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Lowara

40S-L4C
L6C-L6W
L8W-L10W-L12W
Series

4" - 6" - 8" - 10" - 12"
Submersible Motors

60 Hz



Engineered for life



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4" Submersible motors

Submersible liquid-cooled motors. The choice of component materials ensures optimum operating performances, superior quality, reliability and ease of installation.

4OS Series 60 Hz



SPECIFICATIONS

- **Stainless steel** outer sleeve.
- Shaft extension and coupling dimensions to **NEMA** standards.
- **Rewindable stator.**
- Class **F insulation.**
- Protection class: **IP68.**
- **Internal fluid** according to standards for oils in contact with foodstuffs (F.D.A. - FOOD AND DRUG ADMINISTRATION).
- Compensating bellows for internal liquid expansion.
- Axial load supported by angular bearings.
- **Mechanical seal** protected by sand guard.
- Maximum **immersion depth:** 150 m.
- Maximum **number of starts per hour** at regular intervals: 30 for direct start; 20 for impedance start.
- Maximum supply **voltage variations** allowed : 220V -6%; 230V +6%. 380V ±10%.
- Maximum water **temperature** : 35°C. Max. temperature applies to motors working in a installation capable of delivering a flow of water around the motor jacket of at least 0,08 m/s.
- Water **pH:** 4÷8.
- **Axial thrust:** 3000 N from 0,37 to 2,2 kW; 6500 N from 3 to 7,5 kW.
- **Extractable supply cable** fitted with watertight connector.
- **Versions:**
 - Single-phase: 0,37 to 2,2 kW 220-230 V, 60 Hz
 - Three-phase: 0,37 to 7,5 kW 220-230 V, 60 Hz; 0,37 to 7,5 kW 380 V, 60 Hz.
- Horizontal operation up to 2,2 kW.
- Inverter applications.

OPTIONAL FEATURES

- Special voltages.

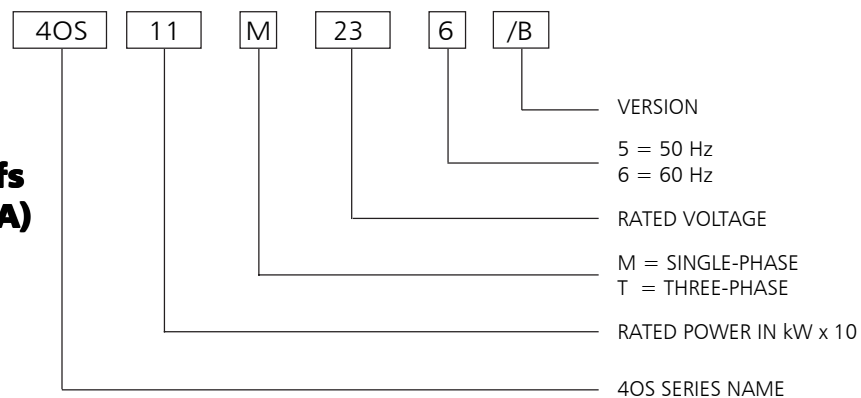
IDENTIFICATION CODE

Rewindable stator

Liquid suitable for use with foodstuffs (complies with FDA)

High starting torque

Power supply cable with extractable connector

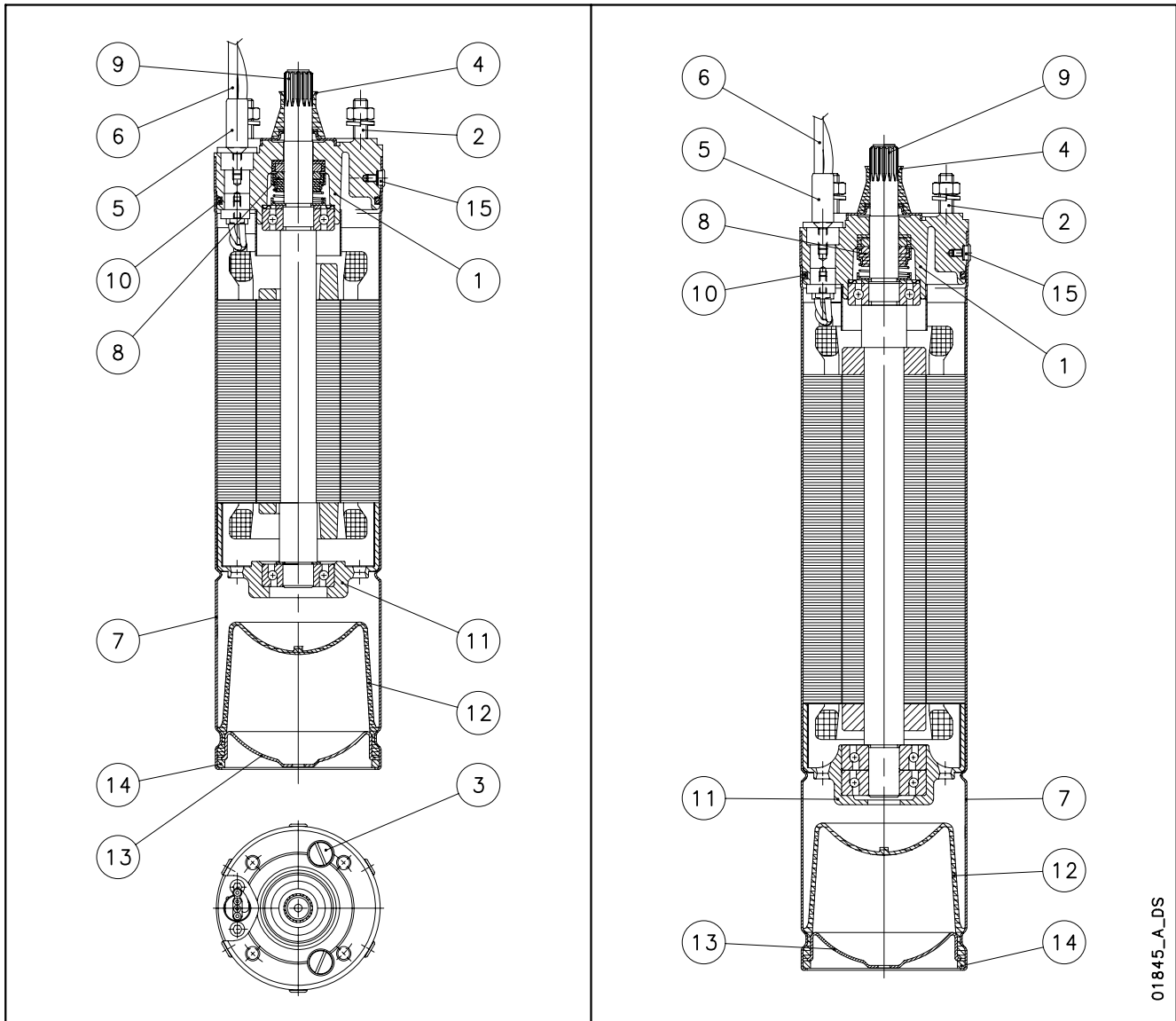


EXAMPLE : 4OS11M236/B

4OS MOTOR :
RATED POWER 1,1 kW; SINGLE-PHASE;
RATED VOLTAGE 230 V; 60 Hz; /B VERSION.



40S SERIES MOTORS MOTOR CROSS SECTION AND TABLE OF MATERIALS



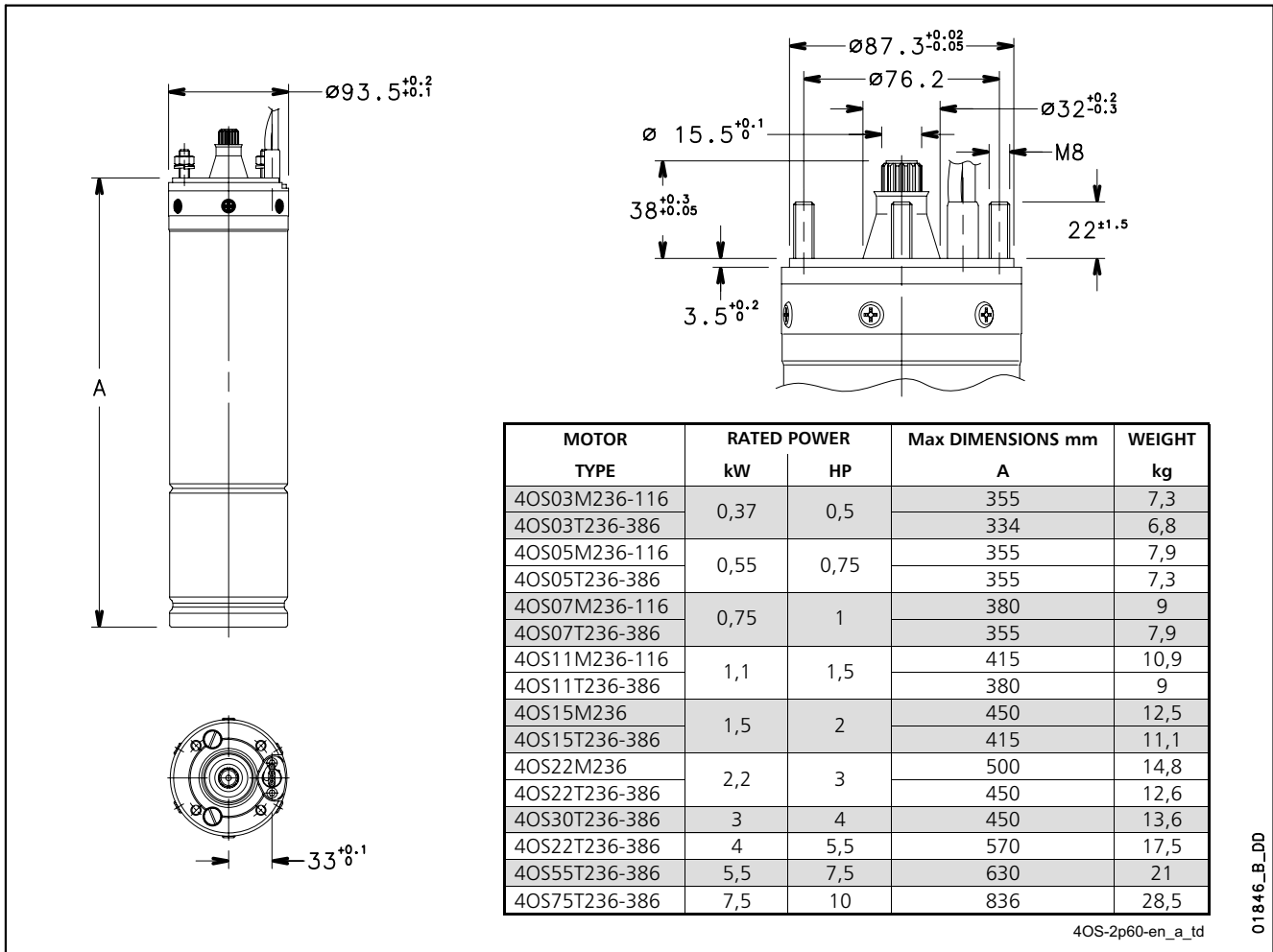
REF. N.	PART	MATERIAL	DESIGNATION	
			EUROPE	USA
1	Head	Brass	EN12165-CuZn40Pb2 (CW617N)	
2	Studs	Stainless steel	EN 10088-3-X5CrNi18-10 (1.4301)	AISI 304
3	Filling screws	Brass	EN12165-CuZn40Pb2 (CW617N)	
4	Sand guard	NBR		
5	Connector sleeve	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
6	Cable	Epdm		
7	Outer sleeve	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
8	Mechanical seal	Graphite / Aluminium oxide		
9	Shaft end for $P \leq 2.2$ kW	Stainless steel	EN 10088-3-X8CrNiS18-9 (1.4305)	AISI 303
	Shaft end for $3 \leq P \leq 7.5$ kW	Stainless steel	EN 10088-1-X2CrNiMoN22-5-3 (1.4462)	UNS S 31803
10	Elastomers	NBR		
11	Lower bracket	Cast iron	EN1561-GJL-200 (JL1030)	ASTM Class 25
12	Compensating diaphragm	NBR		
13	Lower protection	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
14	Snap ring	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
15	Screws, nuts, washers	Stainless steel	EN 10088-3-X5CrNi18-10 (1.4301)	AISI 304
	Cooling liquid	Olio atossico		



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4OS SERIES MOTORS DIMENSIONS AND WEIGHTS AT 60 Hz



4OS-2p60-en_a_td

SINGLE-PHASE OPERATING CHARACTERISTICS AT 60 Hz

MOTOR TYPE	RATED POWER		RATED VOLTAGE V	CAPACITOR		OPERATING CHARACTERISTICS AT RATED POWER				DIRECT ON-LINE STARTING			SERVICE FACTOR SF	SERVICE FACTOR SFA	MAX WATER TEMP. °C	CABLE TYPE	
	kW	HP		μF	V	A	rpm	η %	cosφ	Is/In	Ts/Tn	Tmax/Tn				N x A	L
4OS03M236	0,37	0,5	220	20	450	3,40	3495	49,7	0,99	4,00	1,23	2,98	1,6	4,50	35	4x1.5	1,75
			230			3,45	3500	47,4	0,98	4,13	1,35	3,26					
4OS05M236	0,55	0,75	220	25	450	4,66	3445	54,3	0,99	3,26	0,84	2,26	1,5	6,23	35	4x1.5	1,75
			230			4,73	3460	52,2	0,97	3,36	0,92	2,47					
4OS07M236	0,75	1	220	35	450	5,87	3460	59,8	0,97	3,85	0,74	2,47	1,4	7,41	35	4x1.5	1,75
			230			6,09	3470	56,9	0,94	3,88	0,82	2,72					
4OS11M236	1,1	1,5	220	40	450	7,61	3450	66,2	0,99	3,64	0,79	2,27	1,3	9,34	35	4x1.5	1,75
			230			7,48	3460	64,4	0,99	3,87	0,87	2,49					
4OS15M236	1,5	2	220	50	450	10,1	3435	67,8	0,99	3,90	0,63	2,26	1,25	12,2	35	4x1.5	1,75
			230			10,1	3445	66,1	0,97	4,08	0,70	2,49					
4OS22M236	2,2	3	220	50	450	15,2	3405	70,5	0,93	3,14	0,50	1,79	1,15	17,1	35	4x1.5	2,5
			230			15,7	3420	68,2	0,90	3,18	0,55	1,97					
4OS03M116	0,37	0,5	110	80	250	6,81	3495	49,8	0,99	4,00	1,23	2,97	1,6	9,02	35	4x1.5	1,75
			115			6,91	3500	47,5	0,98	4,22	1,36	3,32					
4OS05M116	0,55	0,75	110	100	250	9,68	3480	53,4	0,98	3,63	0,63	2,72	1,5	12,3	35	4x1.5	1,75
			115			10,2	3490	49,9	0,94	3,54	0,67	2,98					
4OS07M116	0,75	1	110	140	250	11,5	3480	60,7	0,98	4,05	0,56	2,94	1,4	14,5	35	4x1.5	1,75
			115			11,9	3490	57,8	0,95	4,06	0,59	3,02					
4OS11M116	1,1	1,5	110	160	250	20,1	3465	69,1	0,99	4,05	0,46	2,37	1,3	18,1	35	4x1.5	1,75
			115			14,5	3475	67,3	0,98	4,46	0,49	2,57					

Ts/Tn = ratio between starting torque and nominal torque.

Tmax/Tn = ratio between maximum torque and nominal torque.

4osm-2p60-en_b_tte



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40S SERIES MOTORS THREE-PHASE OPERATING CHARACTERISTICS AT 60 Hz

MOTOR TYPE THREE-PHASE	RATED POWER		RATED VOLTAGE V	OPERATING CHARACTERISTICS AT RATED POWER				DIRECT ON-LINE STARTING			SERVICE FACTOR SF	SERVICE FACTOR AMPS SFA	MAX WATER TEMP. °C	CABLE TYPE	
	kW	HP		A	rpm	η %	cosφ	Is/In	Ts/Tn	Tmax/Tn				N x A mm ²	L m
40S03T236	0,37	0,5	220	2,68	3485	58,5	0,62	6,40	5,71	4,73	1,6	3,17	35	4x1.5	1,75
			230	2,93	3495	56,4	0,56	6,19	6,33	5,25					
40S05T236	0,55	0,75	220	3,26	3430	62,3	0,71	5,52	4,40	3,22	1,5	4,00	35	4x1.5	1,75
			230	3,45	3450	61,1	0,65	5,48	4,91	3,59					
40S07T236	0,75	1	220	4,54	3450	66,3	0,66	5,58	4,23	3,27	1,4	5,21	35	4x1.5	1,75
			230	5,01	3465	63,7	0,59	5,32	4,69	3,62					
40S11T236	1,1	1,5	220	5,66	3425	71,5	0,72	5,45	3,80	2,89	1,3	6,53	35	4x1.5	1,75
			230	6,06	3445	70,1	0,65	5,37	4,24	3,22					
40S15T236	1,5	2	220	7,45	3430	74,4	0,71	5,73	3,64	3,01	1,25	8,40	35	4x1.5	1,75
			230	7,98	3445	72,6	0,65	5,62	4,05	3,35					
40S22T236	2,2	3	220	10,8	3425	75,7	0,71	5,53	3,63	2,90	1,15	11,6	35	4x1.5	2,5
			230	11,9	3440	72,6	0,64	5,32	4,04	3,22					
40S30T236	3	4	220	13,2	3455	76,3	0,79	5,41	2,44	2,79	1,15	14,5	35	4x1,5	2,5
			230	13,8	3470	75,7	0,72	5,46	2,72	3,11					
40S40T236	4	5,5	220	15,7	3435	78,9	0,85	5,85	1,81	2,70	1,15	17,7	35	4x1.5	2,5
			230	15,7	3455	78,8	0,81	6,17	2,02	3,01					
40S55T236	5,5	7,5	220	21,4	3415	78,6	0,86	5,48	1,63	2,51	1,15	24,4	35	4x2.5	2,5
			230	21,2	3440	78,5	0,83	5,81	1,82	2,79					
40S75T236	7,5	10	220	33,5	3460	78,7	0,75	6,28	2,53	3,41	1,15	36,8	35	4x2.5	4
			230	35,4	3475	77,6	0,68	6,26	2,81	3,79					
40S03T386	0,37	0,5	380	1,55	3485	58,5	0,62	6,40	5,71	4,73	1,6	1,83	35	4x1.5	1,75
40S05T386	0,55	0,75	380	1,88	3430	62,3	0,71	5,52	4,40	3,22	1,5	2,31	35	4x1.5	1,75
40S07T386	0,75	1	380	2,62	3450	66,3	0,66	5,58	4,23	3,27	1,4	3,01	35	4x1.5	1,75
40S11T386	1,1	1,5	380	3,27	3425	71,5	0,72	5,45	3,80	2,89	1,3	3,77	35	4x1.5	1,75
40S15T386	1,5	2	380	4,30	3430	74,4	0,71	5,73	3,64	3,01	1,25	4,85	35	4x1.5	1,75
40S22T386	2,2	3	380	6,25	3425	75,7	0,71	5,53	3,63	2,90	1,15	6,69	35	4x1.5	2,5
40S30T386	3	4	380	7,61	3455	76,3	0,79	5,41	2,44	2,79	1,15	8,35	35	4x1,5	2,5
40S40T386	4	5,5	380	9,05	3435	78,9	0,85	5,85	1,81	2,70	1,15	10,2	35	4x1.5	2,5
40S55T386	5,5	7,5	380	12,3	3415	78,6	0,86	5,48	1,63	2,51	1,15	14,1	35	4x1.5	2,5
40S75T386	7,5	10	380	19,4	3460	78,7	0,75	6,28	2,53	3,41	1,15	21,2	35	4x1.5	4

Ts/Tn = ratio between starting torque and nominal torque.

Tmax/Tn = ratio between maximum torque and nominal torque.

4ost-2p60-en_b_te

4" Submersible motors

Submersible canned motors. The choice of component materials ensures optimum operating performances, superior quality, reliability and ease of installation.

L4C Series 60 Hz



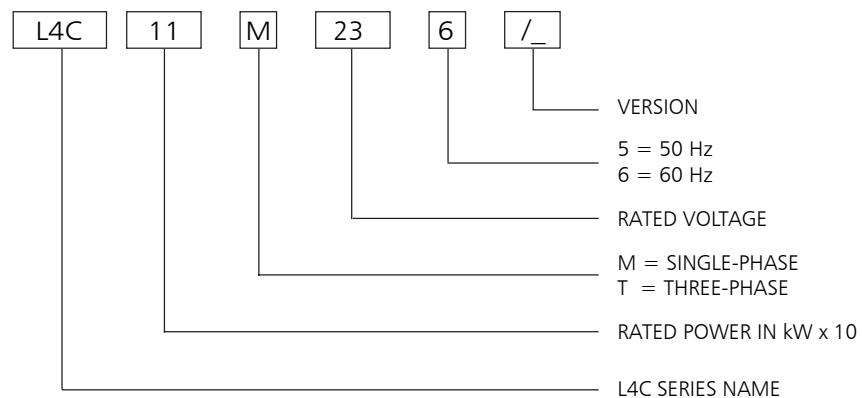
SPECIFICATIONS

- **Stainless steel** outer sleeve.
- Shaft extension and coupling dimensions to **NEMA** standards.
- Class **F insulation**.
- Protection class: **IP68**.
- Compensating bellows for internal liquid expansion.
- Axial load supported by Kingsbury type thrust bearing.
- **Lip seal** protected by sand guard.
- Maximum **immersion depth**: 300 m.
- Maximum **number of starts per hour** at regular intervals: 40 for direct start; 20 for impedance start.
- Maximum supply **voltage variations** allowed : $\pm 6\%$.
- Maximum water **temperature**: 35°C.
Max. temperature applies to motors working in a installation capable of delivering a flow of water around the motor jacket of at least 0,3 m/s.
- **Axial thrust**:
2000 N from 0,37 to 1,1 kW;
3000 N from 1,5 to 2,2 kW;
6000 N from 3 to 7,5 kW.
- **Extractable supply cable** fitted with watertight connector.
- **Versions**:
- Single-phase:
0,37 to 3,7 kW 220-230 V, 60 Hz
0,37 to 0,75 kW 110-115 V, 60 Hz (0,37 to 0,75 kW with built in automatic reset overload protection).
- Three-phase:
0,37 to 5,5 kW 220-230 V, 60 Hz
0,37 to 7,5 kW 380 V, 60 Hz.
- Can also operate in horizontal position, provided that the associated pump can apply an axial thrust of at least 100 N on the entire operating field.

OPTIONAL FEATURES

- Special voltages.
- Inverter applications.

IDENTIFICATION CODE



EXAMPLE : L4C11M236

L4C MOTOR :
RATED POWER 1,1 kW; SINGLE-PHASE;
RATED VOLTAGE 230 V; 60 Hz

High starting torque

Power supply cable with extractable connector

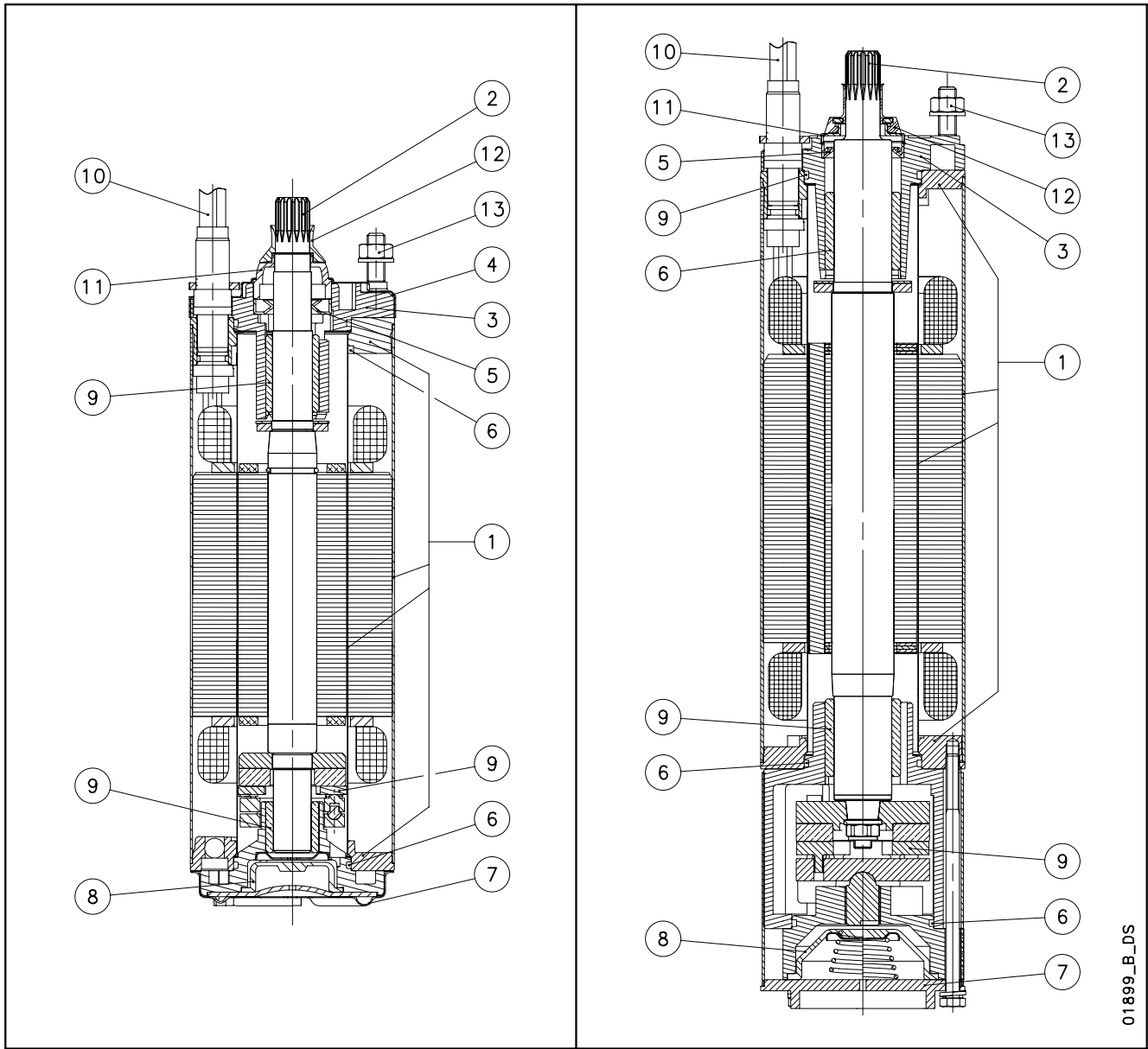


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L4C SERIES MOTORS

MOTOR CROSS SECTION AND TABLE OF MATERIALS



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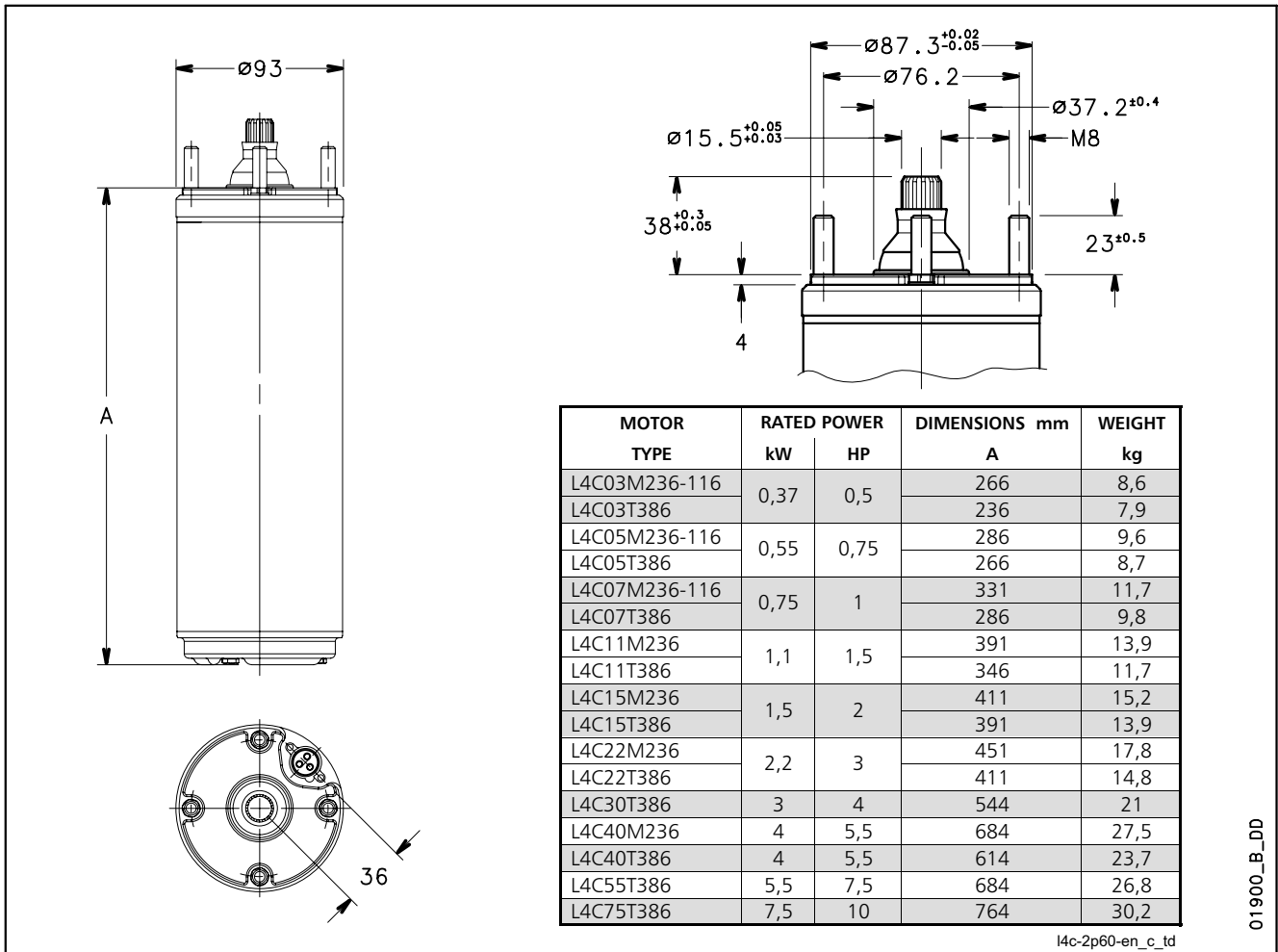
REF N°	PART	MATERIAL	DESIGNATION	
			EUROPE	USA
1	Inner and outer sleeve	Stainless steel	EN 10088-1-X2CrNi18-9 (1.4307)	AISI304L
	Flange	Carbon steel	EN 10025 - S355JR (Fe 510-B)	ASTM A105
2	Shaft extension (up to 2.2 kW)	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
	Shaft extension (from 3 kW)	Stainless steel	EN 10088-1-X2CrNiN23-4 (1.4362)	ASTM 32304
3	Upper bracket	Cast iron	EN-GJL-200	Class 25 B
4	Upper cover	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
5	Lip seal	NBR		
6	Elastomers	NBR		
7	Lower cover	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
8	Compensating bellows	EPDM		
9	Bearings	Carbon-graphite		
10	Cable	EPDM		
11	Fixed sand guard	Nylon		
12	Removable sand guard	NBR		
13	Bolts and screws	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
	Cooling liquid	Deminerlized water + antifreeze		



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L4C SERIES MOTORS DIMENSIONS AND WEIGHTS AT 60 Hz



SINGLE-PHASE OPERATING CHARACTERISTICS AT 60 Hz

MOTOR TYPE	RATED POWER		SERVICE FACTOR	RATED VOLTAGE	CAPACITOR		OPERATING CHARACTERISTICS AT FULL (S.F.) POWER				DIRECT STARTING		MAX WATER TEMPERATURE °C	CABLE TYPE	
	kW	HP			μF	V	A	rpm	η %	cosφ	Ts/Tn*	Is/In		Nc x sec mm ²	L m
L4C03M236	0,37	0,5	1,6	220	20	450	5,3	3460	55,0	0,93	0,60	4,00	35	4x1.5	1,7
				230			5,5	3480	52,0	0,89	0,65	3,87			
L4C05M236	0,55	0,75	1,5	220	25	450	7,0	3460	60,0	0,89	0,60	3,90	35	4x1.5	1,7
				230			7,4	3485	57,0	0,84	0,65	3,70			
L4C07M236	0,75	1	1,4	220	35	450	8,5	3485	59,0	0,93	0,60	5,00	35	4x1.5	1,7
				230			8,9	3500	57,0	0,89	0,65	4,80			
L4C11M236	1,1	1,5	1,3	220	40	450	12,2	3480	61,0	0,88	0,66	4,30	35	4x1.5	1,7
				230			12,7	3485	58,0	0,84	0,72	4,10			
L4C15M236	1,5	2	1,25	220	50	450	13,1	3430	65,0	0,98	0,60	4,30	35	4x1.5	1,7
				230			12,8	3455	65,0	0,97	0,65	4,60			
L4C22M236	2,2	3	1,15	220	50	450	17,6	3410	68,0	0,96	0,44	3,30	35	4x1.5	1,7
				230			17,1	3420	67,0	0,96	0,48	3,60			
L4C40M236	4	5,5	1,15	220	75	450	30,7	3440	74,0	0,93	0,32	3,80	35	4x2	2,7
				230			29,7	3460	74,0	0,92	0,34	4,10			
L4C03M116	0,37	0,5	1,6	110	80	450	10,6	3460	55,0	0,93	0,60	4,00	35	4x1.5	1,7
				115			11,0	3480	52,0	0,89	0,65	3,87			
L4C05M116	0,55	0,75	1,5	110	100	450	14,0	3460	60,0	0,89	0,60	3,90	35	4x1.5	1,7
				115			14,8	3485	57,0	0,84	0,65	3,70			
L4C07M116	0,75	1	1,4	110	140	450	17,0	3485	59,0	0,93	0,60	5,00	35	4x1.5	1,7
				115			17,8	3500	57,0	0,89	0,65	4,80			

* Ts/Tn = ratio between starting torque and nominal torque.



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L4C SERIES MOTORS THREE-PHASE OPERATING CHARACTERISTICS AT 60 Hz

MOTOR TYPE	RATED POWER		SERVICE FACTOR	RATED VOLTAGE	OPERATING CHARACTERISTICS AT FULL (S.F.) POWER				DIRECT STARTING		MAX WATER TEMPERATURE °C	CABLE TYPE	
	kW	HP			S. F.	V	A	rpm	η %	cos ϕ		Ts/Tn*	Is/In
L4C03T236	0,37	0,5	1,6	220	3,5	3400	57,0	0,78	3,2	4,6	35	4x1.5	1,7
				230	3,8	3415	51,0	0,76	3,4	5,0			
L4C05T236	0,55	0,75	1,5	220	4,6	3440	58,0	0,82	3,6	5,1	35	4x1.5	1,7
				230	4,8	3450	56,0	0,77	4,0	5,4			
L4C07T236	0,75	1	1,4	220	5,3	3450	69,0	0,74	4,2	5,3	35	4x1.5	1,7
				230	5,6	3460	65,0	0,72	4,8	5,7			
L4C11T236	1,1	1,5	1,3	220	7,5	3450	68,0	0,75	4,1	6,0	35	4x1.5	1,7
				230	7,8	3465	65,0	0,72	4,5	6,6			
L4C15T236	1,5	2	1,25	220	9,4	3470	73,0	0,71	5,0	6,1	35	4x1.5	1,7
				230	9,8	3490	70,0	0,68	5,4	6,7			
L4C22T236	2,2	3	1,15	220	11,5	3450	76,0	0,77	4,8	6,6	35	4x1.5	1,7
				230	12	3470	72,0	0,75	5,2	7,1			
L4C30T236	3	4	1,15	220	16,5	3460	73,0	0,73	4,2	7,2	35	4x1,5	2,7
				230	17,3	3480	72,0	0,70	4,4	7,5			
L4C40T236	4	5,5	1,15	220	18,8	3470	82,0	0,80	4,0	6,8	35	4x2	2,7
				230	19,2	3490	78,0	0,78	4,4	7,4			
L4C55T236	5,5	7,5	1,15	220	25,4	3480	83,0	0,80	3,8	6,9	35	4x2	2,7
				230	26	3500	80,0	0,78	4,2	7,5			
L4C03T386	0,37	0,5	1,6	380	2,3	3415	51,0	0,76	3,2	5,2	35	4x1.5	1,7
L4C05T386	0,55	0,75	1,5	380	2,9	3450	56,0	0,77	3,6	5,8	35	4x1.5	1,7
L4C07T386	0,75	1	1,4	380	3,4	3460	65,0	0,72	4,2	5,8	35	4x1.5	1,7
L4C11T386	1,1	1,5	1,3	380	4,7	3465	65,0	0,72	4,1	6,6	35	4x1.5	1,7
L4C15T386	1,5	2	1,25	380	5,9	3490	70,0	0,68	5,0	6,8	35	4x1.5	1,7
L4C22T386	2,2	3	1,15	380	7,2	3470	72,0	0,75	4,8	7,1	35	4x1.5	1,7
L4C30T386	3	4	1,15	380	9,5	3460	73,0	0,73	4,2	7,2	35	4x1,5	1,7
L4C40T386	4	5,5	1,15	380	11,6	3490	78,0	0,78	4,0	7,5	35	4x1.5	2,7
L4C55T386	5,5	7,5	1,15	380	15,7	3500	80,0	0,78	3,8	7,5	35	4x1.5	2,7
L4C75T386	7,5	10	1,15	380	20	3480	81,0	0,80	3,9	7,1	35	4x2	3,5

* Ts/Tn = ratio between starting torque and nominal torque.

l4ct-2p60-en_d_te

6" Submersible motors

Submersible canned motors. The choice of component materials ensures optimum operating performances, superior quality, reliability and ease of installation.

L6C Series 60 Hz



SPECIFICATIONS

- **Stainless steel** outer sleeve.
- Shaft extension and coupling dimensions to **NEMA** standards.
- Class **F insulation**.
- Protection class: **IP68**.
- Compensating bellows for internal liquid expansion.
- Axial load supported by Kingsbury type thrust bearing.
- **Mechanical seal** protected by sand guard.
- Maximum **immersion depth**: 250 m.
- Maximum **number of starts per hour** at regular intervals: 25 for direct start.
- Maximum supply **voltage variations** allowed: $\pm 10\%$.
- Maximum water **temperature**: 35°C.

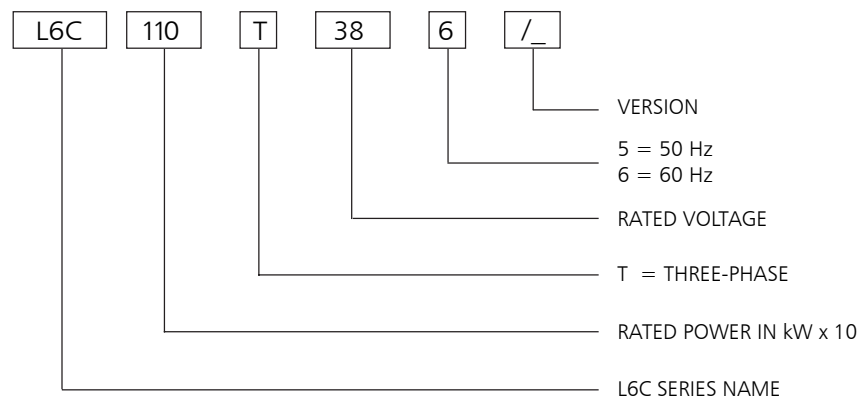
Max. temperature applies to motors working in an installation capable of delivering a flow of water around the motor jacket of at least 0,2 m/s.

- **Axial thrust**:
16000 N from 4 to 22 kW;
27000 N from 30 to 37 kW.
- **Extractable supply cable** fitted with watertight connector.
- **Versions**:
- Three-phase:
4 to 22 kW 230 V, 60 Hz.
4 to 37 kW 380 V, 60 Hz.
4 to 37 kW 460 V, 60 Hz.
- Motors with double cable outlet for star/delta start can be supplied upon request.
- Can also operate in horizontal position, provided that the associated pump can apply an axial thrust of at least 250 N on the entire operating field.
- Screws included.

OPTIONAL FEATURES

- Silicon Carbide mechanical seal.
- Special voltages.
- Inverter applications.
- PT100 temperature sensor.

IDENTIFICATION CODE



EXAMPLE : L6C110T386

L6C MOTOR :
RATED POWER 11 kW; THREE-PHASE;
RATED VOLTAGE 380 V; 60 Hz

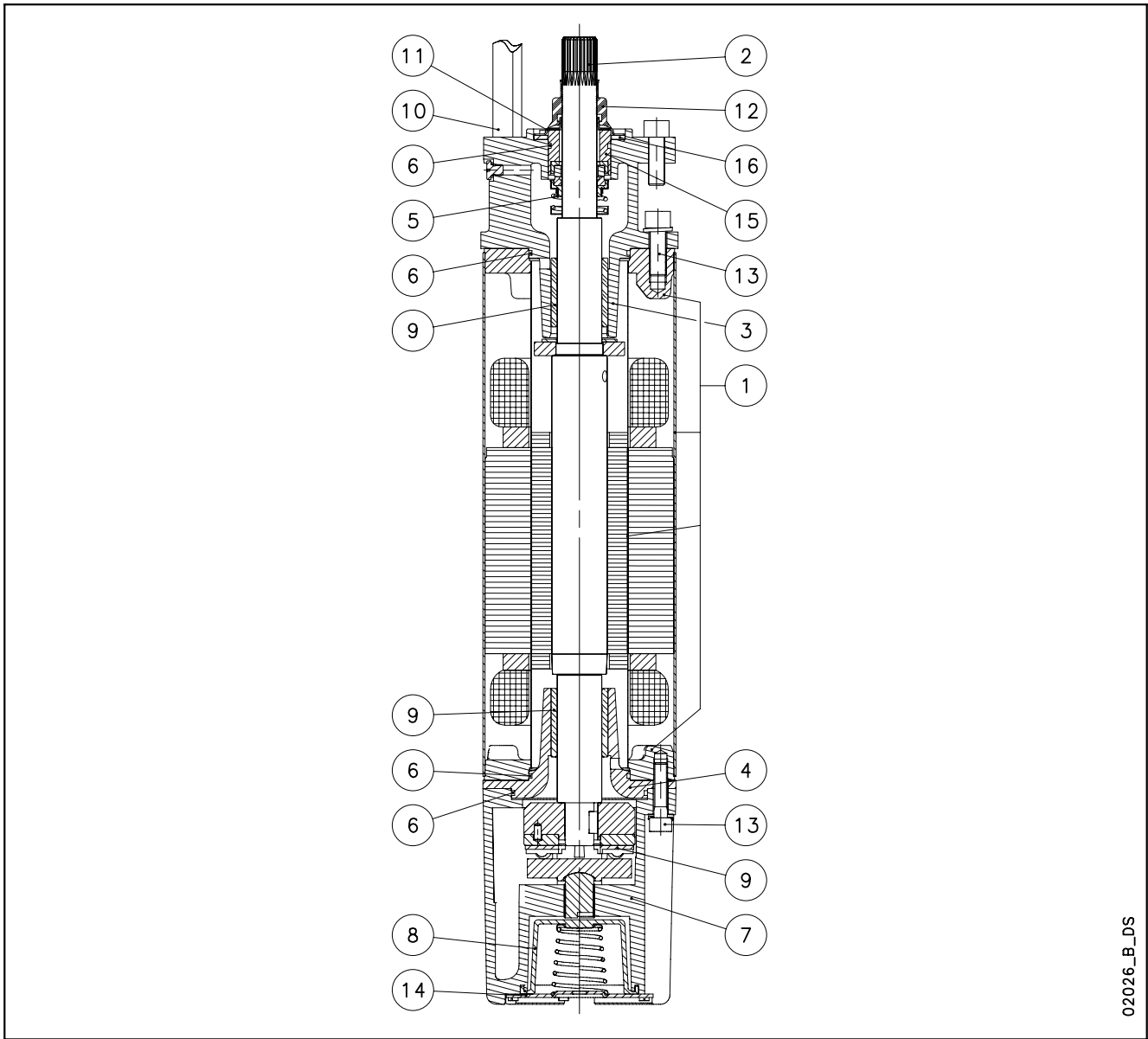
High starting torque

Power supply cable with extractable connector



L6C SERIES MOTORS

MOTOR CROSS SECTION AND TABLE OF MATERIALS



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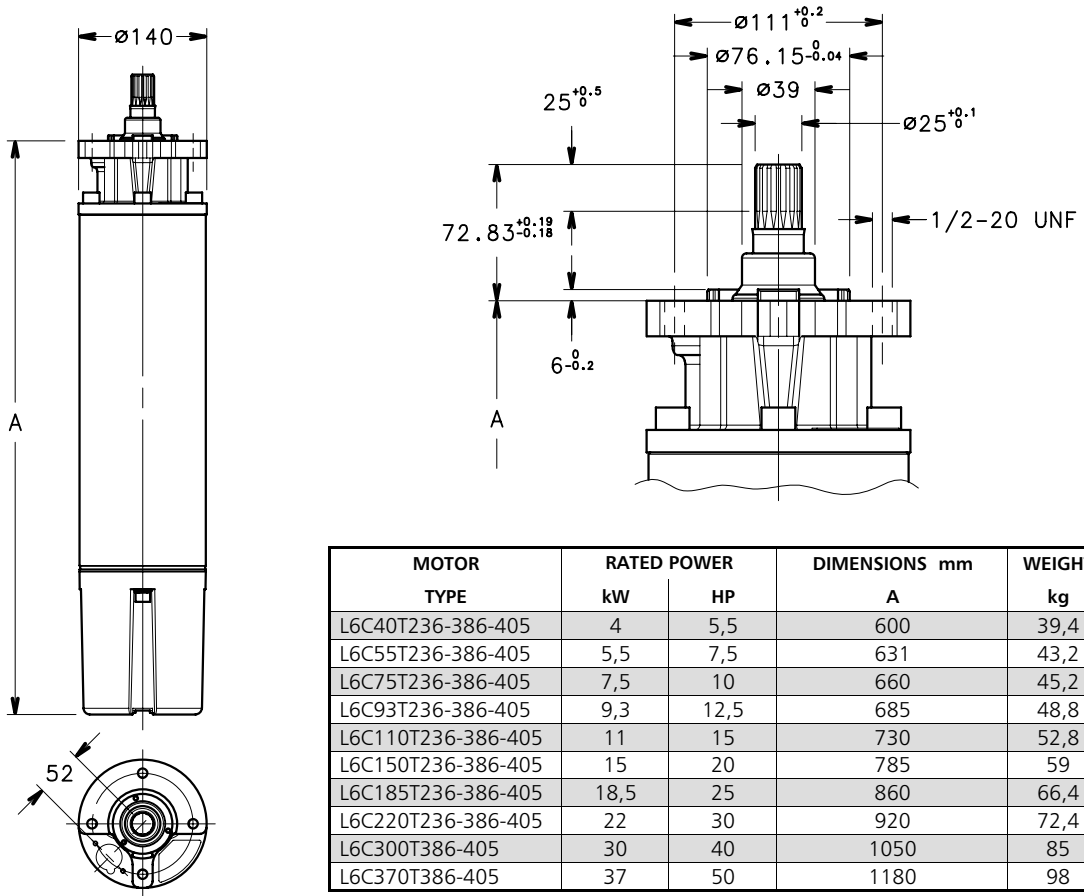
REF. N°	PART	MATERIAL	DESIGNATION	
			EUROPE	USA
1	Inner and outer sleeve	Stainless steel	EN 10088-1-X2CrNi18-9 (1.4307)	AISI304L
	Flange	Carbon steel	EN 10025 - S355JR (Fe 510-B)	ASTM A105
2	Shaft extension	Stainless steel (Duplex)	EN 10095 X3CrNiMoN27-5-2 (1.4460)	AISI329
3	Upper bracket	Cast iron	EN-GJL-200	Class 25 B
4	Intermediate bracket	Cast iron	EN-GJL-200	Class 25 B
5	Mechanical seal	Carbon graphite / Aluminium oxide		
6	Elastomers	NBR		
7	Lower bracket	Cast iron	EN-GJL-200	Class 25 B
8	Compensating bellows	NBR		
9	Bearings	Carbon-graphite		
10	Cable	EPDM		
11	Fixed sand guard	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
12	Removable sand guard	NBR		
13	Bolts and screws	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
14	Lower cover	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
15	Mechanical seal spacer	A105 nichel plated		
16	Sand guard gasket	CR neoprene		
	Cooling liquid	Demineralized water + antifreeze		



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L6C SERIES MOTORS DIMENSIONS AND WEIGHTS AT 60 Hz



MOTOR TYPE	RATED POWER		DIMENSIONS mm	WEIGHT
	kW	HP	A	kg
L6C40T236-386-405	4	5,5	600	39,4
L6C55T236-386-405	5,5	7,5	631	43,2
L6C75T236-386-405	7,5	10	660	45,2
L6C93T236-386-405	9,3	12,5	685	48,8
L6C110T236-386-405	11	15	730	52,8
L6C150T236-386-405	15	20	785	59
L6C185T236-386-405	18,5	25	860	66,4
L6C220T236-386-405	22	30	920	72,4
L6C300T386-405	30	40	1050	85
L6C370T386-405	37	50	1180	98

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L6C SERIES MOTORS THREE-PHASE OPERATING CHARACTERISTICS AT 60 Hz

MOTOR TYPE	RATED POWER		SERVICE FACTOR	RATED VOLTAGE	OPERATING CHARACTERISTICS AT FULL (S.F.) POWER				DIRECT STARTING		MAX WATER TEMPERATURE °C	CABLE TYPE	
	kW	HP			S. F.	V	A	rpm	η %	$\cos\phi$		Ts/Tn*	Is/In
L6C40T236	4	5,5	1,15	230	19,0	3470	79,0	0,80	1,7	5,45	35	4x4	4
L6C40T386				380	11,5	3470	79,0	0,80	1,7	5,50		4x4	
L6C40T405				460	9,5	3470	79,0	0,80	1,7	5,54		4x4	
L6C55T236	5,5	7,5	1,15	230	26,6	3450	77,0	0,80	1,8	5,00	35	4x4	4
L6C55T386				380	16,1	3450	77,0	0,80	1,8	5,00		4x4	
L6C55T405				460	13,1	3450	77,0	0,80	1,8	5,00		4x4	
L6C75T236	7,5	10	1,15	230	33,0	3440	80,0	0,81	2,0	5,45	35	4x4	4
L6C75T386				380	20,0	3440	80,0	0,81	2,0	5,50		4x4	
L6C75T405				460	16,5	3440	80,0	0,81	2,0	5,50		4x4	
L6C93T236	9,3	12,5	1,15	230	41,2	3450	82,0	0,80	2,1	4,80	35	4x6	4
L6C93T386				380	25,0	3450	82,0	0,80	2,1	4,80		4x4	
L6C93T405				460	20,6	3450	82,0	0,80	2,1	4,80		4x4	
L6C110T236	11	15	1,15	230	46,6	3465	85,0	0,82	2,2	5,20	35	4x6	4
L6C110T386				380	28,2	3465	85,0	0,82	2,2	5,20		4x4	
L6C110T405				460	23,3	3465	85,0	0,82	2,2	5,20		4x4	
L6C150T236	15	20	1,15	230	61,6	3440	85,0	0,83	2,4	5,45	35	4x6	4
L6C150T386				380	37,3	3440	85,0	0,83	2,4	5,45		4x4	
L6C150T405				460	30,8	3440	85,0	0,83	2,4	5,45		4x4	
L6C185T236	18,5	25	1,15	230	80,0	3440	86,0	0,80	2,5	5,70	35	4x8	4
L6C185T386				380	48,4	3440	86,0	0,80	2,5	5,70		4x6	
L6C185T405				460	40	3440	86,0	0,80	2,5	5,70		4x6	
L6C220T236	22	30	1,15	230	99,6	3440	86,0	0,77	2,6	5,80	35	4x8	4
L6C220T386				380	60,2	3440	86,0	0,77	2,6	5,80		4x6	
L6C220T405				460	49,8	3440	86,0	0,77	2,6	5,80		4x6	
L6C300T386	30	40	1,15	380	75,0	3440	85,0	0,82	2,6	6,20	35	4x8	4
L6C300T405				460	62,0	3440	85,0	0,82	2,6	6,20		4x6	
L6C370T386	37	50	1,15	380	90,0	3440	84,0	0,88	2,6	6,20	35	4x8	4
L6C370T405				460	77,0	3440	84,0	0,88	2,6	6,20		4x8	

* Ts/Tn = ratio between starting torque and nominal torque.

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6" Submersible motors

Water filled submersible motors. The choice of component materials ensures optimum operating performances, superior quality, reliability and ease of installation.

L6W Series 60 Hz



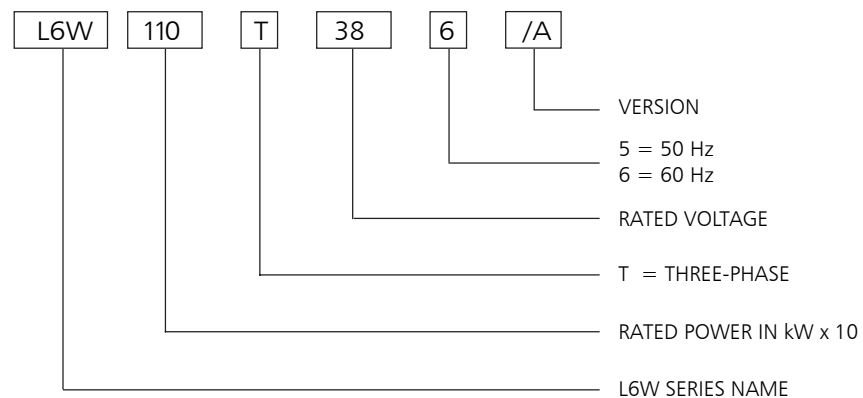
SPECIFICATIONS

- **Stainless steel** outer sleeve.
- Shaft extension and coupling dimensions to **NEMA** standards.
- **Rewindable stator** with insulated PVC winding.
- Class **Y insulation**.
- Protection class: **IP68**.
- Compensating bellows for internal liquid expansion.
- Axial load supported by Kingsbury type thrust bearing.
- **Mechanical seal** protected by sand guard.
- Maximum **immersion depth**: 350 m.
- Maximum **number of starts per hour** at regular intervals: 15.
- Maximum supply **voltage variations** allowed : $\pm 10\%$.
- Maximum water **temperature**: 25°C.
Max. temperature applies to motors working in a installation capable of delivering a flow of water around the motor jacket of at least 0,2 m/s (0,5 m/s for 37 kW).
- **Axial thrust**:
16000 N from 4 to 22 kW;
30000 N from 26 to 37 kW.
- **Power supply** cable suitable for drinkable water.
- **Versions**:
- Three-phase:
4 to 37 kW 230 V, 60 Hz.
4 to 37 kW 380 V, 60 Hz.
4 to 37 kW 460 V, 60 Hz.
- Motors with double cable outlet for star/delta start can be supplied upon request.
- All versions can operate in horizontal position, provided the impeller axial thrust is from the pump to the motor.
- Screws included.

OPTIONAL FEATURES

- Silicon Carbide mechanical seal.
- 4-pole motors.
- Special voltages.
- High temperature windings.
- Inverter applications.
- PT 100 temperature sensor.

IDENTIFICATION CODE



EXAMPLE : L6W110T386/A

L6W MOTOR :
RATED POWER 11 kW; THREE-PHASE;
RATED VOLTAGE 380 V; 60 Hz; /A VERSION

Rewindable stator

Thrust bearing Kingsbury type

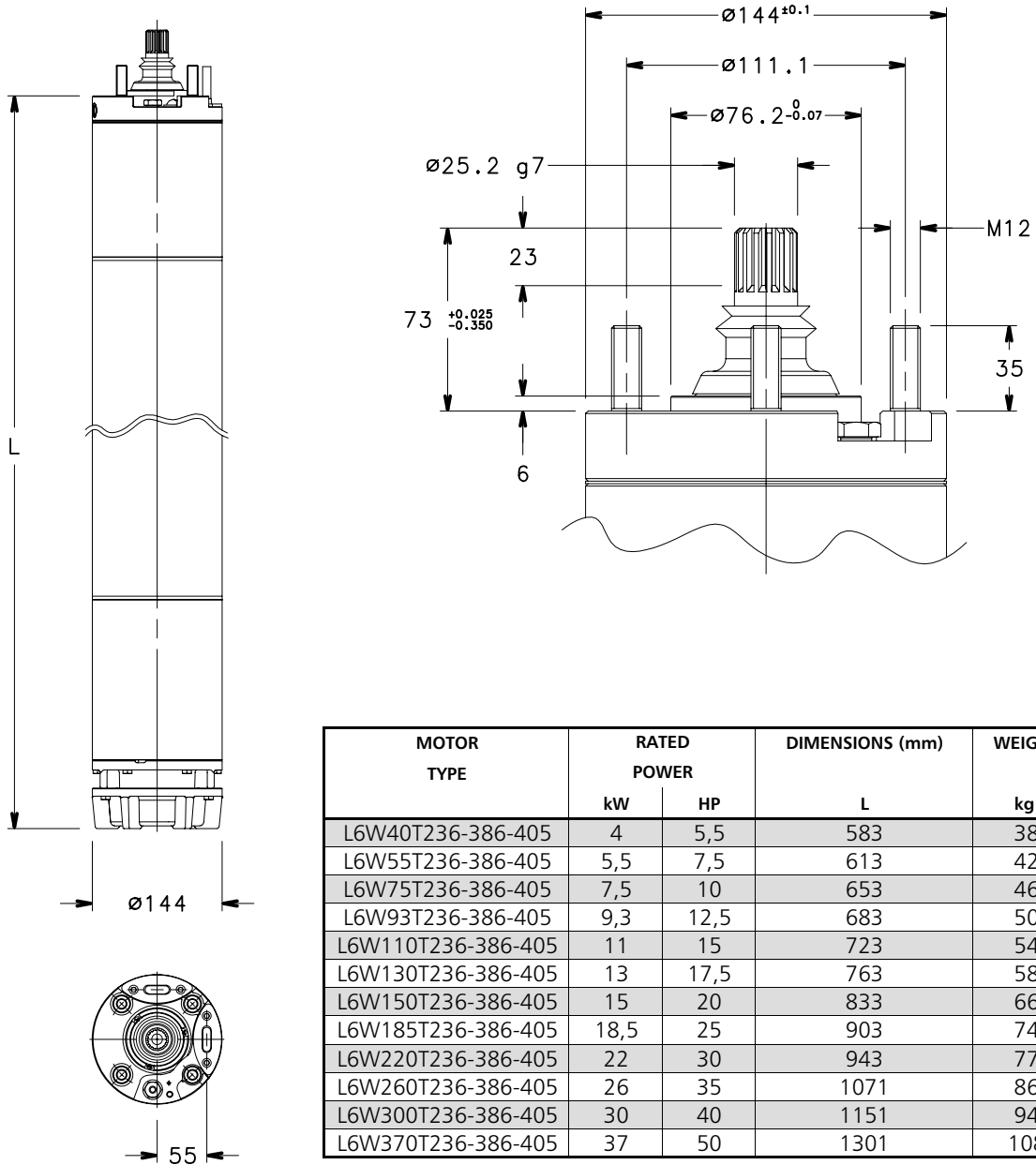
Mechanical seal



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L6W SERIES MOTORS DIMENSIONS AND WEIGHTS AT 60 Hz



MOTOR TYPE	RATED POWER		DIMENSIONS (mm)	WEIGHT
	kW	HP	L	kg
L6W40T236-386-405	4	5,5	583	38
L6W55T236-386-405	5,5	7,5	613	42
L6W75T236-386-405	7,5	10	653	46
L6W93T236-386-405	9,3	12,5	683	50
L6W110T236-386-405	11	15	723	54
L6W130T236-386-405	13	17,5	763	58
L6W150T236-386-405	15	20	833	66
L6W185T236-386-405	18,5	25	903	74
L6W220T236-386-405	22	30	943	77
L6W260T236-386-405	26	35	1071	86
L6W300T236-386-405	30	40	1151	94
L6W370T236-386-405	37	50	1301	108

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L6W SERIES MOTORS THREE-PHASE OPERATING CHARACTERISTICS AT 60 Hz

MOTOR TYPE	RATED POWER		RATED VOLTAGE	OPERATING CHARACTERISTICS AT RATED POWER				DIRECT ON-LINE STARTING			SERVICE FACTOR	SERVICE FACTOR AMPS	MAX WATER TEMP.	CABLE TYPE						
	THREE-PHASE	kW		HP	A	rpm	η %	$\cos\phi$	Is/In	Ts/Tn				Tmax/Tn	SF	SFA	°C	Sec. (mm ²)		
																		DOL	Y/D	L (m)
L6W40T236	4	5,5	230	15,9	3490	73,4	0,86	4,91	1,29	2,02	1,15	18,0	25	4	4	4				
L6W40T386			380	9,65								10,9								
L6W40T405			460	7,97								8,98								
L6W55T236	5,5	7,5	230	21,6	3490	76,4	0,84	5,59	1,67	2,55	1,15	24,1	25	4	4	4				
L6W55T386			380	13,0								14,6								
L6W55T405			460	10,8								12,1								
L6W75T236	7,5	10	230	28,7	3475	77,8	0,85	5,39	1,45	2,39	1,15	32,3	25	4	4	4				
L6W75T386			380	17,4								19,5								
L6W75T405			460	14,3								16,1								
L6W93T236	9,3	12,5	230	34,5	3475	79,2	0,84	5,89	1,97	2,54	1,15	38,8	25	4	4	4				
L6W93T386			380	20,9								23,5								
L6W93T405			460	17,3								19,4								
L6W110T236	11	15	230	42,1	3470	79,1	0,83	5,67	1,82	2,65	1,15	47,0	25	6	4	4				
L6W110T386			380	25,5								28,5		4						
L6W110T405			460	21,0								23,5								
L6W130T236	13	17,5	230	47,8	3465	80,3	0,85	5,77	1,73	2,54	1,15	54,0	25	6	4	4				
L6W130T386			380	28,9								32,7		4						
L6W130T405			460	23,9								27,0								
L6W150T236	15	20	230	54,2	3475	82,1	0,85	6,37	2,05	2,94	1,15	60,9	25	10	4	4				
L6W150T386			380	32,8								36,9		4						
L6W150T405			460	27,1								30,5								
L6W185T236	18,5	25	230	68,5	3470	82,6	0,82	6,66	2,26	3,13	1,15	76,4	25	10	6	4				
L6W185T386			380	41,5								46,2		6	4					
L6W185T405			460	34,3								38,2		4						
L6W220T236	22	30	230	79,4	3485	84,4	0,83	5,52	1,27	2,37	1,15	90,2	25	-	6	4				
L6W220T386			380	48,1								54,6		6	4					
L6W220T405			460	39,7								45,1								
L6W260T236	26	35	230	93,1	3500	83,8	0,84	5,65	1,04	2,23	1,15	106	25	-	10	4				
L6W260T386			380	56,4								64,1		10	4					
L6W260T405			460	46,6								52,9		6						
L6W300T236	30	40	230	108	3490	83,8	0,84	5,78	1,17	2,37	1,15	122	25	-	10	4				
L6W300T386			380	65,2								74,0		10	6					
L6W300T405			460	53,8								61,1		10	4					
L6W370T386	37	50	380	83,3	3480	81,8	0,83	5,26	1,16	2,34	1,15	93,7	25	-	6	4				
L6W370T405			460	68,8								77,4		-						

Ts/Tn = ratio between starting torque and nominal torque.

l6w-2p60_b_te

Tmax/Tn = ratio between maximum torque and nominal torque.



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8" Submersible motors

Water filled submersible motors. The choice of component materials ensures optimum operating performances, superior quality, reliability and ease of installation.

L8W Series 60 Hz



SPECIFICATIONS

- **Stainless steel** outer sleeve.
- Shaft extension and coupling dimensions to **NEMA** standards.
- **Rewindable stator** with insulated PVC winding.
- Class **Y insulation**.
- Protection class: **IP68**.
- Compensating bellows for internal liquid expansion.
- Axial load supported by Kingsbury type thrust bearing.
- **Mechanical seal** protected by sand guard.
- Maximum **immersion depth**: 350 m.
- Maximum **number of starts per hour** at regular intervals: 10.
- Maximum supply **voltage variations** allowed : $\pm 10\%$.
- Maximum water **temperature**: 25°C.

Max. temperature applies to motors working in a installation capable of delivering a flow of water around the motor jacket of at least 0,5 m/s.

- **Axial thrust**: 50000 N from 30 to 93 kW.
- **Power supply** cable suitable for drinkable water.
- **Versions**:
 - Three-phase:
 - 30 to 93 kW 380 V, 60 Hz.
 - 30 to 93 kW 460 V, 60 Hz.
- Motors with double cable outlet for star/delta start can be supplied upon request.

OPTIONAL FEATURES

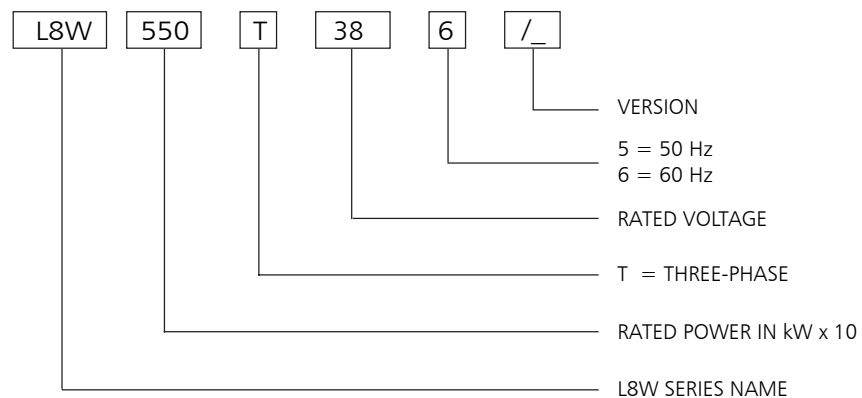
- Silicon Carbide mechanical seal.
- 4-pole motors.
- Special voltages.
- Horizontal installation.
- High temperature windings.
- Inverter applications.
- PT 100 temperature sensor.

Rewindable stator

Thrust bearing Kingsbury type

Mechanical seal

IDENTIFICATION CODE



EXAMPLE : L8W550T386

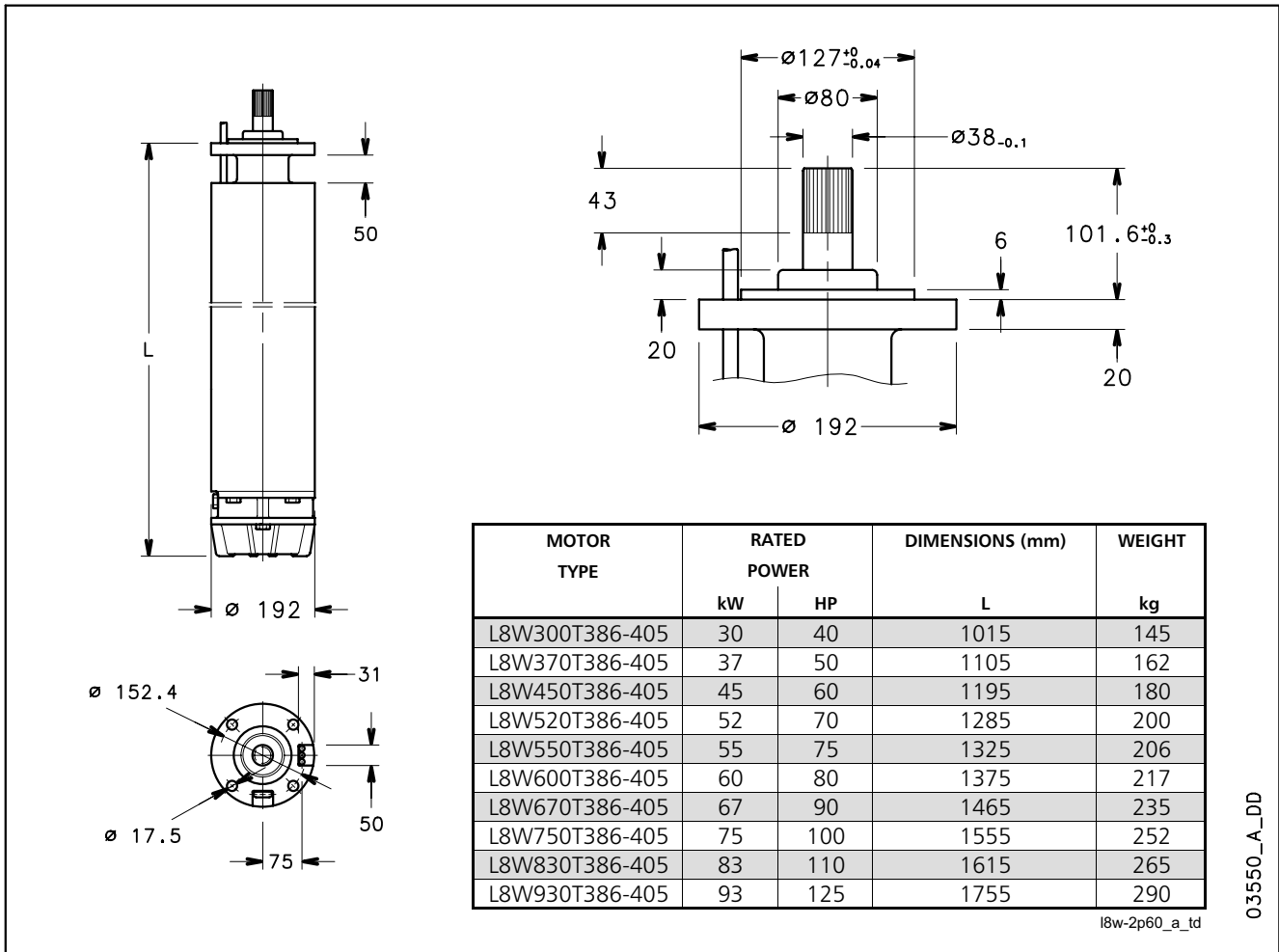
L8W MOTOR :
RATED POWER 55 kW; THREE-PHASE;
RATED VOLTAGE 380 V; 60 Hz



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L8W SERIES MOTORS DIMENSIONS AND WEIGHTS AT 60 Hz



OPERATING CHARACTERISTICS AT 60 Hz

MOTOR TYPE THREE-PHASE	RATED POWER		RATED VOLTAGE V	OPERATING CHARACTERISTICS AT RATED POWER				DIRECT ON-LINE STARTING			SERVICE FACTOR SF	SERVICE FACTOR AMPS SFA	MAX WATER TEMP. °C	CABLE TYPE		
	kW	HP		A	rpm	η %	cosφ	Is/In	Ts/Tn	Tmax/Tn				Sec. (mm ²) DOL Y/D	L (m)	
L8W300T386	30	40	380	67,8	3490	82,0	0,82	5,50	1,04	2,22	1,15	78,0	25	10	6	5,5
L8W300T405			460	56,0	3470	81,0	0,83	5,50	1,04	2,22				10	4	
L8W370T386	37	50	380	83,0	3490	82,5	0,82	5,71	1,39	2,21	1,15	95,6	25	16	6	5,5
L8W370T405			460	69,0	3470	81,0	0,83	5,26	1,04	2,23				10	6	
L8W450T386	45	60	380	98,0	3495	84,0	0,83	5,5	1,28	2,22	1,15	113	25	16	10	5,5
L8W450T405			460	81	3470	82,0	0,83	4,98	0,98	2,22				16	6	
L8W520T386	52	70	380	117	3485	83,0	0,82	5,66	1,31	2,22	1,15	133	25	25	10	5,5
L8W520T405			460	95,5	3475	82,5	0,83	5,56	1,06	2,22				16	10	
L8W550T386	55	75	380	119	3490	84,0	0,84	5,72	1,35	2,22	1,15	137	25	25	10	5,5
L8W550T405			460	98	3470	83,0	0,84	5,44	1,06	2,24				16	10	
L8W600T386	60	80	380	129	3480	84,0	0,84	5,15	1,29	2,22	1,15	150	25	25	16	5,5
L8W600T405			460	107	3480	83,0	0,85	5,07	1,04	2,23				16	10	
L8W670T386	67	90	380	142	3485	84,5	0,85	5,36	1,21	2,22	1,15	166	25	35	16	5,5
L8W670T405			460	120	3475	83,0	0,85	5,13	1,03	2,23				25	10	
L8W750T386	75	100	380	161	3490	84,5	0,84	5,50	1,20	2,22	1,15	186	25	35	16	5,5
L8W750T405			460	135	3480	83,0	0,85	5,04	1,01	2,22				25	16	
L8W830T386	83	110	380	178	3500	84,5	0,84	5,04	1,10	2,22	1,15	207	25	35	16	5,5
L8W830T405			460	149	3475	82,5	0,85	4,79	0,97	2,28				35	16	
L8W930T386	93	125	380	197	3495	84,5	0,85	4,68	1,31	2,22	1,15	230	25	50	25	5,5
L8W930T405			460	165	3475	82,5	0,86	4,6	1,02	2,2				35	16	

Ts/Tn = ratio between starting torque and nominal torque.

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Tmax/Tn = ratio between maximum torque and nominal torque.

10" Submersible motors

Water filled submersible motors. The choice of component materials ensures optimum operating performances, superior quality, reliability and ease of installation.

L10W Series 60 Hz



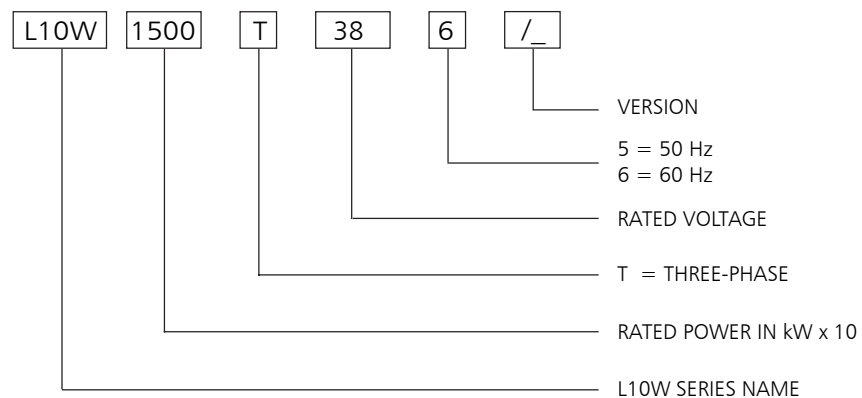
SPECIFICATIONS

- **Stainless steel** outer sleeve.
- **Rewindable stator** with insulated PVC winding.
- Class **Y insulation**.
- Protection class: **IP68**.
- Compensating bellows for internal liquid expansion.
- Axial load supported by Kingsbury type thrust bearing.
- **Mechanical seal** protected by sand guard.
- Maximum **immersion depth**: 350 m.
- Maximum **number of starts per hour** at regular intervals: 8.
- Maximum supply **voltage variations** allowed : $\pm 10\%$.
- Maximum water **temperature**: 25°C.
Max. temperature applies to motors working in a installation capable of delivering a flow of water around the motor jacket of at least 0,5 m/s.
- **Axial thrust**: 65000 N from 93 to 150 kW.
- **Power supply** cable suitable for drinkable water.
- **Versions**:
 - Three-phase: 93 to 150 kW 380 V, 60 Hz.
 - 93 to 150 kW 460 V, 60 Hz.
- Motors with double cable outlet for star/delta start can be supplied upon request.

OPTIONAL FEATURES

- Silicon Carbide mechanical seal.
- 4-pole motors.
- Special voltages.
- Horizontal installation.
- High temperature windings.
- Inverter applications.
- PT 100 temperature sensor.

IDENTIFICATION CODE



EXAMPLE : L10W1500T386

L10W MOTOR :
RATED POWER 150 kW; THREE-PHASE;
RATED VOLTAGE 380 V; 60 Hz

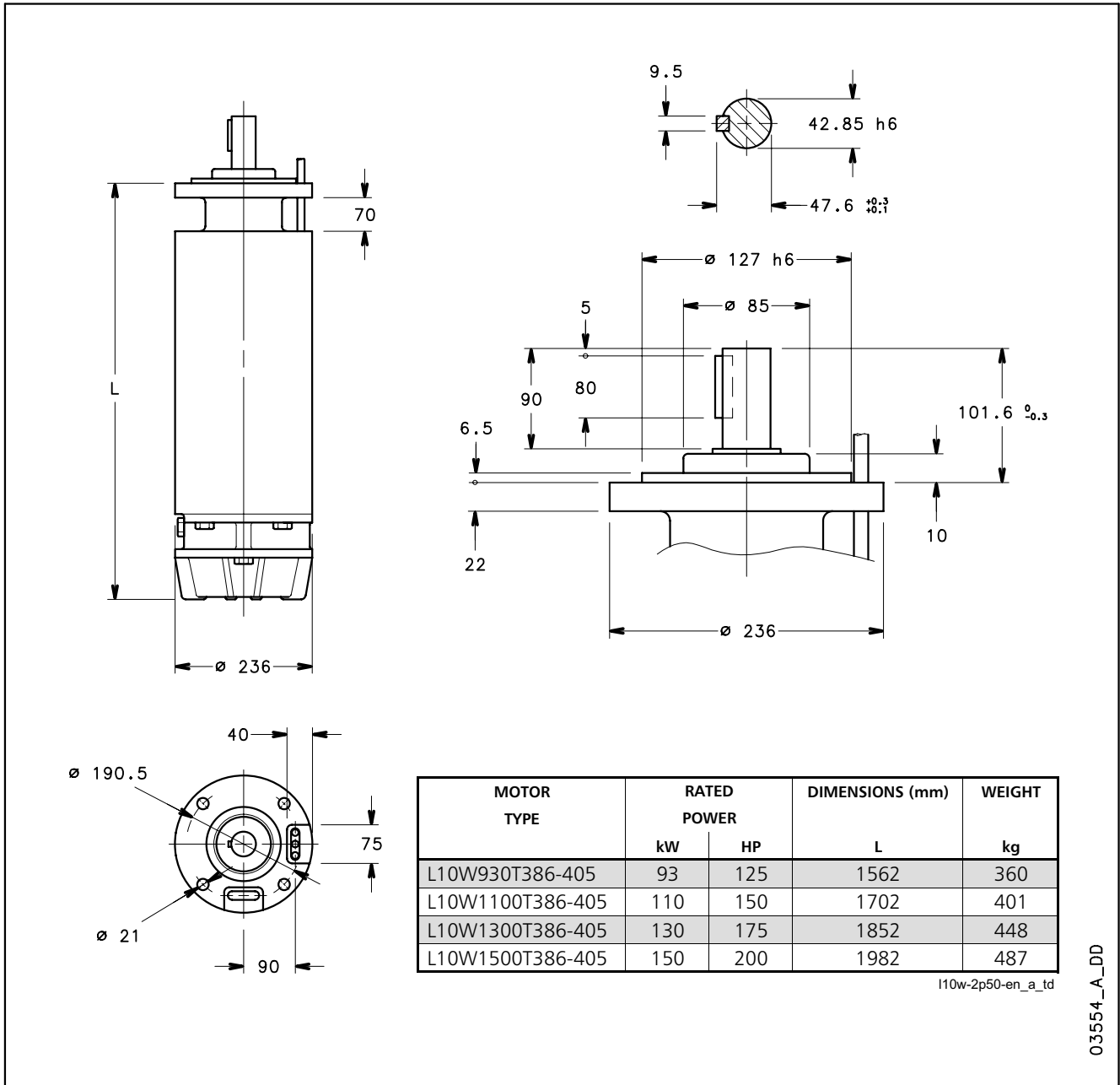
- Rewindable stator**
- Thrust bearing Kingsbury type**
- Mechanical seal**



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L10W SERIES MOTORS DIMENSIONS AND WEIGHTS AT 60 Hz



OPERATING CHARACTERISTICS AT 60 Hz

MOTOR TYPE THREE-PHASE	RATED POWER		RATED VOLTAGE	OPERATING CHARACTERISTICS AT RATED POWER				DIRECT ON-LINE STARTING			SERVICE FACTOR	SERVICE FACTOR AMPS	MAX WATER TEMP. °C	CABLE TYPE		
	kW	HP		A	rpm	η %	cosφ	Is/In	Ts/Tn	Tmax/Tn				DOL	Y/D	L (m)
	V															
L10W930T386	93	125	380	197	3510	84,0	0,85	5,18	1,28	2,22	1,15	231	25	50	25	5
L10W930T405			460	165	3500	83,0	0,85	5,55	1,02	2,22				192	35	
L10W1100T386	110	150	380	233	3525	84,5	0,84	6,45	1,66	2,22	1,15	272	25	70	25	5
L10W1100T405			460	191	3510	84,0	0,86	6,38	1,43	2,19				225	50	
L10W1300T386	130	175	380	282	3515	84,0	0,84	5,78	1,56	2,22	1,15	321	25	70	35	5
L10W1300T405			460	228	3510	84,0	0,86	6,31	1,50	2,22				265	50	
L10W1500T386	150	200	380	323	3525	84,0	0,84	5,88	1,67	2,22	1,15	373	25	70	35	5
L10W1500T405			460	262	3510	84,0	0,86	6,24	1,56	2,22				306	70	

Ts/Tn = ratio between starting torque and nominal torque.

Tmax/Tn = ratio between maximum torque and nominal torque.

i10w-2p60_a_te

12" Submersible motors

L12W Series 60 Hz



Rewindable stator

Thrust bearing Kingsbury type

Mechanical seal

Water filled submersible motors. The choice of component materials ensures optimum operating performances, superior quality, reliability and ease of installation.

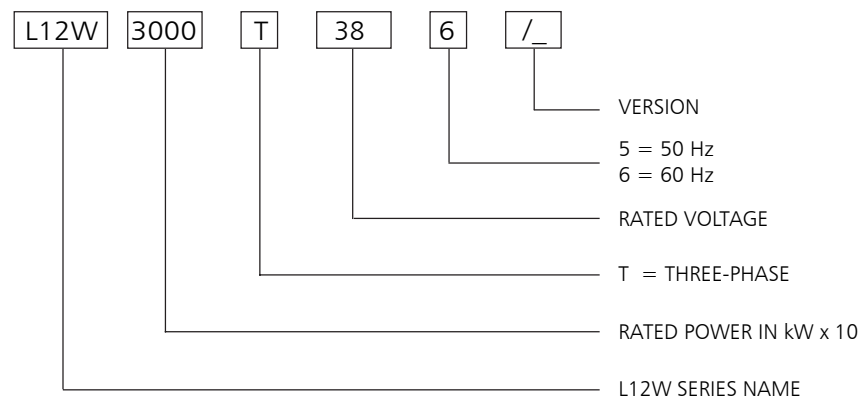
SPECIFICATIONS

- **Stainless steel** outer sleeve.
- **Rewindable stator** with insulated PVC winding.
- Class **Y insulation**.
- Protection class: **IP68**.
- Compensating bellows for internal liquid expansion.
- Axial load supported by Kingsbury type thrust bearing.
- **Mechanical seal** protected by sand guard.
- Maximum **immersion depth**: 350 m.
- Maximum **number of starts per hour** at regular intervals: 4.
- Maximum supply **voltage variations** allowed : $\pm 10\%$.
- Maximum water **temperature**: 25°C.
Max. temperature applies to motors working in a installation capable of delivering a flow of water around the motor jacket of at least 0,5 m/s.
- **Axial thrust**: 65000 N from 185 to 300 kW.
- **Power supply** cable suitable for drinkable water.
- **Versions**:
 - Three-phase: 185 to 300 kW 380 V, 60 Hz.
 - 185 to 300 kW 460 V, 60 Hz.
- Motors with double cable outlet for star/delta start can be supplied upon request.

OPTIONAL FEATURES

- Silicon Carbide mechanical seal.
- 4-pole motors.
- Special voltages.
- Horizontal installation.
- High temperature windings.
- Inverter applications.
- PT 100 temperature sensor.

IDENTIFICATION CODE



EXAMPLE : L12W3000T386

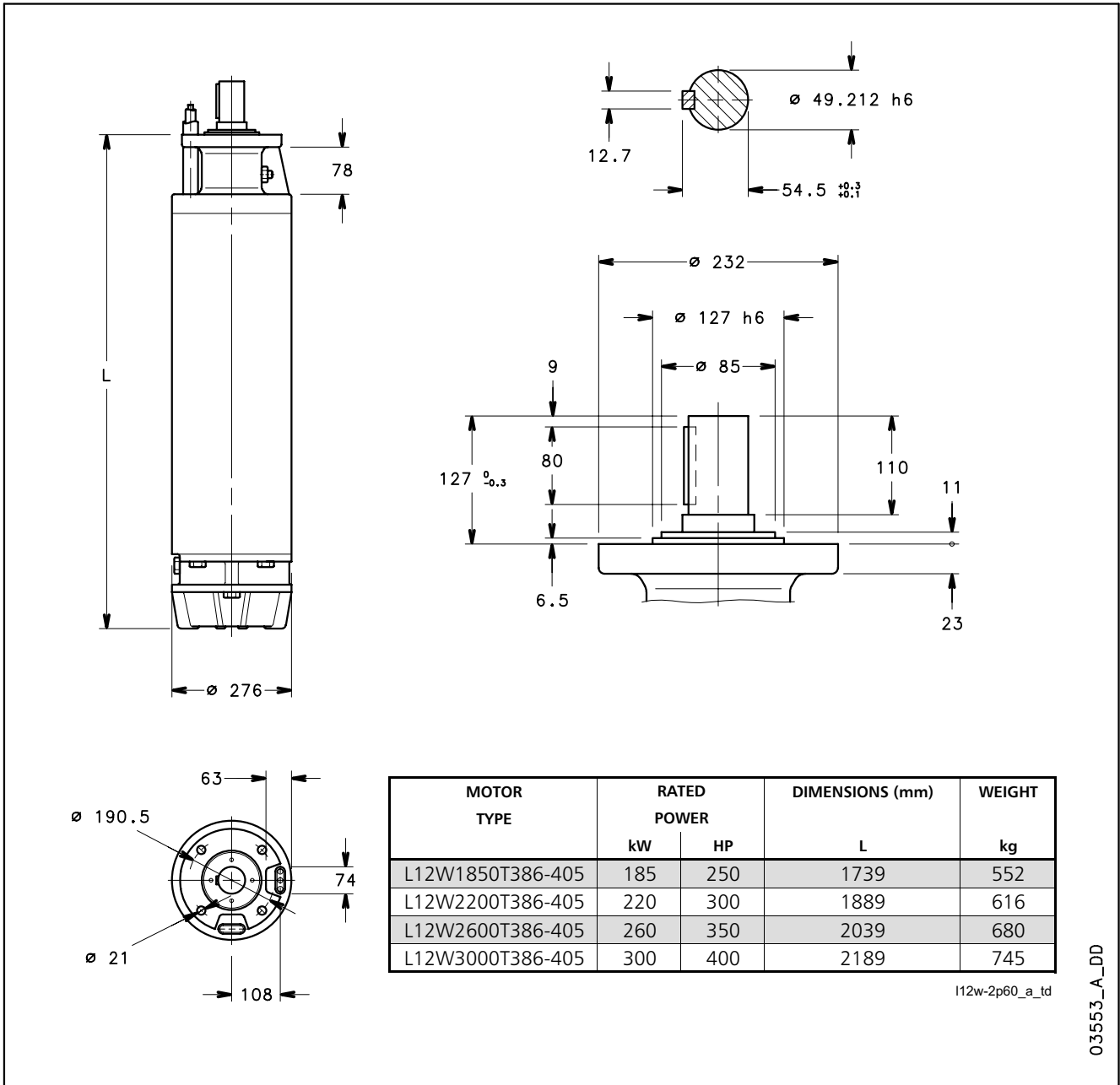
L12W MOTOR :
RATED POWER 300 kW; THREE-PHASE;
RATED VOLTAGE 380 V; 60 Hz



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L12W SERIES MOTORS DIMENSIONS AND WEIGHTS AT 60 Hz



OPERATING CHARACTERISTICS AT 60 Hz

MOTOR TYPE THREE-PHASE	RATED POWER		RATED VOLTAGE V	OPERATING CHARACTERISTICS AT RATED POWER				DIRECT STARTING			SERVICE FACTOR SF	SERVICE FACTOR AMPS SFA	MAX WATER TEMP. °C	CABLE TYPE		
	kW	HP		A	rpm	η %	cosφ	Is/In	Ts/Tn	Tmax/Tn				DOL	Y/D	L (m)
L12W1850T386	185	250	380	391	3525	85,5	0,84	6,72	1,55	2,22	1,15	453	25	95	50	5
L12W1850T405			460	321	3525	86,0	0,84	6,59	1,50	2,22				70	35	
L12W2200T386	220	300	380	468	3510	85,0	0,84	5,87	1,39	2,22	1,15	538	25	120	70	5
L12W2200T405			460	380	3525	86,0	0,84	6,66	1,41	2,22				95	50	
L12W2600T386	260	350	380	553	3510	85,0	0,84	5,31	1,25	2,22	1,15	632	25	150	70	5
L12W2600T405			460	446	3525	86,0	0,85	6,05	1,41	2,22				120	50	
L12W3000T386	300	400	380	631	3510	85,0	0,85	5,31	1,11	2,22	1,15	725	25	-	95	5
L12W3000T405			460	515	3520	86,0	0,85	6,43	1,18	2,22				2x70	70	

Ts/Tn = ratio between starting torque and nominal torque.

Tmax/Tn = ratio between maximum torque and nominal torque.

l12w-2p60_a_te



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L6W - L8W - L10W - L12W SERIES MOTORS TABLE OF MATERIALS

REF. N°	PART	MATERIAL	DESIGNATION	
			EUROPE	USA
1	Upper bracket	Cast iron	EN-GJL-200	Class 25 B
2	Spacer	Cast iron	EN-GJL-200	Class 25 B
3	Stud bolts + nuts	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
4	Removable sand guard	NBR		
5	Mechanical seal cover	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
6	Cable	EPR		
7	Cable seal	NBR		
8	Mechanical seal	Carbon graphite / Aluminium oxide		
9	Elastomers	NBR		
10	External sleeve	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
11	Lower bracket	Cast iron	EN-GJL-200	Class 25 B
12	Thrust bearing bracket	Cast iron	EN-GJL-200	Class 25 B
13	Diaphragm	EPDM		
14	Lower cover	Cast iron	EN-GJL-200	Class 25 B
15	Bolts and screws	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI304
16	Cooling liquid	Water + antifreeze		

Lw-2p50-en_a_tm



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ACCESSORIES

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Lightning protection	43



40S - L4C SERIES MOTORS MOTOR - CONTROL PANEL COMBINATION TABLE

MOTOR TYPE 40S - 4" SINGLE-PHASE	RATED POWER		RATED CURRENT	CAPACITOR	PANEL TYPE				
	kW	HP	A	μF / 450 V	QSC...	QSCS...			
	0,37	0,5	4,5	20	...036	...036			
	0,55	0,75	6,1	25	...056	...056			
	0,75	1	7,3	35	...076	...076			
	1,1	1,5	9,1	40	...116	...116			
	1,5	2	12,0	50	...156	...156			
	2,2	3	17,4	50	...226	...226			

For different voltages, please contact our sales network.

4OSM-2p60-en_a_tc

MOTOR TYPE 40S - 4" THREE-PHASE	RATED POWER		RATED CURRENT	PANEL TYPE					
	kW	HP	A	QTD/...	Q3D/...	Q3I/...	Q3A/...	Q3Y/...	Q3SF/...
	0,37	0,5	1,8	...05-07	...05-07	-	-	-	-
	0,55	0,75	2,3	...05-07	...05-07	-	-	-	-
	0,75	1	3,0	...07-15	...07-15	-	-	-	-
	1,1	1,5	3,8	...07-15	...07-15	-	-	-	-
	1,5	2	4,9	...15-22	...15-22	-	-	-	-
	2,2	3	6,7	...22-40	...22-40	-	-	-	-
	3	4	8,4	...22-40	...22-40	-	-	-	-
	4	5,5	10,2	...40-75	...40-75	...40-75	...40-75	...40-75	...75
	5,5	7,5	14,1	...40-75	...40-75	...40-75	...40-75	...40-75	...150
	7,5	10	20,5	-	...92-110	...92-110	...92-110	...92-110	...150

For different voltages, please contact our sales network.

4OST-2p60-en_a_tc

MOTOR TYPE L4C - 4" SINGLE PHASE	RATED POWER		CURRENT AT S.F.	CAPACITOR	PANEL TYPE				
	kW	HP	A	μF / 450 V	QSC/...	QSCS/...			
	0,37	0,5	5,5	20	...036	...036			
	0,55	0,75	7,4	25	...056A	...056A			
	0,75	1	8,9	35	...076	...076			
	1,1	1,5	12,7	40	...116A	...116A			
	1,5	2	12,8	50	...156	...156			
	2,2	3	17,6	50	...226	...226			
	3,7	5	30,7	75	...406	(1)			

(1) Available on request

L4cm-2p60_b_tc

For different voltages please contact our sales network

MOTOR TYPE L4C - 4" THREE PHASE	RATED POWER		CURRENT AT S.F.	PANEL TYPE					
	kW	HP	A	QTD/...	Q3D/...	Q3I/...	Q3A/...	*Q3Y/...	Q3SF/...
	0,37	0,5	2,3	...05-07	...05-07	-	-	-	-
	0,55	0,75	2,9	...07-15	...07-15	-	-	-	-
	0,75	1	3,4	...07-15	...07-15	-	-	-	-
	1,1	1,5	4,7	...15-22	...15-22	-	-	-	-
	1,5	2	5,9	...15-22	...15-22	-	-	-	-
	2,2	3	7,2	...22-40	...22-40	-	-	-	-
	3	4	9,5	...22-40	...22-40	-	-	-	...75
	4	5,5	11,6	...40-75	...40-75	...40-75	...40-75	...40-75	...75
	5,5	7,5	15,7	...40-75	...40-75	...40-75	...40-75	...40-75	...75
	7,5	10	20	-	...92-110	...92-110	...92-110	...92-110	...150

For different voltages please contact our sales network

L4ct-2p60_b_tc

* Require 6-wire suitable motor



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L6C - L6W - L8W SERIES MOTORS MOTOR - CONTROL PANEL COMBINATION TABLE

MOTOR TYPE L6C - 6" THREE-PHASE	RATED POWER		CURRENT AT S.F. 380 V A	PANEL TYPE					
	kW	HP		QTD/...	Q3D/...	*Q3Y/...	Q3I/...	Q3A/...	Q3SF/...
	4	5,5		11,5	...40-75	...40-75	...40-75	...40-75	...40-75
5,5	7,5	16,1	...75-92	...75-92	...75-92	...75-92	...75-92	...75	
7,5	10	20	-	...92-110	...92-110	...92-110	...92-110	...150	
9,3	12,5	25	-	...110-150	...110-150	...110-150	...110-150	...150	
11	15	28,2	-	...110-150	...110-150	...110-150	...110-150	...150	
15	20	37,3	-	...150-185	...150-185	...150-185	...150-185	...220	
18,5	25	48,4	-	...185-220	...185-220	...185-220	...185-220	...300	
22	30	60,2	-	...220-300	...220-300	...220-300	...220-300	...370	
30	40	75	-	-	...370-450	...370-450	...370-450	...450	
37	50	90	-	-	...450-550	...450-550	...450-550	...550	

For different voltages please contact our sales network

L6c-2p60_b_tc

* require 6-wire suitable motor

MOTOR TYPE L6W - 6" THREE-PHASE	RATED POWER		CURRENT AT S.F. 380 V A	PANEL TYPE					
	kW	HP		QTD/...	Q3D/...	Q3I/...	Q3A/...	*Q3Y/...	Q3SF/...
	4	5,5		10,9	...40-75	...40-75	...40-75	...40-75	...40-75
5,5	7,5	14,6	...40-75	...40-75	...40-75	...40-75	...40-75	...75	
7,5	10	19,5	...75-92	...75-92	...75-92	...75-92	...75-92	...150	
9,3	12,5	23,5	-	...92-110	...92-110	...92-110	...92-110	...150	
11	15	28,5	-	...110-150	...110-150	...110-150	...110-150	...150	
13	17,5	32,7	-	...150-185	...150-185	...150-185	...150-185	...220	
15	20	36,9	-	...150-185	...150-185	...150-185	...150-185	...220	
18,5	25	46,2	-	...185-220	...185-220	...185-220	...185-220	...300	
22	30	54,6	-	...220-300	...220-300	...220-300	...220-300	...300	
26	35	64,1	-	...300-370	...300-370	...300-370	...300-370	...370	
30	40	74,0	-	...300-370	...300-370	...300-370	...300-370	...370	
37	50	93,7	-	-	...450-550	...450-550	...450-550	...550	

For different voltages, please contact our sales network.

L6w-2p60-en_a_tc

* require 6-wire suitable motor

MOTOR TYPE L8W - 8" THREE-PHASE	RATED POWER		CURRENT AT S.F. 380 V A	PANEL TYPE					
	kW	HP		Q3D/...	Q3I/...	Q3A/...	Q3SF/...		
	30	40		78	(1)	...370-450	...370-450	...450	
37	50	96	(1)	...450-550	...450-550	...550			
45	60	113	(1)	...550-750	...550-750	...590			
52	70	133	(1)	...550-750	...550-750	...750			
55	75	137	-	...550-750	...550-750	...750			
60	80	150	-	...750-900	...750-900	...900			
67	90	166	-	...750-900	...750-900	...900			
75	100	186	-	...900-1100	...900-1100	...900			
83	110	207	-	...900-1100	...900-1100	...1100			
93	125	230	-	...1100-1320	...1100-1320	...1100			

(1) On request.

L8w-2p60-en_b_tc

For different voltages, please contact our sales network.



L10W - L12W SERIES MOTORS MOTOR - CONTROL PANEL COMBINATION TABLE

MOTOR TYPE L10W - 10" THREE-PHASE	RATED POWER		CURRENT AT S.F. 380 V A	PANEL TYPE					
	kW	HP		Q3I/...	Q3A/...	Q3SF/...			
	93	125	231	...1100-1320	...1100-1320	...1100			
	110	150	272	...1320-1600	...1320-1600	(1)			
	130	175	321	...1600-2000	...1600-2000	(1)			
	150	200	373	...1600-2000	...1600-2000	(1)			

(1) On request.

L10w-2p60-en_b_tc

For different voltages, please contact our sales network.

MOTOR TYPE L12W - 12" THREE-PHASE	RATED POWER		CURRENT AT S.F. 380 V A	PANEL TYPE					
	kW	HP		Q3I/...	Q3A/...	Q3SF/...			
	185	250	453	...2500-3150	...2500-3150	(1)			
	220	300	538	...2500-3150	...2500-3150	(1)			
	260	350	632	(1)	(1)	(1)			
	300	400	725	(1)	(1)	(1)			

(1) On request.

L12w-2p60-en_b_tc

For different voltages, please contact our sales network.

Single-phase Electric Panel

APPLICATIONS

- Protection and control of a single-phase submersible electric pump for 4" wells.

QSC Series

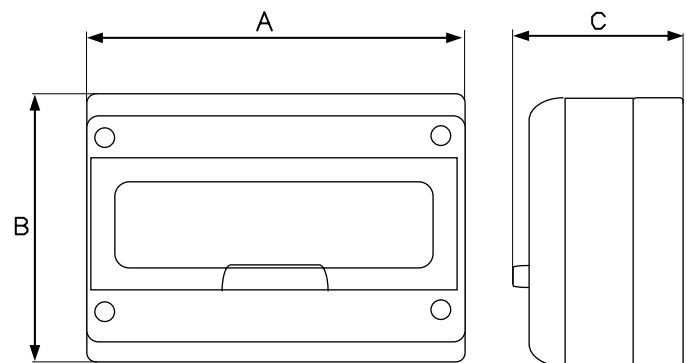


SPECIFICATIONS

- Main switch for manual control.
- Supply voltage: 1 x 230 V \pm 10%.
- Frequency: 60 Hz.
- Power: 0,37 to 4 kW.
- Direct motor start.
- Protection class: IP55.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Plastic enclosure.
- Incorporated capacitor.
- Main switch with thermal protection.

OPTIONAL ACCESSORIES

- DPF single-phase module for overvoltage protection (lightning protector).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg	CAPACITOR μ F/450V
		kW	HP		A mm	B mm	C mm		
QSC/036	1 x 230 V \pm 10 %	0,37	0,5	4 \div 6,3	280	220	160	2	20
QSC/056	1 x 230 V \pm 10 %	0,55	0,75	4 \div 6,3	280	220	160	2	25
QSC/056A	1 x 230 V \pm 10 %	0,75	1	6,3 \div 10	280	220	160	2	25
QSC/076	1 x 230 V \pm 10 %	0,75	1	6,3 \div 10	280	220	160	2	35
QSC/116	1 x 230 V \pm 10 %	1,1	1,5	6,3 \div 10	280	220	160	2	40
QSC/116A	1 x 230 V \pm 10 %	1,5	2	10 \div 16	280	220	160	2	40
QSC/156	1 x 230 V \pm 10 %	1,5	2	10 \div 16	280	220	160	2	50
QSC/226	1 x 230 V \pm 10 %	2,2	3	16 \div 20	280	220	160	2	50
QSC/406	1 x 230 V \pm 10 %	4	5,5	25 \div 32	280	220	160	2	75

Single-phase Electric Panel

APPLICATIONS

- Protection and control of a single-phase submersible electric pump for 4" wells.

QSCS Series



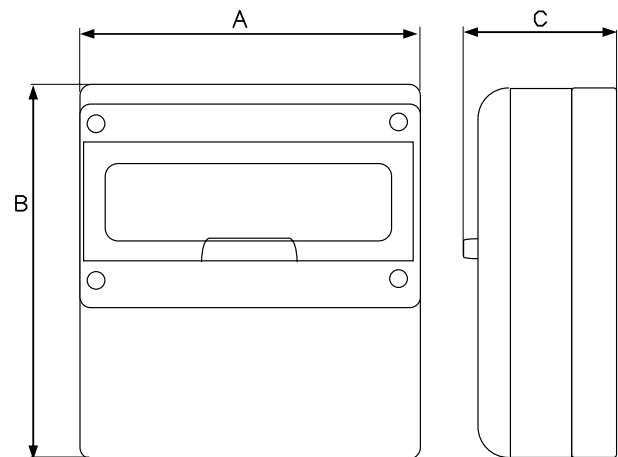
SPECIFICATIONS

- Automatic control through an external enable contact.
- Supply voltage: 1 x 230 V \pm 10%.
- Frequency: 60 Hz.
- Power: 0,37 to 2,2 kW.
- Direct motor start.
- Protection class: IP55.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Plastic enclosure.
- Incorporated capacitor.

- Main switch with thermal protection.
- Dry running control with float or minimum pressure switch (available separately).

OPTIONAL ACCESSORIES

- DPF single-phase module for overvoltage protection (lightning protector).
- SLD series 24 V level kit. Probe module for protection against dry running (set of three electrodes included in the supply).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg	CAPACITOR μ F/450V
		kW	HP		A mm	B mm	C mm		
QSCS/036	1 x 230 V \pm 10 %	0,37	0,5	4 \div 6,3	280	370	160	3	20
QSCS/056	1 x 230 V \pm 10 %	0,55	0,75	4 \div 6,3	280	370	160	3	25
QSCS/056A	1 x 230 V \pm 10 %	0,75	1	6,3 \div 10	280	370	160	3	25
QSCS/076	1 x 230 V \pm 10 %	0,75	1	6,3 \div 10	280	370	160	3	35
QSCS/116	1 x 230 V \pm 10 %	1,1	1,5	6,3 \div 10	280	370	160	3	40
QSCS/116A	1 x 230 V \pm 10 %	1,5	2	10 \div 16	280	370	160	3	40
QSCS/156	1 x 230 V \pm 10 %	1,5	2	10 \div 16	280	370	160	3	50
QSCS/226	1 x 230 V \pm 10 %	2,2	3	16 \div 20	280	370	160	3	50

Three-phase Electric Panel

APPLICATIONS

- Protection and control of a three-phase surface or submersible electric pump.

QTD Series



SPECIFICATIONS

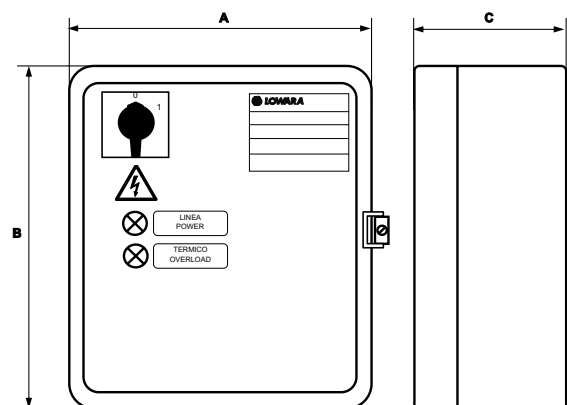
- Control through an external enable contact.
- Supply voltage: 3 x 400 V \pm 10%.
- Frequency: 50/60 Hz.
- Power: 0,25 to 9,2 kW.
- Direct motor start.
- Short-circuit and overload protection.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Metal enclosure.
- Ready for installation of dry running control float or pressure switch (to be ordered separately).
- Power and thermal overload indicator lights.

OPTIONAL ACCESSORIES

- VR3 three-phase module for overvoltage protection (lightning protector).
- SLD series 24 V level kit. Probe module for protection against dry running (set of three electrodes included in the supply).

SELECTION

- For a suitable choice of control panel, be sure the electrical input of the motor (Ampere) is included in the rated current value mentioned in the table below.



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A mm	B mm	C mm	
QTD/02-03	3 x 400 V \pm 10 %	0,25-0,37	0,33-0,50	0,63 \div 1	235	265	150	5,8
QTD/03-05	3 x 400 V \pm 10 %	0,37-0,55	0,55-0,75	1 \div 1,6	235	265	150	5,8
QTD/05-07	3 x 400 V \pm 10 %	0,55-0,75	0,75-1	1,6 \div 2,5	235	265	150	5,8
QTD/07-15	3 x 400 V \pm 10 %	0,75-1,5	1-2	2,5 \div 4	235	265	150	5,8
QTD/15-22	3 x 400 V \pm 10 %	1,5-2,2	2-3	4 \div 6,3	235	265	150	5,8
QTD/22-40	3 x 400 V \pm 10 %	2,2-4	3-5,5	6,3 \div 10	235	265	150	5,8
QTD/40-75	3 x 400 V \pm 10 %	4-7,5	5,5-10	10 \div 16	235	265	150	5,8
QTD/75-92	3 x 400 V \pm 10 %	7,5-9,2	10-12,5	16 \div 20	235	265	150	5,8

Three-phase Electric Panel

APPLICATIONS

- Protection and control of a three-phase surface or submersible electric pump.

Q3D Series



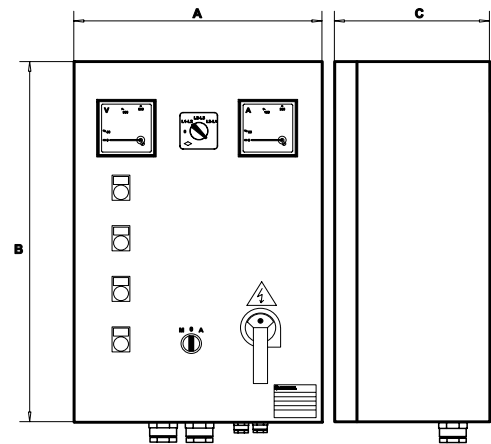
SPECIFICATIONS

- Manual control through an Auto/Man selector switch.
- Automatic control through an external enable contact.
- Supply voltage: 3 x 400 V \pm 10%.
- Frequency: 50/60 Hz.
- 24 V AC low voltage auxiliary circuit.
- Power: 0,25 to 37 kW.
- Direct motor start.
- Short-circuit and overload protection.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Metal enclosure.
- Power, pump running, thermal overload and dry running indicator lights.

- Ready for installation of dry running control float or pressure switch (to be ordered separately). Can be equipped with electronic protection module with electrodes.

OPTIONAL ACCESSORIES

- SLD series 24 V level kit. Probe module for protection against dry running (set of three electrodes included in the supply).
- Float.
- Pressure switch.
- VR3/SCA3 three-phase module for overvoltage protection (lightning protector).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A mm	B mm	C mm	
Q3D/02-03	3 x 400 V \pm 10 %	0,25-0,37	0,33-0,50	0,63 ÷ 1	300	400	200	15
Q3D/03-05	3 x 400 V \pm 10 %	0,37-0,55	0,5-0,75	1 ÷ 1,6	300	400	200	15
Q3D/05-07	3 x 400 V \pm 10 %	0,55-0,75	0,75-1	1,6 ÷ 2,5	300	400	200	15
Q3D/07-15	3 x 400 V \pm 10 %	0,75-1,5	1-2	2,5 ÷ 4	300	400	200	15
Q3D/15-22	3 x 400 V \pm 10 %	1,5-2,2	2-3	4 ÷ 6,3	300	400	200	15
Q3D/22-40	3 x 400 V \pm 10 %	2,2-4	3-5,5	6,3 ÷ 10	300	400	200	15
Q3D/40-75	3 x 400 V \pm 10 %	4-7,5	5,5-10	10 ÷ 16	300	400	200	15
Q3D/75-92	3 x 400 V \pm 10 %	7,5-9,2	10-12,5	16 ÷ 20	300	400	200	15
Q3D/92-110	3 x 400 V \pm 10 %	9,2-11	12,5-15	20 ÷ 25	300	400	200	20
Q3D/110-150	3 x 400 V \pm 10 %	11-15	15-20	22 ÷ 32	400	500	200	20
Q3D/150-185	3 x 400 V \pm 10 %	15-18,5	20-25	28 ÷ 40	400	500	200	20
Q3D/185-220	3 x 400 V \pm 10 %	18,5-22	25-30	36 ÷ 50	400	600	200	27
Q3D/220-300	3 x 400 V \pm 10 %	22-30	30-40	45 ÷ 63	400	600	200	27
Q3D/300-370	3 x 400 V \pm 10 %	30-37	40-50	57 ÷ 75	400	600	200	27

Three-phase Electric Panel

Q3Y Series



APPLICATIONS

- Protection and control of a three-phase surface or submersible electric pump.

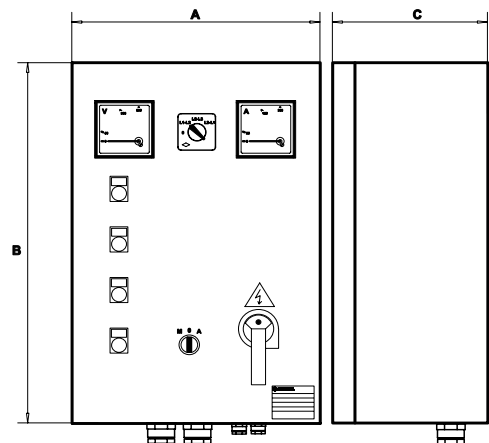
SPECIFICATIONS

- Manual control through an Auto/Man selector switch.
- Automatic control through an external enable contact.
- Supply voltage: 3 x 400 V \pm 10%.
- Frequency: 50/60 Hz.
- 24 V AC low voltage auxiliary circuit.
- Power: 4 to 315 kW.
- Star-delta starting.
- Short-circuit and overload protection.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Metal enclosure.
- Power, pump running, thermal overload and dry running indicator lights.

- Ready for installation of dry running control float or pressure switch (to be ordered separately). Can be equipped with electronic protection module with electrodes.

OPTIONAL ACCESSORIES

- SLD series 24 V level kit. Probe module for protection against dry running (set of three electrodes included in the supply).
- Float.
- Pressure switch.
- VR3/SCA3 three-phase module for overvoltage protection (lightning protector).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A mm	B mm	C mm	
Q3Y/40-75	3 x 400 V \pm 10 %	4-7,5	5,5-10	10 \div 16	400	600	200	23
Q3Y/75-92	3 x 400 V \pm 10 %	7,5-9,2	10-12,5	16 \div 20	400	600	200	23
Q3Y/92-110	3 x 400 V \pm 10 %	9,2-11	12,5-15	20 \div 25	400	600	200	23
Q3Y/110-150	3 x 400 V \pm 10 %	11-15	15-20	22 \div 32	400	600	200	23
Q3Y/150-185	3 x 400 V \pm 10 %	15-18,5	20-25	28 \div 40	400	600	200	23
Q3Y/185-220	3 x 400 V \pm 10 %	18,5-22	25-30	36 \div 50	500	700	200	32
Q3Y/220-300	3 x 400 V \pm 10 %	22-30	30-40	45 \div 63	500	700	200	32
Q3Y/300-370	3 x 400 V \pm 10 %	30-37	40-50	57 \div 75	600	800	250	68
Q3Y/370-450	3 x 400 V \pm 10 %	37-45	50-60	70 \div 90	600	800	250	80
Q3Y/450-550	3 x 400 V \pm 10 %	45-55	60-75	80 \div 108	600	800	250	80
Q3Y/550-750	3 x 400 V \pm 10 %	55-75	75-100	105 \div 138	600	800	250	109
Q3Y/750-900	3 x 400 V \pm 10 %	75-90	100-125	138 \div 185	600p	1300p	300p	109
Q3Y/900-1100	3 x 400 V \pm 10 %	90-110	125-150	175 \div 210	600p	1500p	300p	120
Q3Y/1100-1320	3 x 400 V \pm 10 %	110-132	150-180	210 \div 260	800p	1700p	400p	130
Q3Y/1320-1600	3 x 400 V \pm 10 %	132-160	180-218	250 \div 305	800p	1700p	400p	130
Q3Y/1600-2000	3 x 400 V \pm 10 %	160-200	218-273	290 \div 400	800p	1900p	400p	140
Q3Y/2000-2500	3 x 400 V \pm 10 %	200-250	273-340	400 \div 460	1000p	1900p	400p	180
Q3Y/2500-3150	3 x 400 V \pm 10 %	250-315	340-430	450 \div 580	1000p	1900p	400p	180

Dimensions note : P indicates floor mounted control panel.

CB-Q3Y-en_b_te

Three-phase Electric Panel

Q3I Series



APPLICATIONS

- Protection and control of a three-phase surface or submersible electric pump.

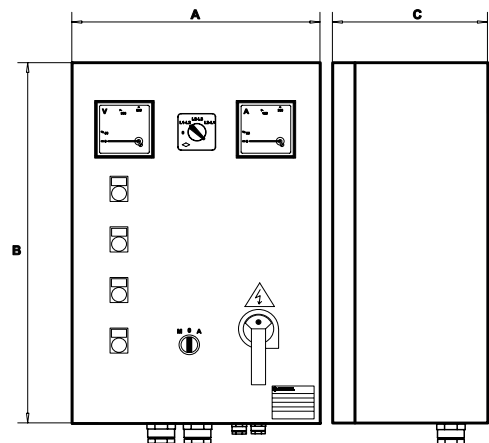
SPECIFICATIONS

- Manual control through an Auto/Man selector switch.
- Automatic control through an external enable contact.
- Supply voltage: 3 x 400 V \pm 10%.
- Frequency: 50/60 Hz.
- 24 V AC low voltage auxiliary circuit.
- Power: 4 to 315 kW.
- Impedance start.
- Short-circuit and overload protection.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Metal enclosure.
- Power, pump running, thermal overload and dry running indicator lights.

- Ready for installation of dry running control float or pressure switch (to be ordered separately). Can be equipped with electronic protection module with electrodes.

OPTIONAL ACCESSORIES

- SLD series 24 V level kit. Probe module for protection against dry running (set of three electrodes included in the supply).
- Float.
- Pressure switch.
- VR3/SCA3 three-phase module for overvoltage protection (lightning protector).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A mm	B mm	C mm	
Q3I/40-75	3 x 400 V \pm 10 %	4-7,5	5,5-10	10 \div 16	400	600	250	35
Q3I/75-92	3 x 400 V \pm 10 %	7,5-9,2	10-12,5	16 \div 20	400	600	250	35
Q3I/92-110	3 x 400 V \pm 10 %	9,2-11	12,5-15	20 \div 25	400	600	250	35
Q3I/110-150	3 x 400 V \pm 10 %	11-15	15-20	22 \div 32	500	700	250	50
Q3I/150-185	3 x 400 V \pm 10 %	15-18,5	20-25	28 \div 40	500	700	250	50
Q3I/185-220	3 x 400 V \pm 10 %	18,5-22	25-30	36 \div 50	500	700	250	50
Q3I/220-300	3 x 400 V \pm 10 %	22-30	30-40	45 \div 63	500	700	250	65
Q3I/300-370	3 x 400 V \pm 10 %	30-37	40-50	57 \div 75	500	700	250	65
Q3I/370-450	3 x 400 V \pm 10 %	37-45	50-60	70 \div 90	600	900	250	65
Q3I/450-550	3 x 400 V \pm 10 %	45-55	60-75	80 \div 108	600p	1300p	300p	100
Q3I/550-750	3 x 400 V \pm 10 %	55-75	75-100	105 \div 138	600p	1300p	300p	100
Q3I/750-900	3 x 400 V \pm 10 %	75-90	100-125	138 \div 185	600p	1500p	300p	100
Q3I/900-1100	3 x 400 V \pm 10 %	90-110	125-150	175 \div 210	600p	1500p	300p	100
Q3I/1100-1320	3 x 400 V \pm 10 %	110-132	150-180	210 \div 260	800p	1700p	400p	150
Q3I/1320-1600	3 x 400 V \pm 10 %	132-160	180-218	250 \div 305	800p	1700p	400p	150
Q3I/1600-2000	3 x 400 V \pm 10 %	160-200	218-273	290 \div 400	800p	1900p	400p	160
Q3I/2000-2500	3 x 400 V \pm 10 %	200-250	273-340	400 \div 460	1000p	1900p	400p	180
Q3I/2500-3150	3 x 400 V \pm 10 %	250-315	340-430	450 \div 580	1000p	1900p	400p	200

Dimensions note : P indicates floor mounted control panel.

CB-Q3I-en_b_te

Three-phase Electric Panel

Q3A Series



APPLICATIONS

- Protection and control of a three-phase surface or submersible electric pump.

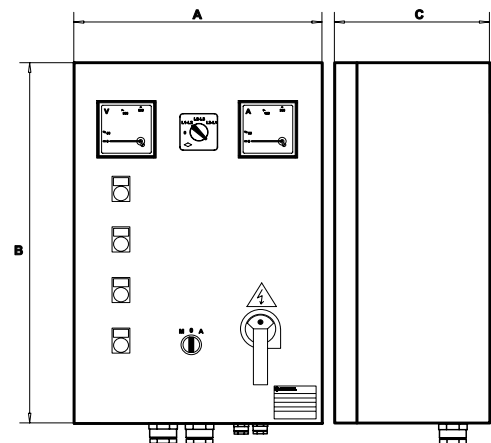
SPECIFICATIONS

- Manual control through an Auto/Man selector switch.
- Automatic control through an external enable contact.
- Supply voltage: 3 x 400 V \pm 10%.
- Frequency: 50/60 Hz.
- 24 V AC low voltage auxiliary circuit.
- Power: 4 to 315 kW.
- Starting autotransformer.
- Short-circuit and overload protection.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Metal enclosure.
- Power, pump running, thermal overload and dry running indicator lights.

- Ready for installation of dry running control float or pressure switch (to be ordered separately). Can be equipped with electronic protection module with electrodes.

OPTIONAL ACCESSORIES

- SLD series 24 V level kit. Probe module for protection against dry running (set of three electrodes included in the supply).
- Float.
- Pressure switch.
- VR3/SCA3 three-phase module for overvoltage protection (lightning protector).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A mm	B mm	C mm	
Q3A/40-75	3 x 400 V \pm 10 %	4-7,5	5,5-10	10 \div 16	500	700	250	50
Q3A/75-92	3 x 400 V \pm 10 %	7,5-9,2	10-12,5	16 \div 20	500	700	250	50
Q3A/92-110	3 x 400 V \pm 10 %	9,2-11	12,5-15	20 \div 25	500	700	250	50
Q3A/110-150	3 x 400 V \pm 10 %	11-15	15-20	22 \div 32	500	700	250	50
Q3A/150-185	3 x 400 V \pm 10 %	15-18,5	20-25	28 \div 40	500	700	250	50
Q3A/185-220	3 x 400 V \pm 10 %	18,5-22	25-30	36 \div 50	500	700	250	50
Q3A/220-300	3 x 400 V \pm 10 %	22-30	30-40	45 \div 63	600	900	300	80
Q3A/300-370	3 x 400 V \pm 10 %	30-37	40-50	57 \div 75	600	900	300	80
Q3A/370-450	3 x 400 V \pm 10 %	37-45	50-60	70 \div 90	600p	1300p	300p	90
Q3A/450-550	3 x 400 V \pm 10 %	45-55	60-75	80 \div 108	600p	1500p	300p	120
Q3A/550-750	3 x 400 V \pm 10 %	55-75	75-100	105 \div 138	600p	1500p	300p	120
Q3A/750-900	3 x 400 V \pm 10 %	75-90	100-125	138 \div 185	600p	1700p	400p	150
Q3A/900-1100	3 x 400 V \pm 10 %	90-110	125-150	175 \div 210	600p	1700p	400p	150
Q3A/1100-1320	3 x 400 V \pm 10 %	110-132	150-180	210 \div 260	800p	1900p	400p	200
Q3A/1320-1600	3 x 400 V \pm 10 %	132-160	180-218	250 \div 305	800p	1900p	400p	200
Q3A/1600-2000	3 x 400 V \pm 10 %	160-200	218-273	290 \div 400	800p	1900p	400p	230
Q3A/2000-2500	3 x 400 V \pm 10 %	200-250	273-340	400 \div 460	1000p	1900p	400p	230
Q3A/2500-3150	3 x 400 V \pm 10 %	250-315	340-430	450 \div 580	1000p	1900p	400p	250

Dimensions note : P indicates floor mounted control panel.

CB-Q3A-en_b_te

Three-phase Electric Panel

Q3SF Series



APPLICATIONS

- Protection and control of a three-phase surface or submersible electric pump.

SPECIFICATIONS

- Manual control through an Auto/Man selector switch.
- Automatic control through an external enable contact.
- Supply voltage: 3 x 400 V \pm 10%.
- Frequency: 50/60 Hz.
- 24 V AC low voltage auxiliary circuit.
- Power: 5,5 to 110 kW.
- Softstart with torque control.
- Protection class: IP54.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Metal enclosure.
- Dry running indicator light.
- Power - pump running - malfunction LEDs on starter keypad.
- ON/OFF selector switch for activation of by-pass contactor.
- Ready for installation of dry running control float or pressure switch (to be ordered separately). Can be equipped with electronic protection module with electrodes.

Protections against phase failure / phase sequence / frequency out of limits on power supply line.
Low-voltage protection on auxiliary circuits.

Protection against starter overtemperature / overload / malfunction.

Protection against overload / locked rotor / current asymmetry on motor side.

Short-circuit protection on inputs and outputs.

RS232 interface for remote control and RS485 for use of remote keypad.

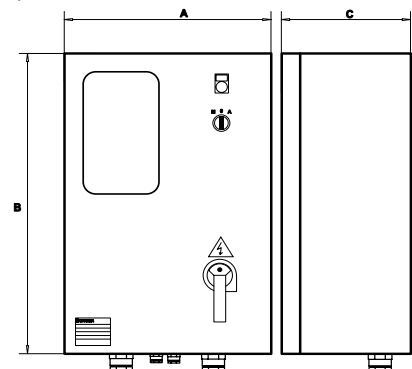
Incorporated by-pass contactor.

OPTIONAL ACCESSORIES

- SLD series 24 V level kit.
Probe module for protection against dry running (set of three electrodes included in the supply).
- Float.
- Pressure switch.
- VR3/SCA3 three-phase module for overvoltage protection (lightning protector).

STATIC STARTER CHARACTERISTICS

- Static starter for gradual start-up/shutdown, featuring: keypad with liquid crystal display showing voltage, absorbed current, $\cos \Phi$, operating hours, number of starts, last twenty messages on system status (events / alarms).



MODEL	RATED VOLTAGE V	RATED POWER		RATED CURRENT A	DIMENSIONS			WEIGHT Kg
		kW	HP		A mm	B mm	C mm	
Q3SF 75	3 x 400 V \pm 10 %	5,5 - 7,5	7,5 - 10	8,5 \div 17	400	600	250	35
Q3SF 150	3 x 400 V \pm 10 %	9,2 - 15	12,5 - 20	15 \div 30	500	700	250	40
Q3SF 220	3 x 400 V \pm 10 %	18,5 - 22	25 - 30	28 \div 45	500	700	250	40
Q3SF 300	3 x 400 V \pm 10 %	30	40	42 \div 60	600	900	300	90
Q3SF 370	3 x 400 V \pm 10 %	37	50	55 \div 75	600	900	300	90
Q3SF 450	3 x 400 V \pm 10 %	45	60	70 \div 85	600	900	300	90
Q3SF 550	3 x 400 V \pm 10 %	55	75	80 \div 110	600	900	300	90
Q3SF 590	3 x 400 V \pm 10 %	59	80	105 \div 125	600	900	300	90
Q3SF 750	3 x 400 V \pm 10 %	75	100	120 \div 142	600p	1700p	400p	120
Q3SF 900	3 x 400 V \pm 10 %	90	125	135 \div 190	600p	1700p	400p	120
Q3SF 1100	3 x 400 V \pm 10 %	110	150	185 \div 245	600p	1700p	400p	120

Nota Dimensioni : P indica quadro a pavimento

CB-Q3SF-en_b_te

Level Control Panel

APPLICATIONS

- Accessory for electric pump control panels, suitable for tank filling or drainage applications or for activation of audible or visual alarms.

QCL5 Series



SPECIFICATIONS

- Automatic control through probes.
- Supply voltage: 1 x 230 V ±10% or 1 x 24 V ±10%.
- Frequency: 50/60 Hz.
- Voltage to probes: 15 V AC at 0,5 mA max.
- Switch contact 48 V AC at 3 A max (250 W max).
- Protection class: IP55.
- Ambient temperature: -5 to +40 °C (according to EN 60439-1).
- Maximum relative humidity: 50% at +40°C, provided that no condensation occurs (according to EN 60439-1).
- Wall mounted.
- Plastic enclosure.
- Electrodes suitable for water at a maximum temperature of 40°C.
- Set of three electrodes included in the supply.

OPTIONAL ACCESSORIES

- Drop cable with circular cross section.

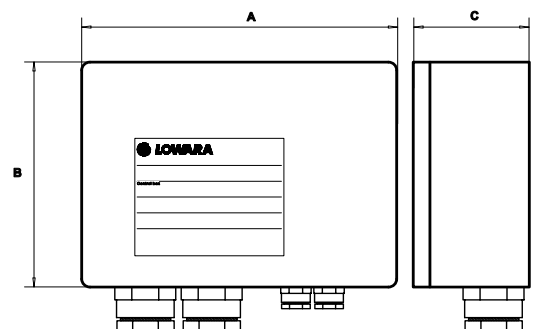
For connection of the electrodes to the panel we recommend the following cross sections:

LENGHT m		CABLE CROSS SECTION mm ²
0	50	0,5
50	100	0,8
100	200	1,0
200	400	2,5
400	>	4,0

CB-CASEL-en_a_te

Three-pole cables can be used for short lengths.

Otherwise we recommend the use of unipolar cables placed at suitable distance from each other to prevent the capacitive effect of the cable from interfering with the proper operation of the electronic module.



TYPE	POWER SUPPLY			CONTACT			DIMENSIONS A x B x C mm	WEIGHT Kg
	VOLTAGE V	FREQUENCY Hz	POWER W	TYPE	RANGE V	A		
QCL5/24	1 x 24	50/60	2	NO-C-NC	48	3	90 x 130 x 60	0,5
QCL5/230	1 x 230	50/60	2					

CB-QCL5-en_a_te

Level Probe Module

APPLICATIONS

- Accessory for electric panels.

SLD Series



SPECIFICATIONS

- Electronic module for use of probes as protection against dry running.
- Supply voltage: 1 x 24 V \pm 10% for model SLD/24.
- Frequency: 50/60 Hz.
- Absorbed power: 2 VA.
- Voltage to probes: 15 V AC at 0,5 mA max.
- Switch contact 24 V AC at 5 A max (250 W max).
- Designed for installation on Lowara electric panels featuring DIN bar.
- Electrodes suitable for water at a maximum temperature of 40°C.

CONSTRUCTION CHARACTERISTICS

- Module made of plastic material with DIN bar attachment.
- Cables with quick plug-in connectors.
- Set of three electrodes included in the supply.
- Electrodes with nylon 6 body, stainless steel sensitive element brass washer and nitrile rubber seal.

OPTIONAL ACCESSORIES

- Drop cable with circular cross section.

For connection of the electrodes to the panel we recommend the following cross sections:

LENGHT m		CABLE CROSS SECTION mm ²
0	50	0,5
50	100	0,8
100	200	1,0
200	400	2,5
400	>	4,0

CB-CASEL-en_a_te

Three-pole cables can be used for short lengths.

Otherwise we recommend the use of unipolar cables placed at suitable distance from each other to prevent the capacitive effect of the cable from interfering with the proper operation of the electronic module.

TYPE	POWER SUPPLY		POWER W	CONTACT			DIMENSIONS A x B x C mm	WEIGHT Kg	PANELS
	MAIN V			TYPE	RANGE V	A			
KIT SLD/24	1x24	50/60 Hz	2	N0-C-NC	24	5	90 x 35 x 60	0,5	QMCS-QM-QTD-Q3D-Q3Y-Q3A-Q3I-Q3SF

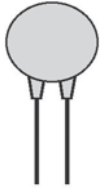
CB-SLD-en_a_te

Lightning Protection

APPLICATIONS

- Accessory for electric panels.

DPF Series



SPECIFICATIONS

- Varistor for overvoltage protection of single-phase lines. To be connected between the phase and neutral conductor.
- Operating voltage: 460 V AC.
- Maximum varistor voltage: 750 V with 100 A peak current.

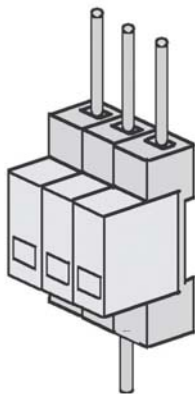
VR Series



SPECIFICATIONS

- Varistors for overvoltage protection of three-phase lines.
- To be connected between the phases (VR3 model).
- Operating voltage: 460 V AC.
- Maximum varistor voltage: 750 V with 100 A peak current.
- Designed for installation on Lowara electric panels featuring DIN bar.

SCA3 Series



SPECIFICATIONS

- Lightning arresters for overvoltage protection of three-phase lines. To be connected between the phases and the heart conductor,
- Operating voltage: 500 V AC.
- Maximum varistor voltage: 2,5 kW with 40 kA peak current.
- Designed for installation on Lowara electric panels featuring DIN bar.

TYPE	VOLTAGE V	PANELS
DPF	1 x 220-240 50/60 Hz	QSM - QMC - QMCS - QPC
KIT VR1	1 x 220-230 50/60 Hz	QM - QDRM - QDRM2
KIT VR3	3 x 400 50/60 Hz	QTD - QDR - QDR2 - Q3D
KIT SCA 3	3 x 400 50/60 Hz	Q3Y-Q3A-Q3I-Q3SF-Q3D



Lowara



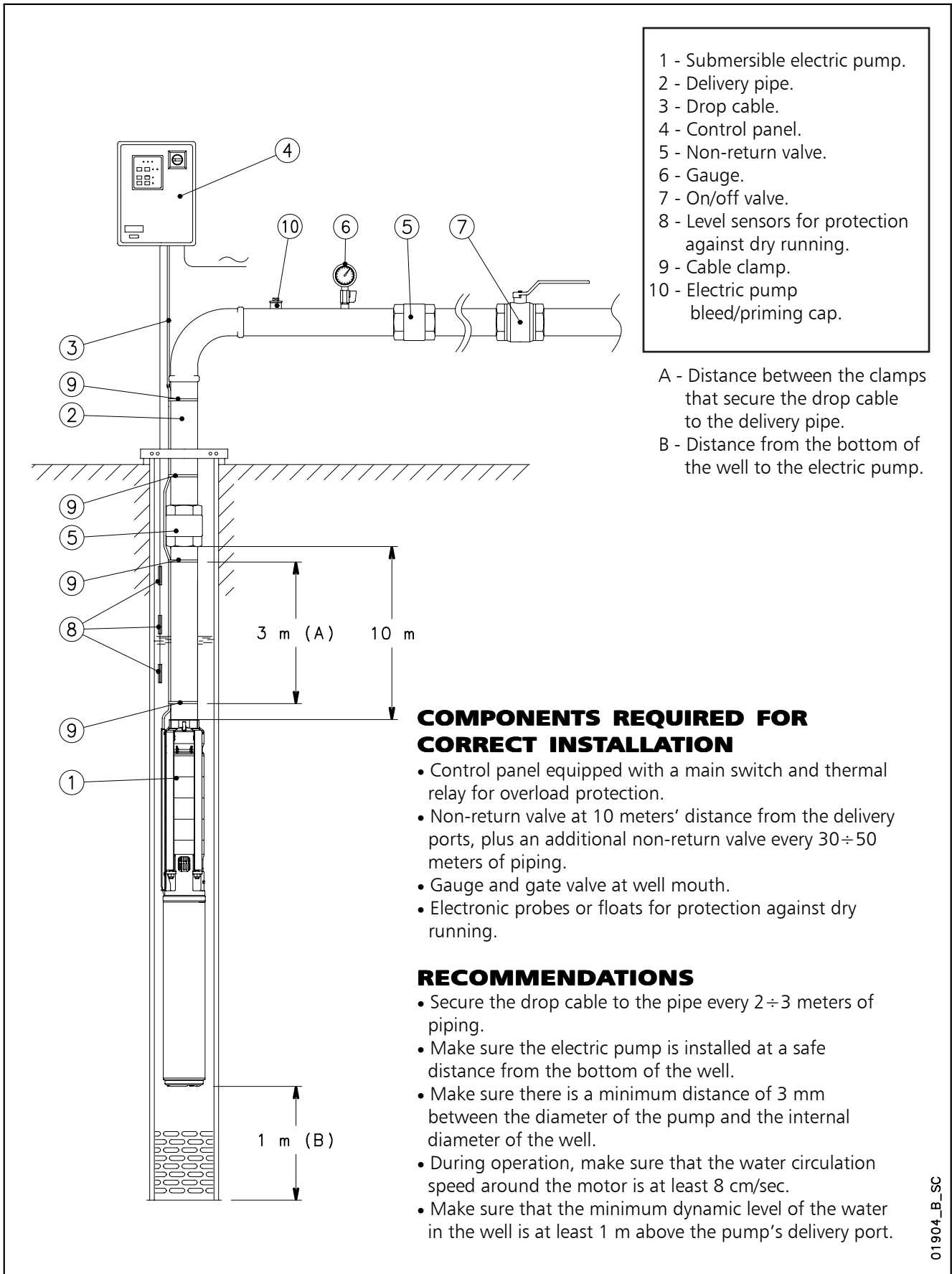
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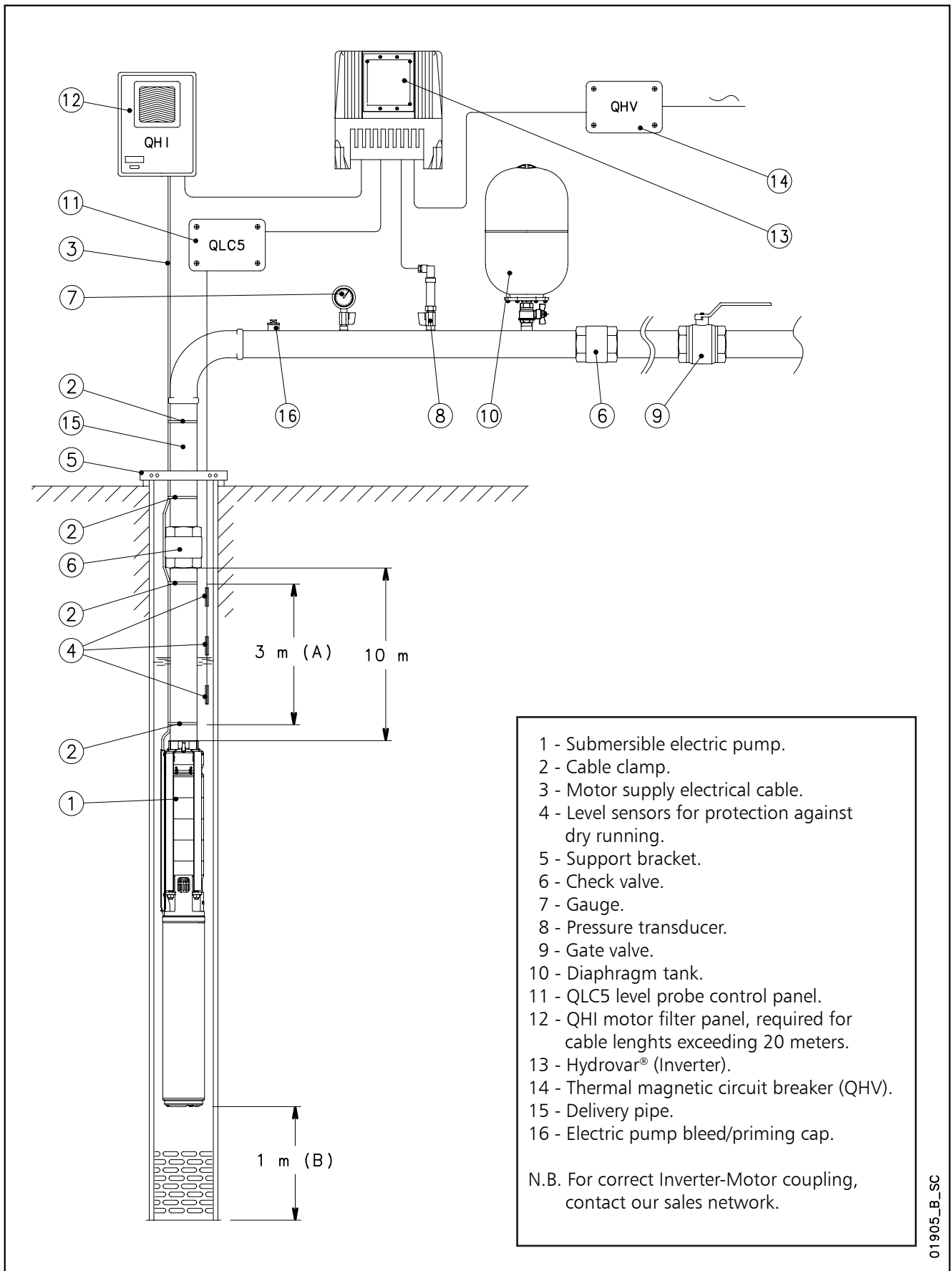
TECHNICAL APPENDIX



SUBMERSIBLE ELECTRIC PUMP INSTALLATION DIAGRAM



01904_B_SC

EXAMPLE OF INSTALLATION OF A SUBMERSIBLE ELECTRIC PUMP CONTROLLED BY AN INVERTER (HYDROVAR®)


01905_B_SC

40S SERIES MOTORS

TABLE OF POWER REDUCTION COEFFICIENTS WITH INCREASED WATER TEMPERATURE

MOTOR TYPE	RATED POWER kW	TEMPERATURE °C					
		30	35	40	45	50	55
40S	all models	1	1	0,9	0,8	0,7	0,6

40S-derating-50-en_a_te

EXAMPLE:

A 2,2 kW 40S motor is to be used in 50°C water.

Motor power at 50 °C = 2,2 x 0,6 = 1,32 kW

L4C SERIES MOTORS

TABLE OF POWER REDUCTION COEFFICIENTS WITH INCREASED WATER TEMPERATURE

MOTOR TYPE	RATED POWER kW	TEMPERATURE °C					
		30	35	40	45	50	55
L4C	all models	1	1	0,95	0,9	0,85	0,8

L4c-derating-50-en_b_te

EXAMPLE:

A 2,2 kW L4C motor is to be used in 50°C water.

Motor power at 50 °C = 2,2 x 0,85 = 1,87 kW

L6C SERIES MOTORS

TABLE OF POWER REDUCTION COEFFICIENTS WITH INCREASED WATER TEMPERATURE

MOTOR TYPE	RATED POWER kW	TEMPERATURE °C					
		35	40	45	50	55	60
L6C	all models	1	0,95	0,8	0,75	0,7	0,6

L6c-derating-50-en_b_te

EXAMPLE:

A 7,5 kW L6C motor is to be used in 45°C water.

Motor power at 50 °C = 7,5 x 0,8 = 6 kW

L6W SERIES MOTORS

TABLE OF POWER REDUCTION COEFFICIENTS WITH INCREASED WATER TEMPERATURE

MOTOR TYPE	RATED POWER kW	TEMPERATURE °C							
		25	30	35	40	45	50	55	60
L6W (1)	all models	1	0,85	0,74	-	-	-	-	-
L6W (2)	all models	1	1	1	1	1	0,85	0,75	0,67

(1) Standard winding for water temperature up to 35 °C.

l6w-derating-en_a_te

(2) Special winding for water temperature from 35 °C to 60 °C.

EXAMPLE:

A 15 kW L6W motor is to be used in 35°C water.

Motor power at 35 °C = 15 x 0,74 = 11,1 kW

L8W SERIES MOTORS

TABLE OF POWER REDUCTION COEFFICIENTS WITH INCREASED WATER TEMPERATURE

MOTOR TYPE	RATED POWER kW	TEMPERATURE °C							
		25	30	35	40	45	50	55	60
L8W (1)	all models	1	0,85	0,74	-	-	-	-	-
L8W (2)	all models	1	1	1	1	1	0,85	0,75	0,67

(1) Standard winding for water temperature up to 35 °C.

l8w-derating-en_a_te

(2) Special winding for water temperature from 35 °C to 60 °C.

EXAMPLE:

A 55 kW L8W motor is to be used in 35°C water.

Motor power at 35 °C = 55 x 0,74 = 40,7 kW

L10W SERIES MOTORS

TABLE OF POWER REDUCTION COEFFICIENTS WITH INCREASED WATER TEMPERATURE

MOTOR TYPE	RATED POWER kW	TEMPERATURE °C							
		25	30	35	40	45	50	55	60
L10W (1)	all models	1	0,85	0,74	-	-	-	-	-
L10W (2)	all models	1	1	1	1	1	0,85	0,75	0,67

(1) Standard winding for water temperature up to 35 °C.

l10w-derating-en_a_te

(2) Special winding for water temperature from 35 °C to 60 °C.

EXAMPLE:

A 110 kW L10W motor is to be used in 35°C water.

Motor power at 35 °C = 110 x 0,74 = 81,4 kW

L12W SERIES MOTORS

TABLE OF POWER REDUCTION COEFFICIENTS WITH INCREASED WATER TEMPERATURE

MOTOR TYPE	RATED POWER kW	TEMPERATURE °C							
		25	30	35	40	45	50	55	60
L12W (1)	all models	1	0,85	0,74	-	-	-	-	-
L12W (2)	all models	1	1	1	1	1	0,85	0,75	0,67

(1) Standard winding for water temperature up to 35 °C.

l12w-derating-en_a_te

(2) Special winding for water temperature from 35 °C to 60 °C.

EXAMPLE:

A 220 kW L12W motor is to be used in 35°C water.

Motor power at 35 °C = 220 x 0,74 = 162,8 kW

SELECTING CABLE CROSS-SECTIONS FOR SUBMERSIBLE MOTORS

To select the cross-section of power cables for submersible pumps, consult the tables shown below. In these tables, the maximum lengths of the power cable for each cross-section are shown for each motor and next to the various input voltage ratings.

Therefore, to find the required cable cross-section, simply read off the maximum permitted lengths for each cross-section next to the selected motor and required input voltage.

E.g.:

A 100 m long power cable must be matched with a 230V L4C07M236 motor.

To determine the cross-section of the cable, simply move along the row of the 230V motor until you find the maximum length of 100 m or immediately above it and then read off the corresponding cross-section in that column.

In this case, between 73 and 116 metres, the second value corresponding to a 4 mm² cable is selected.

N.B.: the tables include specific data (current and power factor) for each motor and voltage rating based on a maximum voltage drop of 4% (HD 384.5), a maximum cable temperature of 80°C, water installation similar to air installation at a temperature of 30°C.

4OS SINGLE-PHASE, 60 Hz: SIZING OF POLYCHLOROPRENE (CR) H07RN-F AND ETHYLENE-PROPILENE (EPR) CABLES DIRECT START

MOTOR TYPE	RATED POWER		RATED VOLTAGE	Cos φ	CURRENT AT S.F.	VOLTAGE DROP	CABLE SECTION: 4 x ...mm ²								
							mm ²	1	1,5	2,5	4	6	10	16	25
							A max	17	23	32	42	54	75	100	127
SINGLE PHASE	Kw	HP	V		A	%	Maximum length in metres								
4OS03M236	0,37	0,50	220	0,99	4,50	4		49	74	123	198	296			
			230	0,98	4,42			53	80	133	212	319			
4OS05M236	0,55	0,75	220	0,99	6,23			36	54	89	143	214			
			230	0,97	6,00			40	59	99	158	237			
4OS07M236	0,75	1	220	0,97	7,41			31	46	77	122	184	306		
			230	0,94	7,36			33	50	83	133	199	332		
4OS11M236	1,1	1,5	220	0,99	9,34			24	36	59	95	143	238		
			230	0,99	9,05			26	39	64	103	154	257		
4OS15M236	1,5	2	220	0,99	12,2			18	27	46	73	109	182	291	
			230	0,97	11,9			20	30	50	80	120	199	319	
4OS22M236	2,2	3	220	0,93	17,1			-	21	35	55	83	138	221	
			230	0,9	17,1			-	22	37	60	90	149	239	
4OS03M116	0,37	0,5	110	0,99	9,02			12	18	31	49	74	123	197	
			115	0,98	8,86			13	20	33	53	79	132	212	
4OS05M116	0,55	0,75	110	0,98	12,3			9	14	23	37	55	91	146	228
			115	0,94	12,3			10	15	25	40	60	99	159	249
4OS07M116	0,75	1	110	0,98	14,5			8	12	19	31	46	77	124	194
			115	0,95	14,3			8	13	21	34	51	85	135	212
4OS11M116	1,1	1,5	110	0,99	18,1			-	9	15	25	37	61	98,2	153
			115	0,98	17,7			-	10	17	27	40	66	106	166

Laying in open air at the temperature of 30 °C, the maximum lead temperature is 80 °C.

4osm-b_cavi-60_b_te



ITT

Lowara

4OS THREE-PHASE, 60 Hz: SIZING OF POLYCHLOROPRENE (CR) H07RN-F AND ETHYLENE-PROPYLENE (EPR) CABLES DIRECT START

MOTOR TYPE THREE PHASE	RATED POWER		RATED VOLTAGE V	Cos φ	CURRENT AT S.F. A	VOLTAGE DROP %	CABLE SECTION: 4 x ...mm ²									
	Kw	HP					mm ²	1	1,5	2,5	4	6	10	16	25	
	A max	17					23	32	42	54	75	100	127			
							Maximum lenght in metres									
4OS03T236	0,37	0,5	220	0,62	3,17	4		145	217	362						
			230	0,56	3,31			160	240	401						
4OS05T236	0,55	0,75	220	0,71	4,00			100	150	250	400					
			230	0,65	4,05			113	169	282	452					
4OS07T236	0,75	1	220	0,66	5,21			83	124	207	331					
			230	0,59	5,51			91	137	229	366					
4OS11T236	1,1	1,5	220	0,72	6,53			60	91	151	242	363				
			230	0,65	6,70			68	102	171	273	409				
4OS15T236	1,5	2	220	0,71	8,40			48	71	119	191	286				
			230	0,65	8,73			52	79	131	209	314				
4OS22T236	2,2	3	220	0,71	11,6			35	52	86	138	207	345			
			230	0,64	12,5			37	56	93	149	223	371			
4OS30T236	3	4	220	0,79	14,5			25	37	62	99	149	248	397		
			230	0,72	14,8			28	42	70	112	167	279	446		
4OS40T236	4	5,5	220	0,85	17,7			-	28	47	76	113	189	302		
			230	0,81	17,4			-	32	53	84	127	211	337		
4OS55T236	5,5	7,5	220	0,86	24,4			-	-	34	54	81	135	217	339	
			230	0,83	23,8			-	-	38	60	90	150	241	376	
4OS75T236	7,5	10	220	0,75	36,8			-	-	-	41	62	103	165	257	
			230	0,68	38,1			-	-	-	46	69	115	184	287	
4OS03T386	0,37	0,5	380	0,62	1,83		433									
4OS05T386	0,55	0,75	380	0,71	2,31		299	449								
4OS07T386	0,75	1	380	0,66	3,01		247	371								
4OS11T386	1,1	1,5	380	0,72	3,77		181	271	452							
4OS15T386	1,5	2	380	0,71	4,85		143	214	356							
4OS22T386	2,2	3	380	0,71	6,69		103	155	258	413						
4OS30T386	3	4	380	0,79	8,35		74	112	186	298	447					
4OS40T386	4	5,5	380	0,85	10,2		57	85	142	227	340					
4OS55T386	5,5	7,5	380	0,86	14,1		40	61	101	162	243	405				
4OS75T386	7,5	10	380	0,75	21,2		-	46	77	124	185	309				

Laying in open air at the temperature of 30 °C, the maximum lead temperature is 80 °C.

4ost-b_cavi-60_b_te



L4C SINGLE-PHASE, 60 Hz: SIZING OF POLYCHLOROPRENE (CR) H07RN-F AND ETHYLENE-PROPILENE (EPR) CABLES DIRECT START

MOTOR TYPE	RATED POWER		RATED VOLTAGE	Cos φ	CURRENT AT S. F.	VOLTAGE DROP %	CABLE SECTION: 4 x ...mm ²								
							mm ²	1	1,5	2,5	4	6	10	16	25
							A max	17	23	32	42	54	75	100	127
SINGLE PHASE	Kw	HP	V		A		Maximum lenght in metres								
L4C03M236	0,37	0,5	220	0,93	5,3	4		45	67	112	179	268			
			230	0,89	5,5			47	70	117	188	282			
L4C05M236	0,55	0,75	220	0,89	7,0			35	53	88	141	212			
			230	0,84	7,4			37	56	93	148	222			
L4C07M236	0,75	1	220	0,93	8,5			28	42	70	111	167	278		
			230	0,89	8,9			29	44	73	116	174	290		
L4C11M236	1,1	1,5	220	0,88	12,2			20	31	51	82	123	205	328	
			230	0,84	12,7			22	32	54	86	129	216	345	
L4C15M236	1,5	2	220	0,98	13,1			17	26	43	69	103	171	274	
			230	0,97	12,8			19	28	46	74	111	185	296	
L4C22M236	2,2	3	220	0,96	17,6			-	20	33	52	78	130	208	326
			230	0,96	17,1			-	21	35	56	84	140	224	350
L4C37M236	3,7	5	220	0,98	26,2			-	-	21	34	51	86	137	214
			230	0,96	25,9			-	-	23	37	56	93	148	231
L4C03M116	0,37	0,5	110	0,93	10,6			11	17	28	45	67	112	179	279
			115	0,89	11,0			12	18	29	47	70	117	188	294
L4C05M116	0,55	0,75	110	0,89	14,0			9	13	22	35	53	88	141	221
			115	0,84	14,8			9	14	23	37	56	93	148	231
L4C07M116	0,75	1	110	0,93	17,0			-	10	17	28	42	70	111	174
			115	0,89	17,8			-	11	18	29	44	73	116	181

Laying in open air at the temperature of 30 °C, the maximum lead temperature is 80 °C.

l4cm-cavi-60-en_a_te



L4C THREE-PHASE, 60 Hz: SIZING OF POLYCHLOROPRENE (CR) H07RN-F AND ETHYLENE-PROPYLENE (EPR) CABLES DIRECT START

MOTOR TYPE	RATED POWER		RATED VOLTAGE	Cos φ	CURRENT AT S. F. A	VOLTAGE DROP %	CABLE SECTION: 4 x ...mm ²											
							mm ²	1	1,5	2,5	4	6	10	16	25			
							A max	17	23	32	42	54	75	100	127			
THREE PHASE	Kw	HP	V				Maximum lenght in metres											
L4C03T236	0,37	0,5	220	0,78	3,5	4		104	156	260								
			230	0,76	3,8			103	154	257								
L4C05T236	0,55	0,75	220	0,82	4,6			75	113	188	301							
			230	0,77	4,8			80	121	201	322							
L4C07T236	0,75	1	220	0,74	5,3			72	109	181	290							
			230	0,72	5,6			74	111	184	295							
L4C11T236	1,1	1,5	220	0,75	7,5			51	76	126	202	303						
			230	0,72	7,8			53	79	132	212	317						
L4C15T236	1,5	2	220	0,71	9,4			43	64	106	170	256						
			230	0,68	9,8			45	67	111	178	268						
L4C22T236	2,2	3	220	0,77	11,5			32	48	80	128	193	321					
			230	0,75	12			33	50	83	132	198	330					
L4C30T236	3	4	220	0,73	16,5			-	35	59	94	142	236	378				
			230	0,7	17,3			-	37	61	98	147	245	393				
L4C40T236	4	5,5	220	0,8	18,8			-	28	47	76	113	189	302				
			230	0,78	19,2			-	30	50	79	119	198	317				
L4C55T236	5,5	7,5	220	0,8	25,4			-	-	35	56	84	140	224	350			
			230	0,78	26			-	-	37	59	88	147	234	366			
L4C03T386	0,37	0,5	380	0,76	2,3			281										
L4C05T386	0,55	0,75	380	0,77	2,9			220	330									
L4C07T386	0,75	1	380	0,72	3,4		201	301										
L4C11T386	1,1	1,5	380	0,72	4,7		145	218	363									
L4C15T386	1,5	2	380	0,68	5,9		122	184	306									
L4C22T386	2,2	3	380	0,75	7,2		91	136	227	364								
L4C30T386	3	4	380	0,73	9,5		71	106	177	283	425							
L4C40T386	4	5,5	380	0,78	11,6		54	81	136	217	326							
L4C55T386	5,5	7,5	380	0,78	15,7		40	60	100	160	241	401						
L4C75T386	7,5	10	380	0,8	20		-	46	77	123	184	307	491					

Laying in open air at the temperature of 30 °C, the maximum lead temperature is 80 °C.

l4c-cavi-60-en_a_te



L6C, 60 Hz: SIZING OF POLYCHLOROPRENE (CR) H07RN-F AND ETHYLENE-PROPYLENE (EPR) CABLES DIRECT START

MOTOR TYPE	RATED POWER		RATED VOLTAGE	Cos φ	CURRENT AT S. F.	VOLTAGE DROP	CABLE SECTION: 4 x ...mm ²									
							mm ²	1	1,5	2,5	4	6	10	16	25	35
							A max	17	23	32	42	54	75	100	127	158
THREE PHASE	Kw	HP	V		A	%	Maximum lenght in metres									
L6C40T236	4	5,5	230	0,80	19,0	4	-	29	49	78	117	196	313			
L6C40T386			380	0,80	11,5		53	80	133	213	320					
L6C40T405			460	0,80	9,5		78	117	196	313						
L6C55T236	5,5	7,5	230	0,80	26,6		-	-	35	56	84	140	223	349		
L6C55T386			380	0,80	16,1		38	57	95	152	229	381				
L6C55T405			460	0,80	13,1		57	85	142	227	340					
L6C75T236	7,5	10	230	0,81	33,0		-	-	-	44	67	111	178	278	389	
L6C75T386			380	0,81	20,0		-	45	76	121	182	303				
L6C75T405			460	0,81	16,5		-	67	111	178	267					
L6C93T236	9,3	12,5	230	0,80	41,2		-	-	-	-	54	90	144	225	316	
L6C93T386			380	0,80	25,0		-	-	61	98	147	245	393			
L6C93T405			460	0,80	20,6		-	54	90	144	216	361				
L6C110T236	11	15	230	0,82	46,6		-	-	-	-	47	78	124	194	272	
L6C110T386			380	0,82	28,2		-	-	53	85	127	212	340			
L6C110T405			460	0,82	23,3		-	-	78	124	187	311				
L6C150T236	15	20	230	0,83	61,6		-	-	-	-	-	58	93	145	203	
L6C150T386			380	0,83	37,3		-	-	-	63	95	159	254	396		
L6C150T405			460	0,83	30,8		-	-	-	93	139	232	372			
L6C185T236	18,5	25	230	0,80	80,0		-	-	-	-	-	-	74	116	163	
L6C185T386			380	0,80	48,4		-	-	-	-	76	127	203	317		
L6C185T405			460	0,80	40		-	-	-	-	111	186	297			
L6C220T236	22	30	230	0,77	99,6		-	-	-	-	-	-	-	97	136	
L6C220T386			380	0,77	60,2		-	-	-	-	-	106	169	265	371	
L6C220T405			460	0,77	49,8		-	-	-	-	93	155	248	387		
L6C300T386	30	40	380	0,82	75,0		-	-	-	-	-	-	128	200	279	
L6C300T405			460	0,82	62,0		-	-	-	-	-	117	187	292		
L6C370T386	37	50	380	0,88	90,0		-	-	-	-	-	-	99	155	217	
L6C370T405			460	0,88	77,0		-	-	-	-	-	-	140	219	307	

Laying in open air at the temperature of 30 °C, the maximum lead temperature is 80 °C.

l6c-cavi-60-en_b_te



L6W, 60 Hz: SIZING OF POLYCHLOROPRENE (CR) H07RN-F AND ETHYLENE-PROPILENE (EPR) CABLES DIRECT START

MOTOR TYPE	RATED POWER		RATED VOLTAGE	Cos φ	CURRENT AT S. F.	VOLTAGE DROP %	CABLE SECTION: 4 x ...mm ²									
	Kw	HP					V	A	mm ²	1	1,5	2,5	4	6	10	16
			A max	17	23				32	42	54	75	100	127	158	
THREE PHASE							Maximum length in metres									
L6W40T236	4	5,5	230	0,86	18,0	4	-	29	48	77	115	192	307			
L6W40T386			380	0,86	10,9		52	79	131	209	314					
L6W40T405			460	0,86	8,98		77	115	192	308	462					
L6W55T236	5,5	7,5	230	0,84	24,1		-	-	37	59	88	147	235	367		
L6W55T386			380	0,84	14,6		40	60	100	160	240					
L6W55T405			460	0,84	12,1		58	88	146	234	351					
L6W75T236	7,5	10	230	0,85	32,3		-	-	-	43	65	108	173	271	379	
L6W75T386			380	0,85	19,5		-	44	74	118	178					
L6W75T405			460	0,85	16,1		43	65	109	174	261					
L6W93T236	9,3	12,5	230	0,84	38,8		-	-	-	36	55	91	146	228	319	
L6W93T386			380	0,84	23,5		-	-	62	99	149	249	398			
L6W93T405			460	0,84	19,4		-	55	91	146	219	365				
L6W110T236	11	15	230	0,83	47,0		-	-	-	-	46	76	122	190	267	
L6W110T386			380	0,83	28,5		-	-	52	83	125	208	332			
L6W110T405			460	0,83	23,5		-	-	76	122	183	305				
L6W130T236	13	17,5	230	0,85	54		-	-	-	-	39	65	104	162	227	
L6W130T386			380	0,85	32,7		-	-	-	71	106	177	283			
L6W130T405			460	0,85	27		-	-	65	104	155	259				
L6W150T236	15	20	230	0,85	60,9		-	-	-	-	-	57	92	144	201	
L6W150T386			380	0,85	36,9		-	-	-	63	94	157	250	391		
L6W150T405			460	0,85	30,5		-	-	57	92	138	229	367			
L6W185T236	18,5	25	230	0,82	76,4		-	-	-	-	-	-	76	119	166	
L6W185T386			380	0,82	46,2		-	-	-	-	78	130	207	324		
L6W185T405			460	0,82	38,2		-	-	-	76	114	190	304			
L6W220T236	22	30	230	0,83	90,2		-	-	-	-	-	-	64	99	139	
L6W220T386			380	0,83	54,6		-	-	-	-	-	108	173	271	379	
L6W220T405			460	0,83	45,1		-	-	-	-	95	159	254	397	556	
L6W260T236	26	35	230	0,84	106		-	-	-	-	-	-	-	83	117	
L6W260T386			380	0,84	64,1		-	-	-	-	-	91	146	228		
L6W260T405			460	0,84	52,9		-	-	-	-	80	134	214			
L6W300T236	30	40	230	0,84	122	-	-	-	-	-	-	-	72	101		
L6W300T386			380	0,84	74,0	-	-	-	-	-	79	126	197	276		
L6W300T405			460	0,84	61,1	-	-	-	-	-	116	185	289	405		
L6W370T386	37	50	380	0,83	93,7	-	-	-	-	-	-	101	158	221		
L6W370T405			460	0,83	77,4	-	-	-	-	-	-	-	148	231	324	

Laying in open air at the temperature of 30 °C, the maximum lead temperature is 80 °C.

l6w_cavi-60_a_te



L8W, 60 Hz: SIZING OF POLYCHLOROPRENE (CR) H07RN-F AND ETHYLENE-PROPYLENE (EPR) CABLES DIRECT START

MOTOR TYPE	RATED POWER		RATED VOLTAGE	Cos φ	CURRENT AT S. F.	VOLTAGE DROP %	CABLE SECTION: 4 x ...mm ²												
							mm ²	10	16	25	35	50	70	95	120	150			
							A max	75	100	127	158	192	246	298	346	399			
THREE PHASE	Kw	HP	V		A		Maximum lenght in metres												
L8W300T386	30	40	380	0,82	78,0	4		-	123	192	269	384							
L8W300T405			460	0,83	66,0			108	174	271	380	542							
L8W370T386	37	50	380	0,82	95,6			-	100	157	219	313							
L8W370T405			460	0,83	81			-	141	221	309	442							
L8W450T386	45	60	380	0,83	113			-	-	131	183	262	366						
L8W450T405			460	0,83	92			-	125	195	272	389	545						
L8W520T386	52	70	380	0,82	138			-	-	108	152	217	304						
L8W520T405			460	0,83	111			-	-	161	226	323	452						
L8W550T386	55	75	380	0,84	137			-	-	-	149	213	299	405					
L8W550T405			460	0,84	113			-	-	157	219	313	438	595					
L8W600T386	60	80	380	0,84	150			-	-	-	136	195	273	370					
L8W600T405			460	0,85	124			-	-	141	197	282	395	536					
L8W670T386	67	90	380	0,85	166			-	-	-	-	174	244	331	418				
L8W670T405			460	0,85	138			-	-	-	177	253	355	481	608				
L8W750T386	75	100	380	0,84	186			-	-	-	-	157	220	299	377				
L8W750T405			460	0,85	156			-	-	-	-	224	314	426	538				
L8W830T386	83	110	380	0,84	207			-	-	-	-	-	198	268	339	424			
L8W830T405			460	0,85	174			-	-	-	-	201	281	382	482	603			
L8W930T386	93	125	380	0,85	230			-	-	-	-	-	176	239	301	377			
L8W930T405			460	0,86	193			-	-	-	-	-	251	340	430	537			

Laying in open air at the temperature of 30 °C, the maximum lead temperature is 80 °C.

l8w_cavi-60_a_te



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L10W, 60 Hz: SIZING OF POLYCHLOROPRENE (CR) H07RN-F AND ETHYLENE-PROPILENE (EPR) CABLES DIRECT START

MOTOR TYPE	RATED POWER		RATED VOLTAGE	Cos φ	CURRENT AT S. F.	VOLTAGE DROP %	CABLE SECTION: 4 x ...mm ²													
							mm ²	50	70	95	120	150	185	240	300					
							A max	192	246	298	346	399	456	538	621					
THREE PHASE	Kw	HP	V		A															
L10W930T386	93	125	380	0,85	231	4		-	175	238	300									
L10W930T405			460	0,85	192			182	255	346	437									
L10W1100T386	110	150	380	0,84	272			-	-	204	258	322								
L10W1100T405			460	0,86	225			-	215	292	369	461								
L10W1300T386	130	175	380	0,84	321			-	-	-	218	273	337							
L10W1300T405			460	0,86	265			-	-	248	313	391	482							
L10W1500T386	150	200	380	0,84	373			-	-	-	-	235	290							
L10W1500T405			460	0,84	306			-	-	-	277	347	428							

Laying in open air at the temperature of 30 °C, the maximum lead temperature is 80 °C.

l10w_cavi-60_a_te

L12W, 60 Hz: SIZING OF POLYCHLOROPRENE (CR) H07RN-F AND ETHYLENE-PROPILENE (EPR) CABLES DIRECT START

MOTOR TYPE	RATED POWER		RATED VOLTAGE	Cos φ	CURRENT AT S. F.	VOLTAGE DROP %	CABLE SECTION: 4 x ...mm ²													
							mm ²	50	70	95	120	150	185	240	300					
							A max	192	246	298	346	399	456	538	621					
THREE PHASE	Kw	HP	V		A															
L12W1850T386	185	250	380	0,84	453	4		-	-	-	-	-	239	310	387					
L12W1850T405			460	0,84	370			-	-	-	-	287	354	459	574					
L12W2200T386	220	300	380	0,84	538			-	-	-	-	-	-	261	326					
L12W2200T405			460	0,84	430			-	-	-	-	-	304	395	494					
L12W2600T386	260	350	380	0,84	632			-	-	-	-	-	-	-						
L12W2600T405			460	0,85	520			-	-	-	-	-	-	323	403					
L12W3000T386	300	400	380	0,85	725			-	-	-	-	-	-	-						
L12W3000T405			460	0,85	596			-	-	-	-	-	-	-	352					

Laying in open air at the temperature of 30 °C, the maximum lead temperature is 80 °C.

l12w_cavi-60_a_te



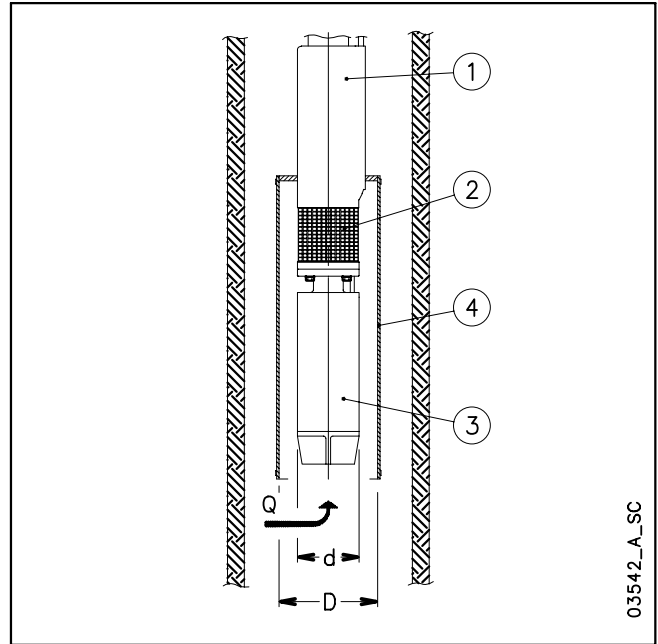
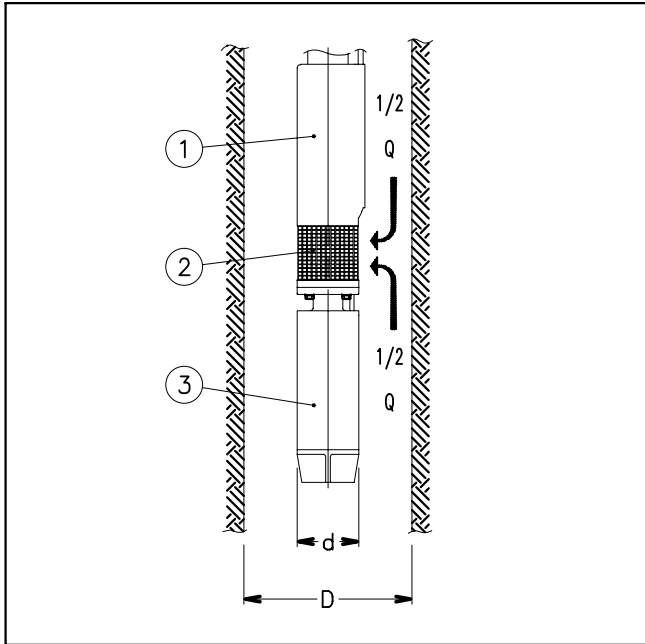
JOINT BETWEEN DROP CABLE AND MOTOR CABLE

MOTOR TYPE	POWER kW	TYPE OF JOINT	FOUR-CONDUCTOR DROP CABLE									THREE-CONDUCTOR DROP CABLE								
			1,5	2,5	4	6	10	16	25	35	50	1,5	2,5	4	6	10	16	25	35	50
4OS L4C	0,37 - 7,5	Resin-filled method	GR1	GR1	GR2	GR2	GR2	GR3	GR3			GR1	GR1	GR1	gr1	GR2	GR3	GR3		
		Heat-shrink method	GT1	GT1	GT2	GT2	GT3	GT4					GT1	GT2	GT2	GT3	GT4			
		Tape method	Self-vulcanizing tape + self-vulcanizing sealing putty and PVC tape (1)									Self-vulcanizing tape + self-vulcanizing sealing putty and PVC tape (1)								
L6C L6W	4 - 37	Resin-filled method	GR2	GR2	GR2	GR2	GR2	GR3	GR4	GR4	GR5	GR2	GR2	GR2	GR2	GR2	GR2	GR3	GR4	GR5
		Heat-shrink method										GT2	GT2	GT2	GT2	GT3	GT4	GT5		
		Tape method	Self-vulcanizing tape + PVC tape																	

(1) Use self-vulcanizing sealing putty to fill in the gaps between the three-conductor cable and the ground cable in the area covered by the final layer of tape, to restore continuity to the protective sheath.



CALCULATING THE SPEED OF THE FLUID THAT FLOWS AROUND A SUBMERGED MOTOR AND SIZING OF THE COOLING SLEEVE



03542_A_SC

The following formula is used to verify whether the speed of the fluid that flows around the motor of a submersible pump is high enough to guarantee the proper cooling of the motor:

$$v = \frac{\frac{Q}{2}}{\pi \cdot \left(\frac{D^2}{4} - \frac{d^2}{4} \right)}$$

Where: Q in [m³/s] is the operating flow rate of the electric pump; only half of this flow is taken into account, because the fluid which is sucked into the area of the filter (2), comes from the motor side (3) as well as from the pump side (1);
 D in [m] corresponds to the diameter of the well;
 d in [m] corresponds to the diameter of the motor (3);
 v in [m/s] is the calculated speed of the fluid that flows around the motor.

Now, compare the speed thus calculated (v) with the minimum speed required for correct cooling of the motor (v_m): if v ≥ v_m it means that the motor is properly cooled, if v < v_m will be necessary to mount a cooling sleeve (4).

Example:

An electric pump OZ630/12 (motor diameter d = 0.144 m) operates in an 8" well (well diameter D = 0.203 m) with flow rate Q = 20 m³/h = 0.0055 m³/s.
 Speed of fluid v = (0.0055/2) / {π·[(0.203)²/4 – (0.144)²/4]} = 0.17 m/s.
 The minimum speed required for proper motor cooling is v_m = 0.20 m/s.
 Because v < v_m, it will be necessary to mount a cooling sleeve.

The following formula is used to determine the maximum diameter of a cooling sleeve to be mounted on a submersible motor:

$$D = \sqrt{4 \cdot \left(\frac{Q}{v \cdot \pi} + \frac{d^2}{4} \right)}$$

Where: Q in [m³/s] is the operating flow rate of the electric pump; the entire flow is taken into account because the fluid comes from the motor side (3) only;
 D in [m] corresponds to the diameter of the cooling sleeve (4);
 d in [m] corresponds to the diameter of the motors(3);
 v_m in [m/s] is the minimum speed of the fluid that flows around the motor.

If the electric pump operates at different flow rate, the minimum flow rate must be taken into account for calculating the diameter of the cooling sleeve.

Example:

A motor coupled to the electric pump OZ615/24 (motor diameter d = 0.144 m), which operates with flow rate Q = 15 m³/h = 0.0042 m³/s, requires a minimum speed of the fluid of v_m = 0.20 m/s.
 Cooling sleeve diameter D = {4·[(0.0042/(0.2·π)+(0.144)²/4]}^{0.5} = 0.217 m.

ASYNCHRONOUS MOTOR STARTING SYSTEMS

Direct

Suitable for low-power motors.

The starting current (I_s) is much higher than the rated current (I_n).

$$\text{Starting current } I_s = I_n \times 4 \div 8$$

$$\text{Starting torque } T_s = T_n \times 2 \div 3$$

Indirect

• Star/Delta

The starting current (I_s) is three times less than the direct starting current.

$$\text{Starting current } I_s = I_n \times 1.3 \div 2.7$$

$$\text{Starting torque } T_s = T_n \times 0.7 \div 1$$

In the star to delta changeover phase (approx. 70 ms) the motor is not supplied and tends to reduce its rotation speed.

In the case of submersible electric pumps with power above 10 HP, the modest mass of the rotor causes a slowdown at changeover, so that the initial Star supply phase is rendered partially useless.

In such cases we recommend using impedance panels or an autotransformer.

• Impedances

The motor is started with a voltage which is lower than the rated one, and which is obtained by means of impedances.

The Lowara panels use impedances which cut down to 70% the starting voltage.

The switch to the rated voltage takes place without any interruptions of the power supply.

$$\text{Rated voltage } U_n = 400 \text{ V}$$

$$\text{Starting voltage } U_s = U_n \times 0,7 = 280 \text{ V}$$

Starting current

$$I_s = I_n \times 4 \div 8 \times \left(\frac{U_s}{U_n} \right) = I_n \times 3 \div 6$$

Starting torque

$$T_s = T_n \times 2 \div 3 \times \left(\frac{U_s}{U_n} \right)^2 = T_n \times 1 \div 1,5$$

Autotransformer

The pump is started with a voltage which is lower than the rated one.

The Lowara panels use an autotransformer with a voltage that is 70% the value of the line voltage.

The switch to the rated voltage occurs without any interruptions of the power supply.

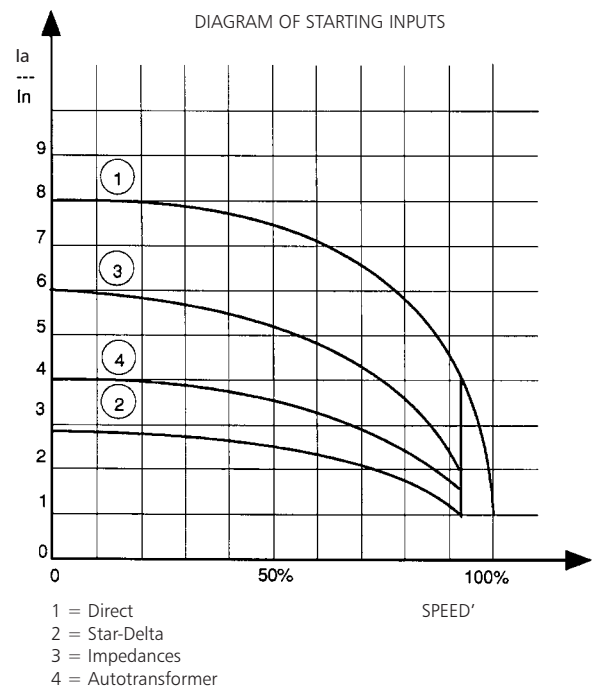
$$\text{Rated voltage } U_n = 400 \text{ V}$$

Starting current

$$I_s = I_n \times 4 \div 8 \times \left(\frac{U_s}{U_n} \right) = I_n \times 3 \div 6$$

Starting torque

$$T_s = T_n \times 2 \div 3 \times \left(\frac{U_s}{U_n} \right)^2 = T_n \times 1 \div 1,5$$





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