	Critical for Noise, Vibration & Reliability

Starts per hour & maximum load inertia

Frequent starting and high-inertia loads both impose thermal stress on the rotor and windings during acceleration, independent of continuous running load. The values below define the permissible operating envelope. Where application requirements exceed these limits, a soft starter or VSD must be used.

Table A - Maximum starts per hour

Cold start: motor at ambient temperature. Hot start: motor at normal operating temperature. Values for direct-coupled load ($J_{load} \leq J_{motor}$).

IEC Frame	DOL		Star-Delta		Soft Starter	
	Cold	Hot	Cold	Hot	Cold	Hot
80–132	15	8	20	12	25	15
160–200	10	5	15	8	20	10
225–280	6	3	10	5	15	8
315–355	4	2	6	3	10	5

High start frequency applications

- Compressors
- Pumps
- Conveyors
- Cranes

If required starts per hour exceed the DOL limits above, select soft starter or VSD starting to reduce rotor heating per start cycle, or contact PERDURUS for a thermal assessment.

Table B - Maximum load inertia GD^2 (kg·m²)

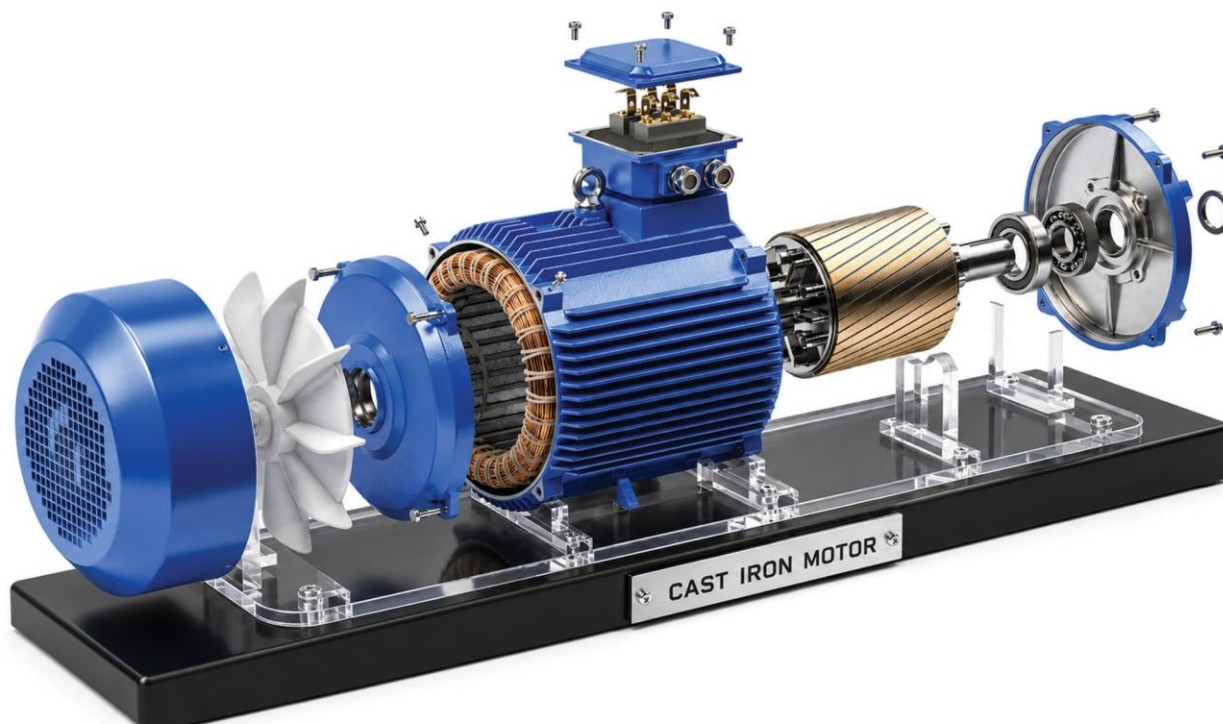
Maximum permissible total reflected load inertia at the motor shaft for DOL starting. Values apply at rated voltage, 40°C ambient, S1 duty. Exceeding these values requires soft starter or VSD.

Frame	2-pole	4-pole	6-pole	8-pole
132	0.08	0.12	0.15	0.18
160	0.18	0.26	0.32	0.38
180	0.28	0.40	0.50	0.58
200	0.45	0.65	0.80	0.95
225	0.75	1.10	1.35	1.55
250	1.20	1.75	2.15	2.50
280	2.10	3.00	3.70	4.30
315	3.80	5.50	6.80	7.80
355	6.50	9.20	11.50	13.20

High Inertia Applications

- Fans
- Flywheels
- Centrifuges
- Ball mills

Where load GD^2 exceeds Table B values, use a soft starter or VSD to limit accelerating current and thermal stress. Contact PERDURUS Engineering with load inertia data for assessment.



16. Installation, Operating Limits & Maintenance

Installation and commissioning of Perdurus Cast Iron Motors shall be performed by appropriately qualified personnel, in accordance with applicable IEC and AS/NZS standards, statutory requirements, and site safety procedures. Detailed installation and commissioning instructions are provided in the PERDURUS Installation & Maintenance Manual, supplied separately.

Perdurus Cast Iron Motors shall be operated within the limits specified on the motor nameplate and in this catalogue. Motors are rated for S1 continuous duty unless otherwise stated. Operation outside standard ambient temperature, altitude, or supply conditions shall be subject to derating and engineering assessment. Motors are not suitable for use in hazardous or explosive atmospheres unless specifically certified for such applications.

Perdurus Cast Iron Motors are designed for long-term industrial service when maintained in accordance with recommended practices by qualified personnel. Maintenance activities shall not adversely affect alignment, ingress protection, or bearing integrity. Detailed maintenance requirements are provided in the PERDURUS Installation & Maintenance Manual, supplied separately.



17. Technical Data Sheets

IEC frame	Output (kW)	Rated Speed (rpm)	Full load current I _R (A)	Locked rotor current (I _L /I _R)	Full load torque T _R (N.m)	Locked rotor torque (T _L /T _R)	Break-down torque (T _B /T _R)	415V						Sound power level dB(A)	(B3) Approx Weight (kg)
								% of full load							
								Efficiency η (%)			Power factor (cosφ)				
								50	75	100	50	75	100		
2 Pole-3000 rpm-50Hz															
PID-132S1-2	5.5	2935	9.7	8.5	17.9	2.0	2.3	87.5	89.2	89.2	0.75	0.85	0.88	79	0
PID-132S2-2	7.5	2935	13.2	8.5	24.4	2.0	2.3	89.2	90.2	90.1	0.75	0.85	0.88	79	66
PID-160M1-2	11	2940	18.9	8.5	35.7	2.0	2.3	89.7	91.1	91.2	0.78	0.86	0.89	81	103
PID-160M2-2	15	2950	25.5	8.5	48.6	2.0	2.3	91.1	91.8	91.9	0.79	0.86	0.89	81	123
PID-160L-2	18.5	2950	31.3	8.5	59.9	2.0	2.3	91.8	92.3	92.4	0.82	0.88	0.89	81	143
PID-180M-2	22	2970	37.1	8.5	70.7	2.0	2.3	91.6	92.4	92.7	0.82	0.88	0.89	83	174
PID-200L1-2	30	2965	50.3	8.5	96.6	2.0	2.3	93.0	93.2	93.3	0.77	0.85	0.89	84	222
PID-200L2-2	37	2965	61.7	8.5	119	2.0	2.3	93.4	93.7	93.7	0.78	0.86	0.89	84	238
PID-225M-2	45	2965	74.0	8.0	145	2.0	2.3	92.8	93.7	94.0	0.84	0.90	0.90	86	314
PID-250M-2	55	2970	90.2	8.0	177	2.0	2.3	92.9	93.9	94.3	0.82	0.88	0.90	89	389
PID-280S-2	75	2970	122	7.5	241	1.8	2.3	93.1	94.3	94.7	0.85	0.90	0.90	91	511
PID-280M-2	90	2970	146	7.5	289	1.8	2.3	93.5	94.6	95.0	0.87	0.90	0.90	91	556
PID-315S-2	110	2975	179	7.5	353	1.8	2.3	93.0	94.5	95.2	0.84	0.89	0.90	92	833
PID-315M-2	132	2975	214	7.5	424	1.8	2.3	93.1	94.6	95.4	0.86	0.90	0.90	92	914
PID-315L1-2	160	2975	256	7.5	514	1.8	2.3	93.5	94.8	95.6	0.87	0.91	0.91	92	976
PID-315L2-2	200	2975	319	7.5	642	1.8	2.2	93.9	95.3	95.8	0.86	0.90	0.91	92	1078
PID-355M-2	250	2980	399	7.5	801	1.6	2.2	93.7	95.2	95.8	0.87	0.91	0.91	100	1578
PID-355L-2	315	2980	503	7.5	1009	1.6	2.2	93.7	95.3	95.8	0.86	0.90	0.91	100	1798
High-Output Design - Special Frame															
PID-250M2-2	75	2970	122	7.5	241	1.8	2.3	93.1	94.3	94.7	0.78	0.87	0.90	89	425
PID-280M2-2	110	2970	179	7.5	354	1.8	2.3	93.8	94.8	95.2	0.79	0.88	0.90	91	596

IEC frame	Output (kW)	Rated Speed (rpm)	Full load current I _R (A)	Locked rotor current (I _L /I _R)	Full load torque T _R (N.m)	Locked rotor torque (T _L /T _R)	Break-down torque (T _B /T _R)	415V						Sound power level dB(A)	(B3) Approx Weight (kg)
								% of full load							
								Efficiency η (%)			Power factor (cosφ)				
								50	75	100	50	75	100		
4 Pole-1500 rpm-50Hz															
PID-132S-4	5.5	1460	10.3	7.9	36.0	2.0	2.3	88.3	89.2	89.6	0.61	0.74	0.83	71	62
PID-132M-4	7.5	1460	13.7	7.5	49.1	2.0	2.3	89.1	90.1	90.4	0.63	0.76	0.84	71	74
PID-160M-4	11	1465	19.7	7.7	71.7	2.2	2.3	89.6	90.6	91.4	0.67	0.78	0.85	73	120
PID-160L-4	15	1465	26.3	7.8	97.8	2.2	2.3	91.4	91.8	92.1	0.69	0.79	0.86	73	140
PID-180M-4	18.5	1475	32.3	7.8	120	2.0	2.3	91.6	92.5	92.6	0.70	0.80	0.86	76	168
PID-180L-4	22	1475	38.3	7.8	142	2.0	2.3	92.0	92.8	93.0	0.70	0.80	0.86	76	196
PID-200L-4	30	1475	51.8	7.3	194	2.0	2.3	92.3	92.9	93.6	0.73	0.83	0.86	76	264
PID-225S-4	37	1480	63.7	7.4	239	2.0	2.3	92.1	93.0	93.9	0.75	0.84	0.86	78	323
PID-225M-4	45	1480	77.3	7.4	290	2.0	2.3	93.4	93.8	94.2	0.77	0.85	0.86	78	346
PID-250M-4	55	1485	94.1	7.4	354	2.2	2.3	93.4	94.2	94.6	0.76	0.84	0.86	79	410
PID-280S-4	75	1485	125	6.9	482	2.0	2.3	94.0	94.7	95.0	0.82	0.87	0.88	80	543
PID-280M-4	90	1485	149	6.9	579	2.0	2.3	93.8	94.7	95.2	0.82	0.88	0.88	80	592
PID-315S-4	110	1485	180	7.0	707	2.0	2.2	94.0	95.1	95.4	0.80	0.86	0.89	88	865
PID-315M-4	132	1485	216	7.0	849	2.0	2.2	94.2	95.1	95.6	0.81	0.87	0.89	88	946
PID-315L1-4	160	1485	261	7.1	1029	2.0	2.2	94.1	95.2	95.8	0.78	0.85	0.89	88	1022
PID-315L2-4	200	1485	322	7.1	1286	2.0	2.2	94.4	95.5	96.0	0.78	0.85	0.90	88	1152
PID-355M-4	250	1490	403	7.1	1602	2.0	2.2	94.2	95.3	96.0	0.86	0.90	0.90	95	1518
PID-355L-4	315	1490	507	7.1	2019	2.0	2.2	94.6	95.7	96.0	0.87	0.90	0.90	95	1714
High-Output Design - Special Frame															
PID-250M2-4	75	1485	125	6.9	482	2.0	2.3	93.8	94.9	95.0	0.78	0.86	0.88	79	476
PID-280M2-4	110	1485	180	7.0	707	2.0	2.2	93.9	95.0	95.4	0.80	0.88	0.89	80	672

IEC frame	Output (kW)	Rated Speed (rpm)	Full load current I _R (A)	Locked rotor current (I _L /I _R)	Full load torque T _R (N.m)	Locked rotor torque (T _L /T _R)	Break- down torque (T _B /T _R)	415V						Sound power level dB(A)	(B3) Approx Weight (kg)
								% of full load							
								Efficiency η (%)			Power factor (cosφ)				
								50	75	100	50	75	100		
6 Pole-1000 rpm-50Hz															
PID-132S-6	3	970	6.6	6.8	29.5	2.0	2.1	83.9	85.4	85.6	0.59	0.71	0.74	69	55
PID-132M1-6	4	970	8.7	6.8	39.4	2.0	2.1	86.3	86.9	86.8	0.61	0.73	0.74	69	62
PID-132M2-6	5.5	970	11.6	7.0	54.1	2.0	2.1	86.9	87.9	88.0	0.61	0.73	0.75	69	72
PID-160M-6	7.5	970	14.8	7.0	73.8	2.0	2.1	87.4	88.9	89.1	0.60	0.73	0.79	73	103
PID-160L-6	11	970	21.2	7.2	108	2.0	2.1	89.2	90.0	90.3	0.64	0.75	0.80	73	130
PID-180L-6	15	975	28.2	7.3	147	2.0	2.1	89.5	90.7	91.2	0.63	0.75	0.81	73	170
PID-200L1-6	18.5	980	34.7	7.3	180	2.0	2.1	90.4	91.4	91.7	0.63	0.76	0.81	73	221
PID-200L2-6	22	980	41.0	7.4	214	2.0	2.1	90.7	91.7	92.2	0.63	0.76	0.81	73	238
PID-225M-6	30	985	54.1	6.9	291	2.0	2.1	91.8	92.6	92.9	0.69	0.79	0.83	74	281
PID-250M-6	37	985	65.7	7.1	359	2.0	2.1	92.0	93.0	93.3	0.69	0.79	0.84	76	375
PID-280S-6	45	985	78.6	7.3	436	2.0	2.0	92.9	93.6	93.7	0.74	0.83	0.85	78	480
PID-280M-6	55	985	94.6	7.3	533	2.0	2.0	93.2	94.0	94.1	0.73	0.82	0.86	78	533
PID-315S-6	75	985	131	6.6	727	2.0	2.0	93.0	94.2	94.6	0.68	0.81	0.84	83	781
PID-315M-6	90	985	155	6.7	873	2.0	2.0	93.5	94.6	94.9	0.69	0.81	0.85	83	841
PID-315L1-6	110	985	189	6.7	1066	2.0	2.0	93.7	94.8	95.1	0.70	0.81	0.85	83	926
PID-315L2-6	132	985	224	6.8	1280	2.0	2.0	93.9	94.9	95.4	0.73	0.82	0.86	83	1007
PID-355M1-6	160	990	271	6.8	1543	1.8	2.0	93.8	95.0	95.6	0.75	0.84	0.86	85	1477
PID-355M2-6	200	990	334	6.8	1929	1.8	2.0	94.4	95.4	95.8	0.78	0.85	0.87	85	1605
PID-355L-6	250	990	417	6.8	2412	1.8	2.0	94.6	95.5	95.8	0.81	0.87	0.87	85	1804

IEC frame	Output (kW)	Rated Speed (rpm)	Full load current I _R (A)	Locked rotor current (I _L /I _R)	Full load torque T _R (N.m)	Locked rotor torque (T _L /T _R)	Break-down torque (T _B /T _R)	415V						Sound power level dB(A)	(B3) Approx Weight (kg)
								% of full load							
								Efficiency η (%)			Power factor (cosφ)				
								50	75	100	50	75	100		
8 Pole-750 rpm-50Hz															
PID-132S-8	2.2	715	5.3	6.7	29.4	1.8	2.0	80.5	82.0	81.9	0.52	0.65	0.71	64	57
PID-132M-8	3	715	6.8	6.9	40.1	1.8	2.0	81.6	82.9	83.5	0.51	0.64	0.73	64	66
PID-160M1-8	4	725	9.0	6.9	52.7	1.9	2.0	83.4	85.0	84.8	0.52	0.66	0.73	68	99
PID-160M2-8	5.5	725	12.0	6.9	72.4	1.9	2.0	85.7	86.7	86.2	0.55	0.68	0.74	68	113
PID-160L-8	7.5	725	15.9	6.6	98.8	1.9	2.0	86.5	87.3	87.3	0.55	0.68	0.75	68	128
PID-180L-8	11	730	23.0	6.6	144	2.0	2.0	87.3	88.5	88.6	0.55	0.68	0.75	70	169
PID-200L-8	15	735	30.6	6.8	195	2.0	2.0	88.0	89.5	89.6	0.59	0.71	0.76	73	235
PID-225S-8	18.5	735	37.6	6.8	240	1.9	2.0	88.6	90.1	90.1	0.62	0.73	0.76	73	290
PID-225M-8	22	735	43.3	7.0	286	1.9	2.0	89.1	90.4	90.6	0.63	0.74	0.78	73	319
PID-250M-8	30	735	57.9	6.7	390	1.9	2.0	90.6	91.4	91.3	0.62	0.73	0.79	75	398
PID-280S-8	37	740	71.0	6.7	478	1.9	2.0	90.6	91.7	91.8	0.63	0.74	0.79	76	473
PID-280M-8	45	740	85.9	6.7	581	1.9	2.0	91.9	92.4	92.2	0.65	0.76	0.79	76	520
PID-315S-8	55	740	102	6.8	710	1.8	2.0	91.5	92.3	92.5	0.70	0.78	0.81	82	767
PID-315M-8	75	740	138	6.3	968	1.8	2.0	91.8	92.6	93.1	0.69	0.77	0.81	82	871
PID-315L1-8	90	740	163	6.4	1161	1.8	2.0	92.3	93.2	93.4	0.69	0.78	0.82	82	969
PID-315L2-8	110	740	199	6.4	1420	1.8	2.0	92.2	93.3	93.7	0.69	0.78	0.82	82	1086
PID-355M1-8	132	740	238	6.4	1704	1.8	2.0	92.4	93.9	94.0	0.70	0.79	0.82	89	1453
PID-355M2-8	160	740	288	6.4	2065	1.8	2.0	92.6	94.1	94.3	0.70	0.79	0.82	89	1597
PID-355L-8	200	740	354	6.4	2581	1.8	2.0	92.5	94.1	94.6	0.70	0.79	0.83	89	1788

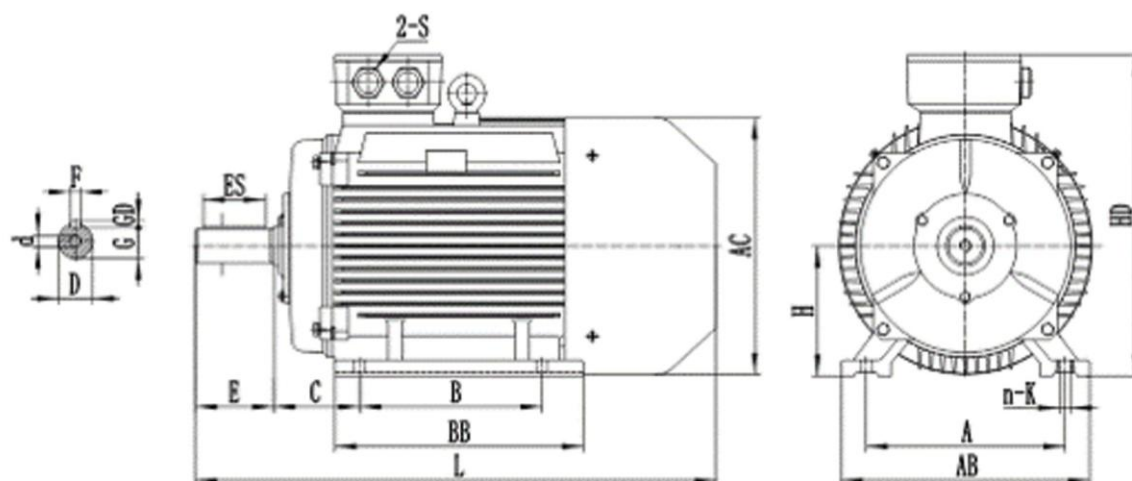
18. Tolerances for Electrical & Mechanical Characteristics

Performance values stated in the technical data sheets (Section 16) are nominal values at rated voltage and frequency under standard ambient conditions. Permitted tolerances are defined in accordance with IEC 60034-1 and apply to individual motors tested at the factory. Tolerances do not apply cumulatively.

	Parameter	Tolerance	Direction	Notes
Efficiency & Losses	Efficiency η (%) At 100% full load	$-(1 - \eta) \times 15\%$	Lower only	E.g. $\eta = 93.0\%$: tolerance = $-(0.07 \times 15\%) = -1.05$ pp minimum 91.95%. Per IEC 60034-1 cl. 9.2.
	Efficiency η (%) At 75% and 50% load	$-(1 - \eta) \times 15\%$	Lower only	Same formula applied at the respective partial load efficiency value stated on the datasheet.
	Total losses (W)	+15%	Upper only	Alternative to efficiency tolerance — used when direct loss measurement is performed.
Current & Power Factor	Full-load current I_R (A)	$\pm 10\%$	Both	Applies at rated voltage, frequency and output power. Measured at motor terminals.
	Power factor $\cos \phi$	$-(1 - \cos \phi) \times 1/6$	Lower only	E.g. $\cos \phi = 0.86$: tolerance = $-(0.14 / 6) = -0.023$, minimum 0.837.
Speed & Slip	Rated speed / slip (rpm)	$\pm 20\%$	Both	Applies to slip at full load. Synchronous speed is fixed by frequency — no tolerance applies.
Starting & Torque Characteristics	Locked rotor current I_L/I_R	+20%	Upper only	Ratio of locked rotor to full-load current. Critical for fuse and switchgear sizing.
	Locked rotor torque T_L/T_R	-15%	Lower only	Minimum starting torque — must be sufficient to accelerate the connected load from rest.
	Full-load torque T_R (N·m)	$\pm 10\%$	Both	Derived from rated power and speed. Verify with application torque requirement including safety margin.
	Breakdown torque T_B/T_R	-10%	Lower only	Minimum peak torque before motor stalls. Must exceed maximum transient load torque.
Noise & Vibration	Sound power level (dB(A))	+3 dB(A)	Upper only	Tested per IEC 60034-9 / AS 60034-9. Values in Section 16 are nominal at rated load and speed.
	Vibration severity (mm/s rms)	Grade A	Upper only	Per IEC 60034-14. Grade A limits: ≤ 1.8 mm/s (fr. 80–132) ≤ 2.8 mm/s (fr. 160–280), ≤ 4.5 mm/s (fr. 315–355).

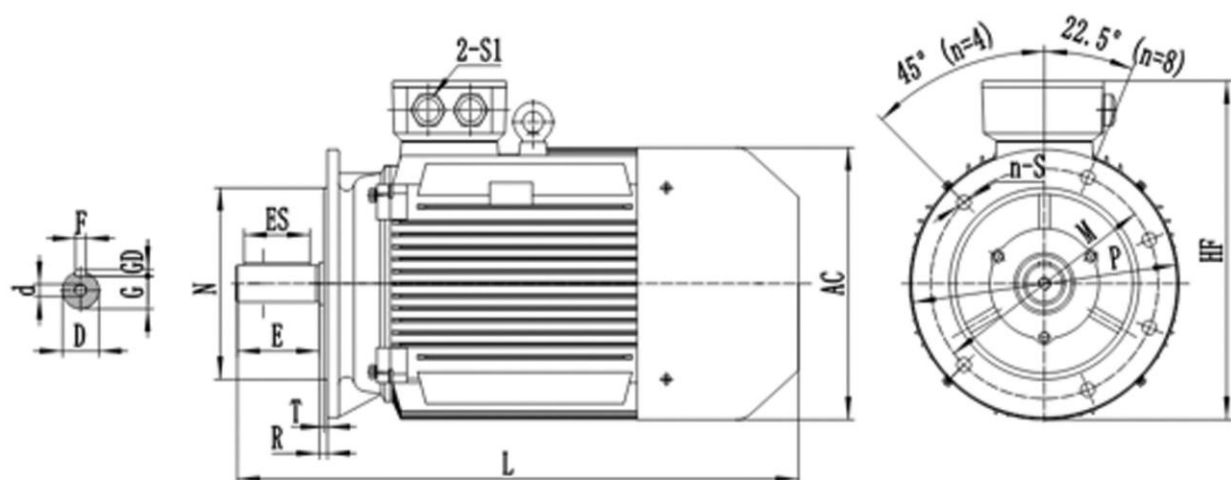
● **How to use these tolerances:** When writing a purchase specification, state that motors must meet the nominal values in the PERDURUS technical datasheet within the IEC 60034-1 tolerances listed above. For acceptance testing, apply each tolerance independently — tolerances do not stack. Where tighter tolerances are required for a specific application, contact PERDURUS Engineering prior to order placement.





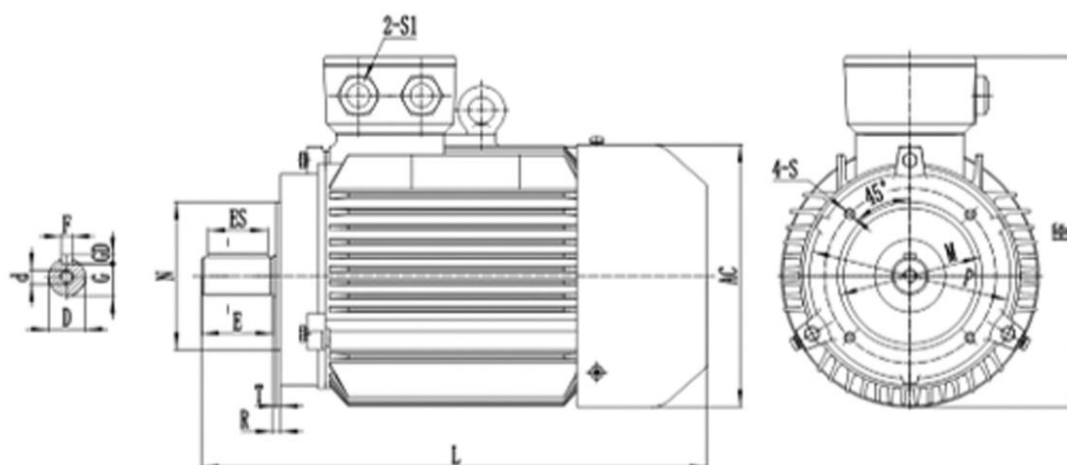
B3 Installation Dimensions(mm)

IEC Frame	Main Dimensions (mm)												Shaft Dimensions (mm)							Bearings	
	L	HD	AC	A	AB	B	BB	C	H	n	K	S1	ΦD	E	ES	F	G	GD	d	D.E.	N.D.E.
PID-132S	465	332	256	216	262	140	186	89	132	4	12	M25x1.5	38k6	80	70	10	33	8	M12	6208	6208
PID-132M	503	332	256	216	262	178	224	89	132	4	12	M25x1.5	38k6	80	70	10	33	8	M12	6208	6208
PID-160M	610	405	311	254	314	210	260	108	160	4	14.5	M40x1.5	42k6	110	90	12	37	8	M16	6309	6309
PID-160L	654	405	311	254	314	254	304	108	160	4	14.5	M40x1.5	42k6	110	90	12	37	8	M16	6309	6309
PID-180M	682	442	352	279	349	241	311	121	180	4	14.5	M40x1.5	48k6	110	100	14	42.5	9	M16	6311	6311
PID-180L	720	442	352	279	349	279	349	121	180	4	14.5	M40x1.5	48k6	110	100	14	42.5	9	M16	6311	6311
PID-200L	782	492	394	318	388	267/305	369	133	200	6	18.5	M50x1.5	55m6	110	100	16	49	10	M20	6312	6312
PID-225M-2	815	540	442	356	431	286/311	393	149	225	6	18.5	M50x1.5	55m6	110	100	16	49	10	M20	6313	6313
PID-225S-4,8,M-4,6,8	845	540	442	356	431	286/311	393	149	225	6	18.5	M50x1.5	60m6	140	125	18	53	11	M20	6313	6313
PID-250M-2	910	608	481	406	484	311/349	445	168	250	6	24	M63x1.5	60m6	140	125	18	53	11	M20	6316	6314
PID-250M2-2	995	608	481	406	484	311/349	445	168	250	6	24	M63x1.5	60m6	140	125	18	53	11	M20	6316	6314
PID-250M-4,6,8	910	608	481	406	484	311/349	445	168	250	6	24	M63x1.5	70m6	140	125	20	62.5	12	M20	6316	6314
PID-250M2-4	995	608	481	406	484	311/349	445	168	250	6	24	M63x1.5	70m6	140	125	20	62.5	12	M20	6316	6314
PID-280SM-2	1023	667	543	457	542	368/419	536	190	280	6	24	M63x1.5	65m6	140	125	18	58	11	M20	6317	6314
PID-280M2-2	1063	667	543	457	542	368/419	576	190	280	6	24	M63x1.5	65m6	140	125	18	58	11	M20	6317	6314
PID-280SM-4,6,8	1053	667	543	457	542	368/419	536	190	280	6	24	M63x1.5	80m6	170	140	22	71	14	M20	6317	6317
PID-280M2-4	1093	667	543	457	542	368/419	576	190	280	6	24	M63x1.5	80m6	170	140	22	71	14	M20	6317	6317
PID-315SML-2	1310	845	616	508	628	406/457/508	680	216	315	8	28	M63x1.5	65m6	140	125	18	58	11	M20	6317	6317
PID-315SML-4,6,8	1340	845	616	508	628	406/457/508	680	216	315	8	28	M63x1.5	85m6	170	140	22	76	14	M20	6319	6319
PID-355ML-2	1510	1000	694	610	726	560/630	750	254	355	6	28	M63x1.5	75m6	140	125	20	67.5	12	M20	6319	6319
PID-355ML-4,6,8	1580	1000	694	610	726	560/630	750	254	355	6	28	M63x1.5	100m6	210	180	28	90	16	M24	6322	6322



B5 Installation Dimensions(mm)

IEC Frame	Main Dimensions (mm)											Shaft Dimensions (mm)							Bearings	
	L	HF	AC	P	M	N	R	T	n	S	S1	ΦD	E	ES	F	G	GD	d	D.E.	N.D.E.
PID-132S	465	353	256	300	265	230	0	4	4	14.5	M25x1.5	38k6	80	70	10	33	8	M12	6208	6208
PID-132M	503	353	256	300	265	230	0	4	4	14.5	M25x1.5	38k6	80	70	10	33	8	M12	6208	6208
PID-160M	610	420	311	350	300	250	0	5	4	18.5	M40x1.5	42k6	110	90	12	37	8	M16	6309	6309
PID-160L	654	420	311	350	300	250	0	5	4	18.5	M40x1.5	42k6	110	90	12	37	8	M16	6309	6309
PID-180M	682	438	352	350	300	250	0	5	4	18.5	M40x1.5	48k6	110	100	14	42.5	9	M16	6311	6311
PID-180L	720	438	352	350	300	250	0	5	4	18.5	M40x1.5	48k6	110	100	14	42.5	9	M16	6311	6311
PID-200L	782	492	394	400	350	300	0	5	4	18.5	M50x1.5	55m6	110	100	16	49	10	M20	6312	6312
PID-225M-2	815	540	442	450	400	350	0	5	8	18.5	M50x1.5	55m6	110	100	16	49	10	M20	6313	6313
PID-225S-4,8,M-4,6,8	845	540	442	450	400	350	0	5	8	18.5	M50x1.5	60m6	140	125	18	53	11	M20	6313	6313
PID-250M-2	910	633	481	550	500	450	0	5	8	18.5	M63x1.5	60m6	140	125	18	53	11	M20	6316	6314
PID-250M2-2	995	633	481	550	500	450	0	5	8	18.5	M63x1.5	60m6	140	125	18	53	11	M20	6316	6314
PID-250M-4,6,8	910	633	481	550	500	450	0	5	8	18.5	M63x1.5	70m6	140	125	20	62.5	12	M20	6316	6314
PID-250M2-4	995	633	481	550	500	450	0	5	8	18.5	M63x1.5	70m6	140	125	20	62.5	12	M20	6316	6314
PID-280SM-2	1023	662	543	550	500	450	0	5	8	18.5	M63x1.5	65m6	140	125	18	58	11	M20	6317	6314
PID-280M2-2	1063	662	543	550	500	450	0	5	8	18.5	M63x1.5	65m6	140	125	18	58	11	M20	6317	6314
PID-280SM-4,6,8	1053	662	543	550	500	450	0	5	8	18.5	M63x1.5	80m6	170	140	22	71	14	M20	6317	6317
PID-280M2-4	1093	662	543	550	500	450	0	5	8	18.5	M63x1.5	80m6	170	140	22	71	14	M20	6317	6317



B14 Installation Dimensions(mm)

IEC Frame	Main Dimensions (mm)										Shaft Dimensions (mm)							Bearings	
	L	HF	AC	P	M	N	R	T	S	S1	ΦD	E	ES	F	G	GD	d	D.E.	N.D.E.
PID-132S	465	328	256	200	165	130	0	3.5	M10	M25x1.5	38k6	80	70	10	33	8	M12	6208	6208
PID-132M	503	328	256	200	165	130	0	3.5	M10	M25x1.5	38k6	80	70	10	33	8	M12	6208	6208
PID-160M	610	398	311	250	215	180	0	4	M12	M40x1.5	42k6	110	90	12	37	8	M16	6309	6309
PID-160L	654	398	311	250	215	180	0	4	M12	M40x1.5	42k6	110	90	12	37	8	M16	6309	6309

20. Warranty & Scope of Supply

All PERDURUS motor ranges are supplied with a manufacturer's warranty covering defects in materials and workmanship.

The standard warranty period is 36 months from date of shipment, unless otherwise agreed in writing. Warranty validity is conditional upon installation, operation, and maintenance being carried out in accordance with applicable standards and PERDURUS recommendations.

The scope of supply includes the motor as defined by the PERDURUS standard build or the confirmed order specification. Installation, commissioning, wiring, and maintenance services are excluded unless expressly agreed in writing.

Full warranty terms and conditions are available upon request.

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