

TR12

12" SUBMERSIBLE MOTOR



TECHNICAL DATA

Flanging: 12".

Protection class: IP58 (IP68 on request).

Cooling flow speed: 0,5 m/s.

Power supply tolerance: + 6 % / - 10 %.

Max. starts: 5/h.

Max operating depth: 300 m.

Max operating temperature: 60 bar.

Horizontal operation: 180 HP - 260 HP.

Direction of rotation: to be specified in the order; the standard version turns anti-clockwise.

GENERAL DATA

Rewindable 12" submersible asynchronous two or four-pole electric motor available in standard version with casing in AISI 316 stainless steel and supports in cast iron. The thrust block and bushes are cooled and lubricated with a mixture of water and glycol. The rotor is mounted on a Mitchell self-centring thrust block designed to withstand significant axial loads. The motor is also available in a version entirely in AISI 316 stainless steel and a version in AISI 904. There is also a version suitable for use with variable frequency drive (30 Hz - 50/60 Hz). The motor is equipped with single-core cables of 8 m connected directly to the winding, and is available in DOL or STAR-DELTA configuration. The cables are ACS, WRAS and KTW certified. The electrical protection must be provided by the user.

On request: PT100 and PTC temperature probes, cables of a different length, different voltage supply, special shaft terminals.

CONSTRUCTION FEATURES



The rewindable stator is protected by an AISI 316 stainless steel jacket. In the standard version the rotor is wound with PVC coated wire (PE2+PA for 300 HP and 340 HP). On request, we can supply a version with a PE2+PA winding that makes the motor compatible with special applications and with the use of a variable frequency drive.

Mitchell type thrust bearings with pads in rubber coated steel and steel clearance ring.
from 200 HP to 340 HP:

70000 N (one-way)

35000 N (two-way)

Counter-thrust load: 15000 N

Rotor shaft in stainless steel, shaft extension with key connection. The rotor is in copper for all sizes.

In the standard version the motor is supplied with a ceramic/carbon mechanical seal. A silicon carbide (SiC/SiC) mechanical seal is available on request. The motor can also be fitted with an additional lip seal (IP68).

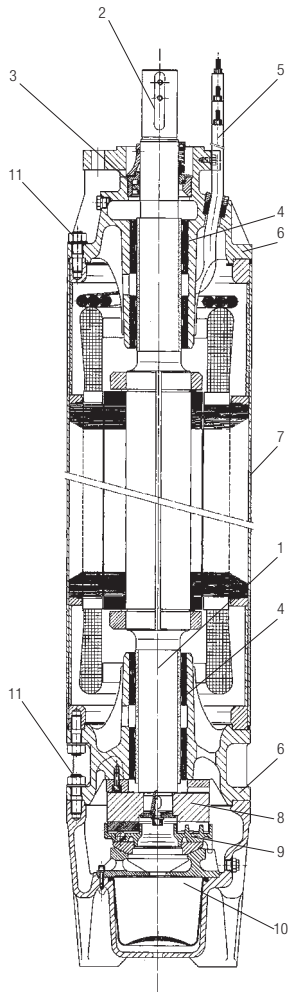
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SUBMERSIBLE MOTORS

MATERIALS

N.	PARTS	STD VERSION	VERSION 316 SS	VERSION 904 SS
1	SHAFT	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
2	SHAFT TERMINAL	AISI 316 STAINLESS STEEL	AISI 316 STAINLESS STEEL	AISI 904 STAINLESS STEEL
3	MECHANICAL SEAL	CERAMIC/CARBON	SIC/SIC	SIC/SIC
4	BUSHES	STEEL/NBR	STEEL/NBR	STEEL/NBR
5	CABLE	EPDM	EPDM	EPDM
6	STRUCTURAL PARTS	CAST IRON	AISI 316 STAINLESS STEEL	AISI 904 STAINLESS STEEL
7	JACKET	AISI 316 STAINLESS STEEL	AISI 316 STAINLESS STEEL	AISI 904 STAINLESS STEEL
8	CLEARANCE RING	STEEL	STEEL	STEEL
9	THRUST	STEEL/NBR	STEEL/NBR	STEEL/NBR
10	DIAPHRAGM	EPDM	EPDM	EPDM
11	SCREWS	AISI 304 STAINLESS STEEL	AISI 316 STAINLESS STEEL	AISI 904 STAINLESS STEEL

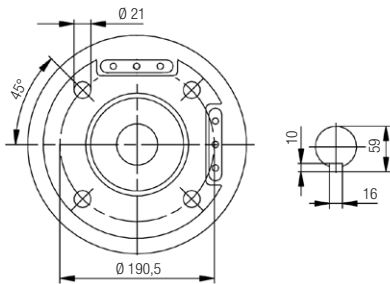
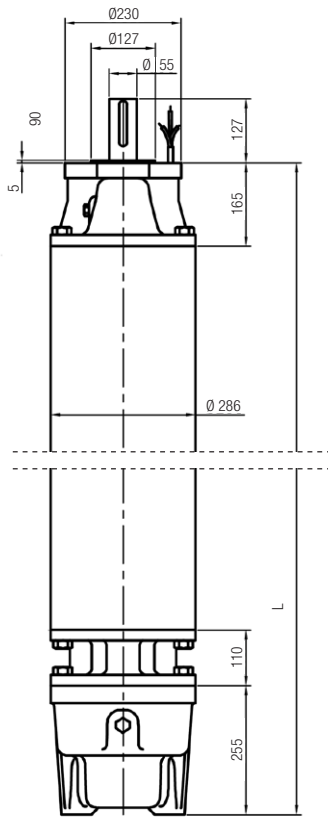


DIMENSIONS -THREE-PHASE MOTORS - 2 poles

TYPE	P2		LENGTH mm	WEIGHT kg	AXIAL THRUST N
	hp	kW			
50 Hz	180	132	1700	510	70000
	200	147	1790	565	70000
	230	170	1880	605	70000
	260	190	1980	650	70000
	300	220	2110	700	70000
	340	250	2280	775	70000
	400	300	2280	775	70000

DIMENSIONS -THREE-PHASE MOTORS - 4 poles

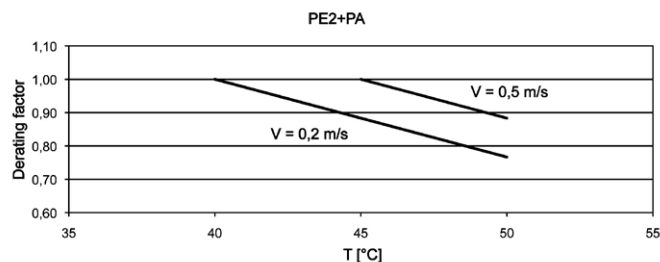
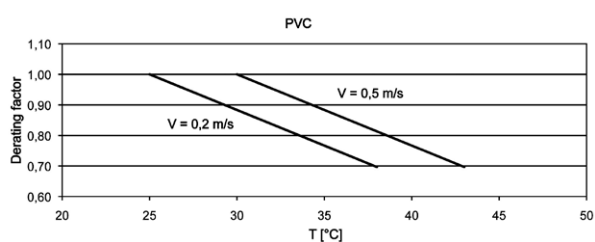
TYPE	P2		LENGTH mm	WEIGHT kg	AXIAL THRUST N
	hp	kW			
50 Hz	100	75	1660	515	70000
	125	92	1790	565	70000
	150	110	1880	605	70000
	180	132	2110	700	70000
	200	147	2210	750	70000



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DOWNGRADING



For TR12 220 kW PE2+PA and 250 kW PE2+PA 50 Hz and for all the TR12 60 Hz versions the maximum liquid temperature is 10 °C lower than that indicated in the graph. For TR12 300kW PE2+PA the maximum liquid temperature is 25°C.

ELECTRICAL DATA - THREE-PHASE MOTORS - 2 POLES - DOL

MODEL	P2		POWER INPUT 50 Hz	In A	Is/In	P1 W	N min ⁻¹	Cos φ	η %	CABLE	
	hp	kW								Ø mm ²	LC m
TR12 - 132kW - 400V - T	180	132	400	266	5,0	150700	2930	0,82	88	3x70+1x50	8
TR12 - 147kW - 400V - T	200	147	400	290	6,2	167045	2930	0,83	88	3x70+1x50	8
TR12 - 170kW - 400V - T	230	170	400	329	6,1	193182	2920	0,85	88	3x70+1x50	8
TR12 - 190kW - 400V - T	260	190	400	371	6,2	215909	2930	0,84	88	3x70+1x50	8
TR12 - 220kW - 400V - T	300	220	400	424	6,1	250000	2920	0,85	88	3x70+1x50	8
TR12 - 250kW - 400V - T	340	250	400	481	5,9	284091	2920	0,85	88	3x70+1x50	8
TR12 - 300kW - 400V - T	400	300	400	575	6	341000	2905	0,87	88	3x70+1x50	8

ELECTRICAL DATA - THREE-PHASE MOTORS - 4 POLES - DOL

MODEL	P2		POWER INPUT 50 Hz	In A	Is/In	P1 W	N min ⁻¹	Cos φ	η %	CABLE	
	hp	kW								Ø mm ²	LC m
TR12 - 75 kW - 380 V - T	100	75	380	147	6,5	85227	1450	0,86	88	3x70+1x50	8
TR12 - 92 kW - 380 V - T	125	92	380	182	6,5	103371	1450	0,87	89	3x70+1x50	8
TR12 - 110 kW - 380 V - T	150	110	380	214	5,8	123596	1450	0,88	89	3x70+1x50	8
TR12 - 132 kW - 380 V - T	180	132	380	256	5,8	148315	1450	0,88	89	3x70+1x50	8
TR12 - 147 kW - 380 V - T	200	147	380	285	5,9	165169	1450	0,88	89	3x70+1x50	8

P2: Nominal power
V: Nominal voltage
In: Nominal current
Is/In: Starting current/Nominal current
P1: Absorbed power

N: Rotations per minute - R.p.m
Cos φ: Power factor
η: Yield
Ø: Cable cross section
LC: Cable length