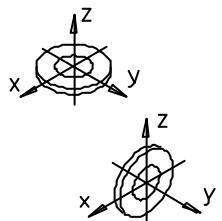


NOTES :

1. SUCTION FLANGE DRILLED TO BS4504 PN10.
 2. CLOCKWISE ROTATION VIEWED ON DRIVE END OF PUMP.
 3. APPROX WEIGHTS :-
- | | |
|---------------|---------|
| PUMP | 928 KG |
| MOTOR | 1012 KG |
| COMPLETE UNIT | 2600 KG |



ACCEPTABLE NOZZLE LOADS

150 BORE SUCTION:- SIDE BRANCH
 $F_x = 1350N$ $F_y = 1500N$ $F_z = 1200N$ $M_x = 750Nm$ $M_y = 530Nm$ $M_z = 620Nm$
 125 BORE DELIVERY:- TOP & SIDE BRANCHES
 $F_x = 1125N$ $F_y = 1025N$ $F_z = 1250N$ $M_x = 575Nm$ $M_y = 415Nm$ $M_z = 475Nm$



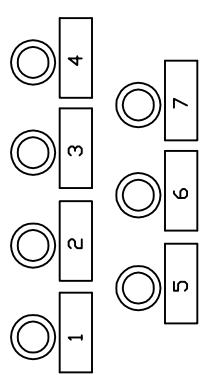
Drawn scale: 1:20
 Original W/O No. 1204035
 SPP PUMPS LTD.
 THEALE CROSS, READING, BERKSHIRE, ENGLAND
 RG31 7SP TEL +44 (0) 1189 323123

DRN	RHD	01.02.12	COMPLETE UNIT
CHK			PUMP : CD12K/9/5 (3,5,7,8&9) MOTOR: 315S&M
APP'D			

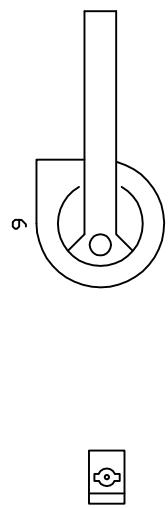
DESCRIPTION		
GENERAL ARRANGEMENT		
FileName	DN33541.Dwg	Border Size A3
DRAWING NUMBER	DN33541	

1	Windchill	FIRST ISSUE	RHD FEB'12
ISS	Rev N°	Revision Details	SIG & DATE

1	THIS DRAWING IS THE PROPERTY OF SPP PUMPS LTD AND MUST NOT BE USED OR COPIED WITHOUT ITS WRITTEN PERMISSION.	IF IN DOUBT ASK - DO NOT SCALE	UNTOLERANCED DIMENSIONS MUST COMPLY WITH SPP PUMPS LTD STD EDI PRA L02	4



B



C

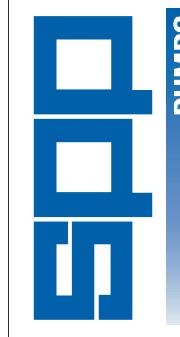


D

RATING-KW	DIMENSIONS & WEIGHT				
STAR-DELTA	A	B	C	D	E
132	1000	1045	960	1000	300 90
150	1000	1045	960	1000	300 90
160	1000	1045	960	1000	300 90
185	1000	1045	960	1000	300 90

LIFTING EYES 5MM THICK PRESSED STEEL
FINISH : RAL 7032 (RAL 3001 OPTIONAL)
PROTECTION : IP NEMA2 CLASSIFICATION

M10 EARTH BOLT SPLIT CABLE GLAND PLATE
X2 410mm X 96mm



DRN	WAR	03.04.08	COMPLETE UNIT
CHK	ELEYDENE	04.04.07	MK3 D STAR DELTA ELECTRIC
APP'D	D.G.	27.06.08	STARTER - EN12845
PUMPS		Drawn scale: NTS Original w/o No.N/A	DESCRIPTION GENERAL ARRANGEMENT - 4
SPP PUMPS LTD. THEALE CROSS, READING, BERKSHIRE, ENGLAND RG31 7SP TEL +44 (0) 1189 323123		File Name FP500D-EN-4.Dwg Drawing Number FP500D-EN-4	
REV Register No.	Revision Details	SIG & DATE	Border Size A3

4

4

2

1

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IF IN DOUBT ASK - DO NOT SCALE

UNTOLERANCED DIMENSIONS MUST COMPLY WITH SPP PUMPS LTD STD EDI PRA L02

STOP/RESET
P.B. []

PL3.10 []

PL3.11 []

MAIN SUPPLY

L1

L2

N

E

—

FUSED ISOLATOR

OFF

ON

—

PLA3

F6

—

PLA2

F5

—

PLA1

F4

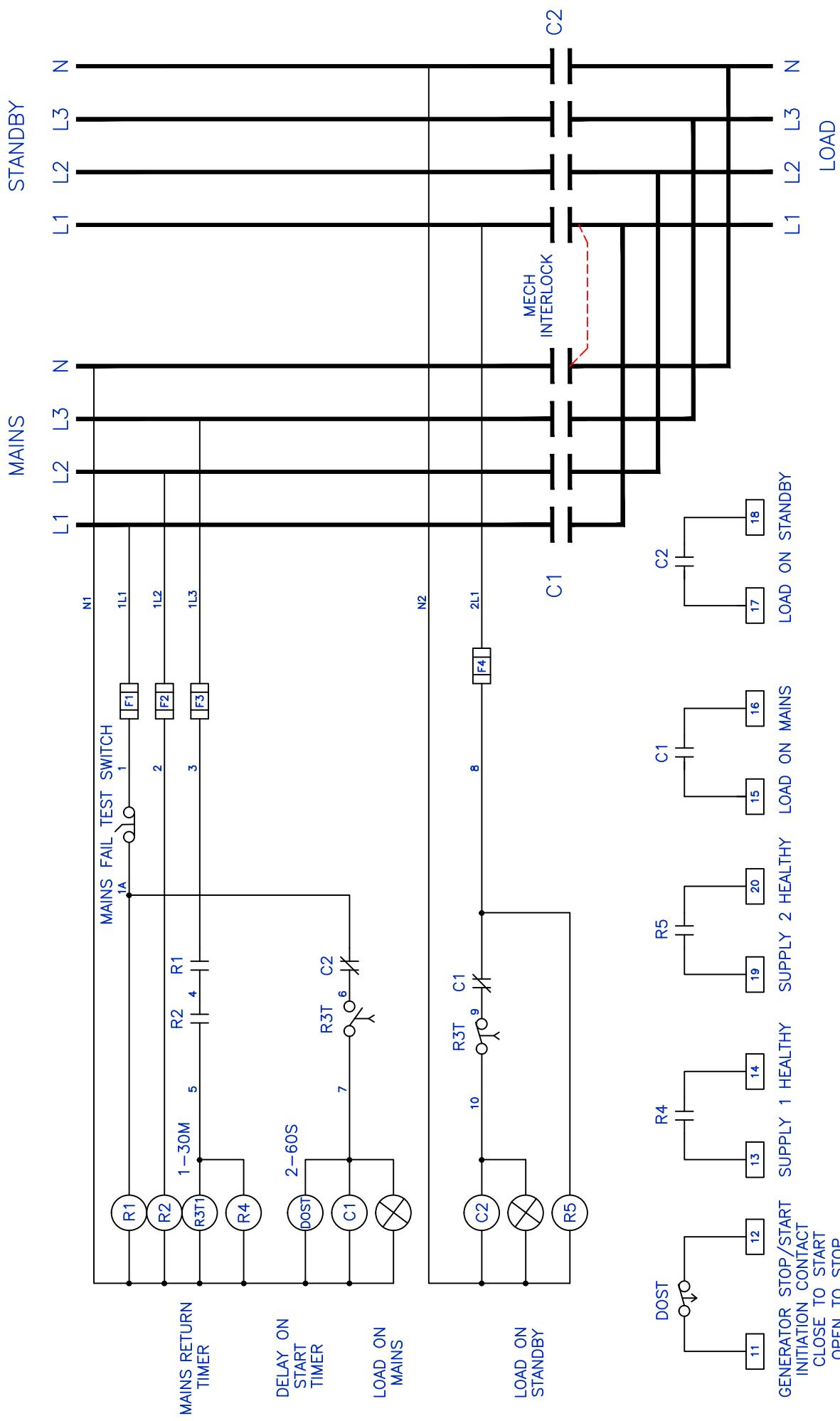
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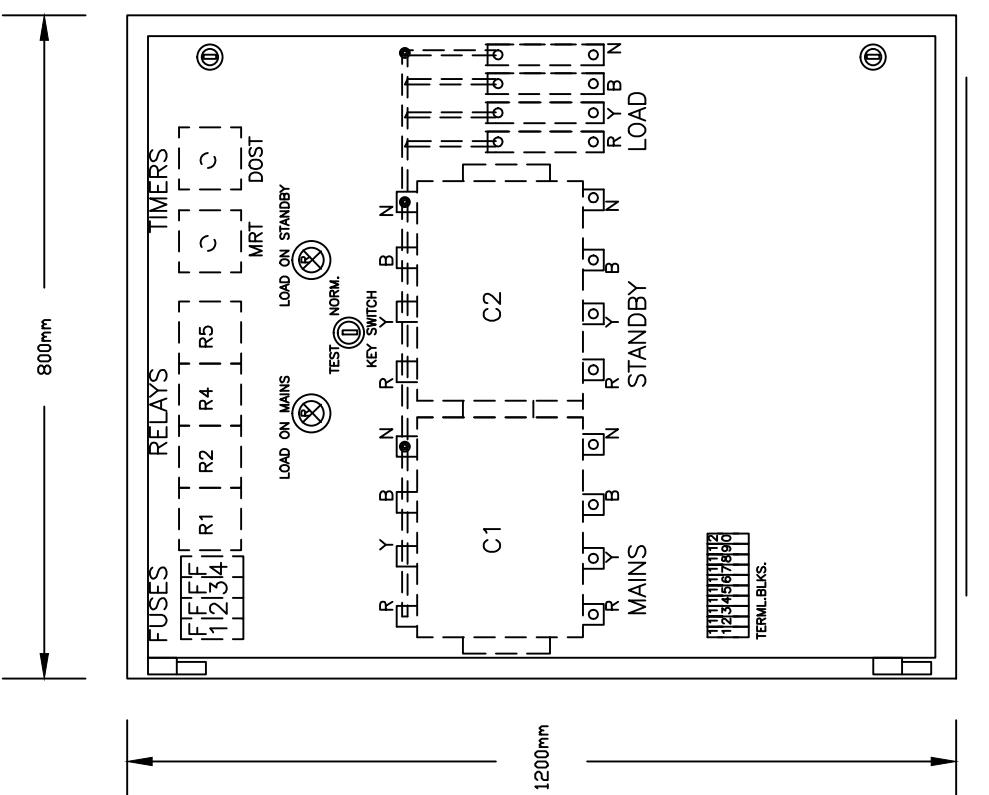
PLA1

F15

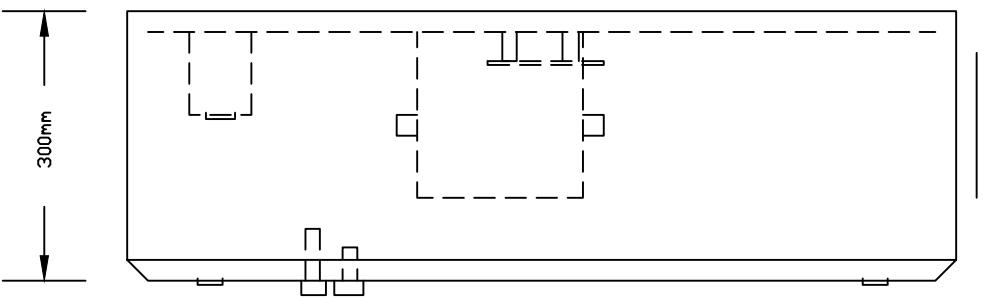
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PLA1



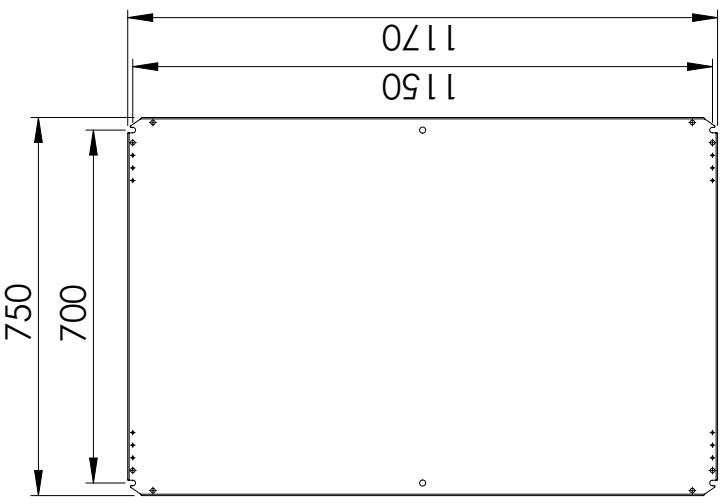


FOR GENERAL ARRANGEMENT ONLY, THE INTERNAL LAYOUT MAY VARY

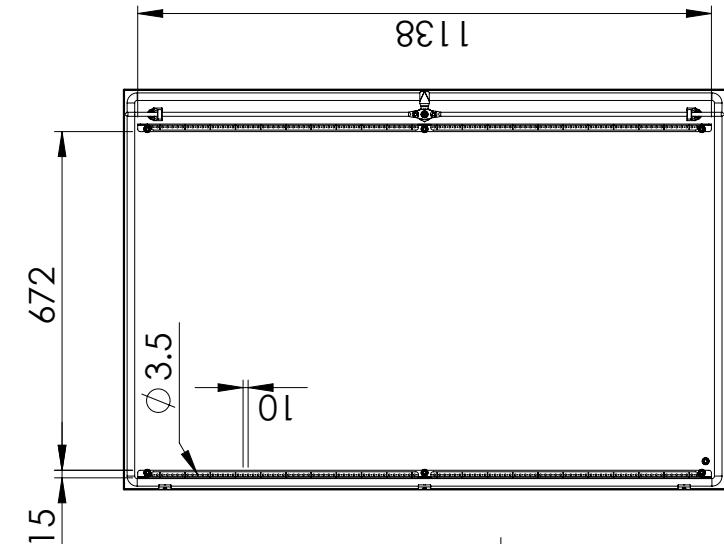


RAL /032
IP.55
BOTTOM ENTRY
FRONT ACCESS

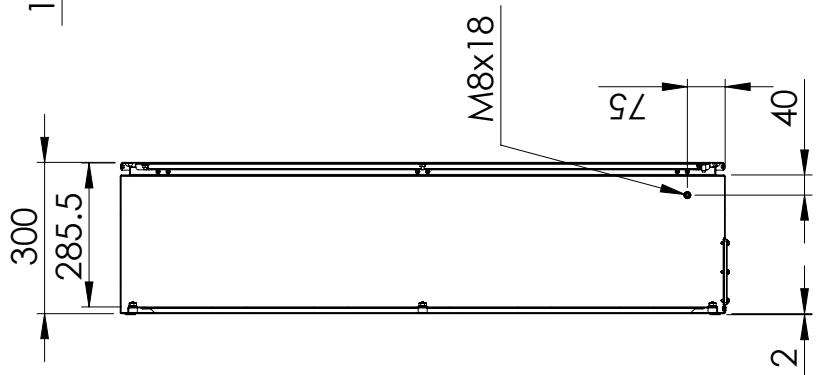
Mounting plate



Inside door view

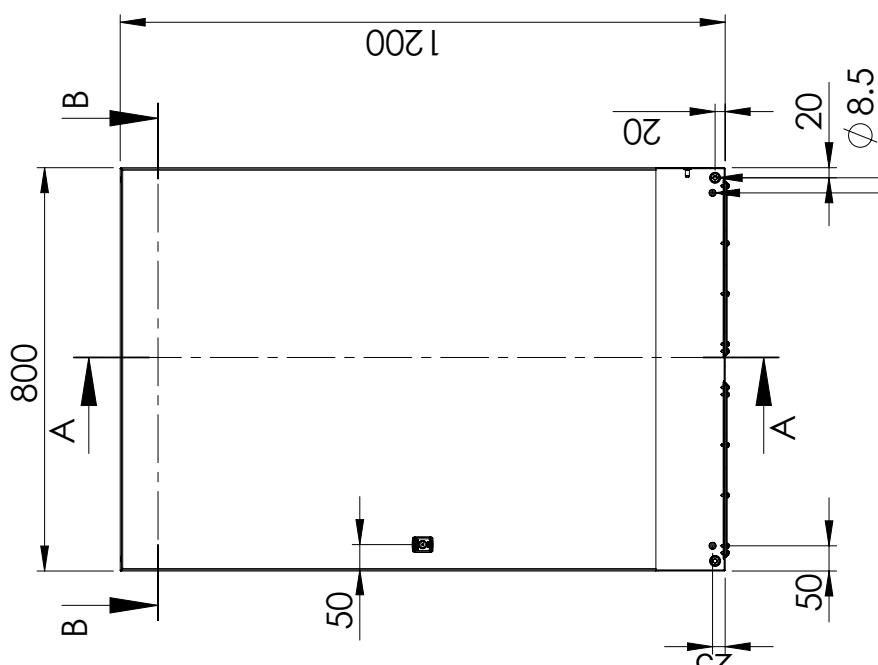


Sectional side view

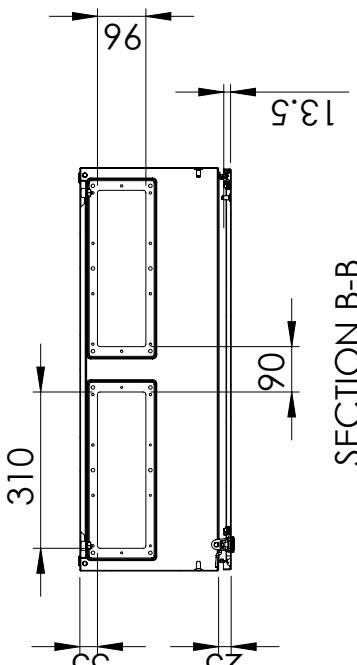


SECTION A-A

Front view



Sectional top view



SECTION B-B

General tolerances according to
Norm ISO 2768-1

Fine Medium Coarse

A4

Reference number :
MAS1208030R5
MAS1208030PER5

Page 1/1

5 4 3 2 1

4

3

2

1

6



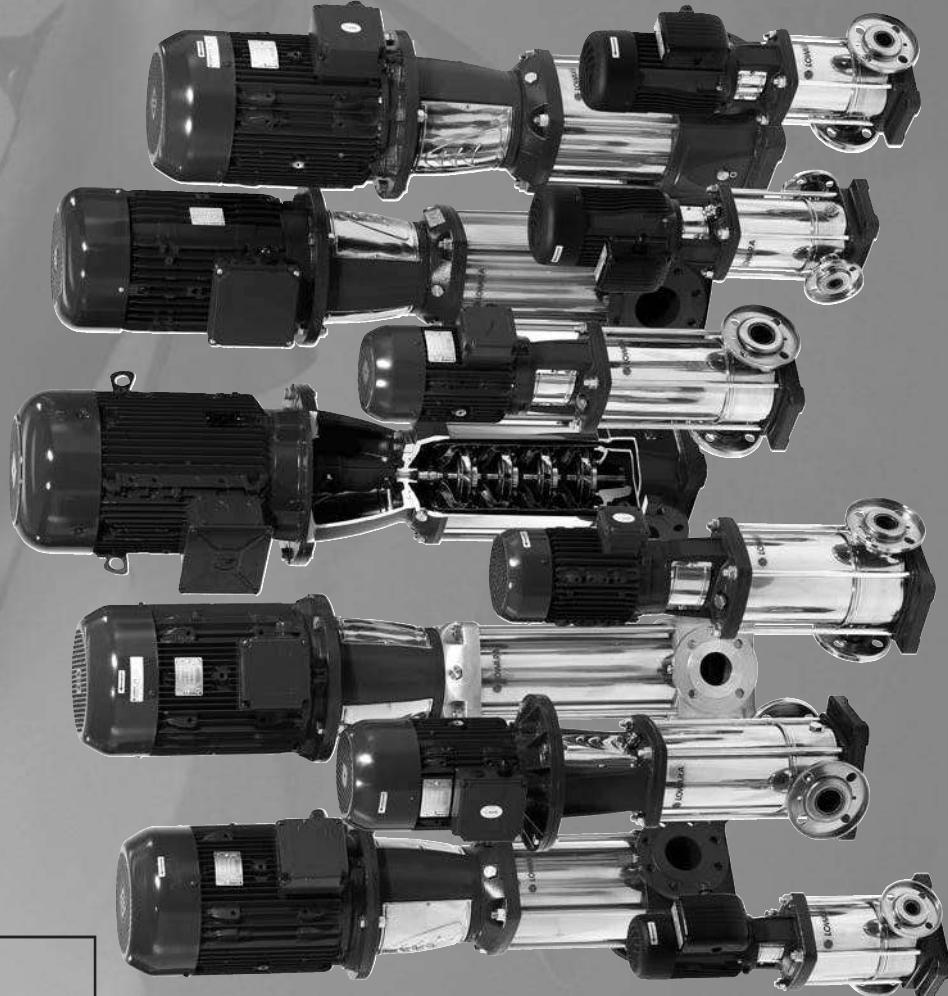
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Lowara

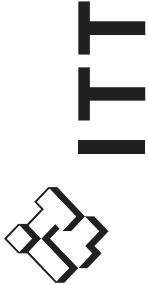
e-SV™ Series 1, 3, 5, 10, 15, 22, 33, 46, 66, 92, 125

Vertical Multistage
Electric Pumps
equipped with
high efficiency motors

50 Hz



Engineered for life



Vertical Multistage Electric Pumps

e-SV™ series with high efficiency motors



MARKET SECTORS

CIVIL, AGRICULTURAL, LIGHT INDUSTRY, WATER TREATMENT, HEATING AND AIR CONDITIONING.

APPLICATIONS

- Handling of water, free of suspended solids, in the civil, industrial and agricultural sectors.
- Pressure boosting and water supply systems.
- Irrigation systems.
- Wash systems.

• Water treatment plants.

- Handling of moderately aggressive liquids, demineralised water, water and glycol, etc.
- Circulation of hot and cold water for heating, cooling and conditioning systems.
- Boiler feed.
- Pharmaceutical industries.
- Food & beverage industries.

SPECIFICATIONS

PUMP

The SV pump is a non-self priming vertical multistage pump coupled to a standard motor. The liquid end, located between the upper cover and the pump casing, is held in place by tie rods. The pump casing is available with different configurations and connection types.

• Delivery: up to **160 m³/h**.

• Head: up to **330 m**.

• Temperature of pumped liquid:
from -30°C to +120°C for standard version.

• Maximum operating **pressure**:

- 1, 3, 5, 10, 15, 22SV with oval flanges: 16 bar (PN16).
- 1, 3, 5, 10, 15, 22SV with round flanges or Victaulic®, Clamp or DIN 11851 connections: 25 bar (PN 25).
- 33, 46SV: 16, 25, 40 bar (PN 16, PN 25 or PN 40).
- 66, 92, 125SV: 16 or 25 bar (PN 16 or PN 25).

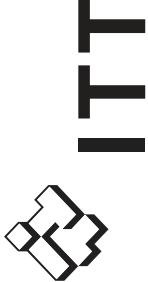
□ STANDARD MOTOR

CAN BE USED WITH THE HYDROVAR® CONTROL SYSTEM IN ORDER TO MANAGE THE OPERATION OF THE PUMP BASED ON THE SYSTEM CONDITIONS AND SAVE ENERGY

- Tested in compliance with ISO 9906 - Annex A.
- Direction of rotation: clockwise looking at the pump from the top down (marked with an arrow on the adapter and on the coupling).

i-ALERT™

Patented i-ALERT™ monitor continuously measures vibration to support optimum performance.
Available as **standard** on pumps 7.5 kW (10 HP) and above.



Lowara

CHARACTERISTICS OF 1, 3, 5, 10, 15, 22SV SERIES

- Vertical multistage centrifugal pump. All metal parts in contact with the pumped liquid are made of stainless steel.
- The following versions are available:
 - **F**: round flanges, in-line delivery and suction ports, AISI 304.
 - **T**: oval flanges, in-line delivery and suction ports, AISI 304.
 - **R**: round flanges, delivery port above the suction port, with four adjustable positions, AISI 304.
 - **N**: round flanges, in-line delivery and suction ports, AISI 316.
 - **V, P**: Victaulic® couplings, in-line delivery and suction ports, AISI 316.
 - **C**: Clamp couplings (DIN 32676), in-line delivery and suction ports, AISI 316.
 - **K**: threaded couplings, (DIN 11851), in-line delivery and suction ports, AISI 316.
- Reduced axial thrusts enable the use of **standard motors** that are easily found in the market.
The Lowara SM ≥ 0.75 kW and PLM surface motors have efficiency values that fall within the range normally referred to as efficiency class IE2.

- Mechanical seal according to EN 12756 (ex DIN 24960) and ISO 3069 for 1, 3, 5SV and 10, 15, 22SV (\leq of 4 kW) series.

- **Balanced mechanical seal** according to EN 12756 (ex DIN 24960) and ISO 3069, which **can be replaced without removing the motor from the pump** for 10, 15 and 22SV (\geq of 5,5 kW) series.
 - Seal housing chamber designed to prevent the accumulation of air in the critical area next to the mechanical seal.
 - A second plug is available for 10, 15, 22SV series.
 - Versions with round flanges that can be coupled to counter-flanges, according to EN 1092.
 - Threaded, oval counter-flanges made of stainless steel are standard supply for the T versions.
 - Round counter-flanges made of stainless steel are available on request for the F, R and N versions.
 - Easy maintenance. No special tools required for assembly or disassembly.
- **The pumps for F, T, R, N versions are certified for drinking water use (WRAS and ACS certified).**

- Standard version for temperatures ranging from -30°C to +120°C.

CHARACTERISTICS OF 33, 46, 66, 92, 125SV SERIES

- The following versions are available:
 - **G**: vertical multistage centrifugal pump with impellers, diffusers and outer sleeve made entirely of stainless steel, and with pump casing and motor adaptor made of cast iron.
 - **N, P**: version made entirely of AISI 316 stainless steel. Innovative axial load compensation system on pumps with higher head. This ensures reduced axial thrusts and enables the use of **standard motors** that are easily found in the market. **The Lowara surface motors have efficiency values that fall within the range normally referred to as efficiency class IE2.**
 - **Balanced mechanical seal** according to EN 12756 (ex DIN 24960) and ISO 3069, which **can be replaced without removing the motor**
- Seal housing chamber designed to prevent the accumulation of air in the critical area next to the mechanical seal.
- **The pumps for G, N versions are certified for drinking water use (WRAS and ACS certified).**
- Standard version for temperatures ranging from -30°C to +120°C.
- Pump body fitted with couplings for installing pressure gauges on both suction and delivery flanges.
 - In-line ports with round flanges that can be coupled to counter-flanges, in compliance with EN 1092.
 - Mechanical sturdiness and easy maintenance. No special tools required for assembly or disassembly.

Inlet pressure of the pump plus static pressure of the water within the pump cannot exceed the nominal pressure (PN). Using different motors from those provided by Lowara could limit inlet pressure.
In this event please contact customer services.

AVAILABLE ON REQUEST

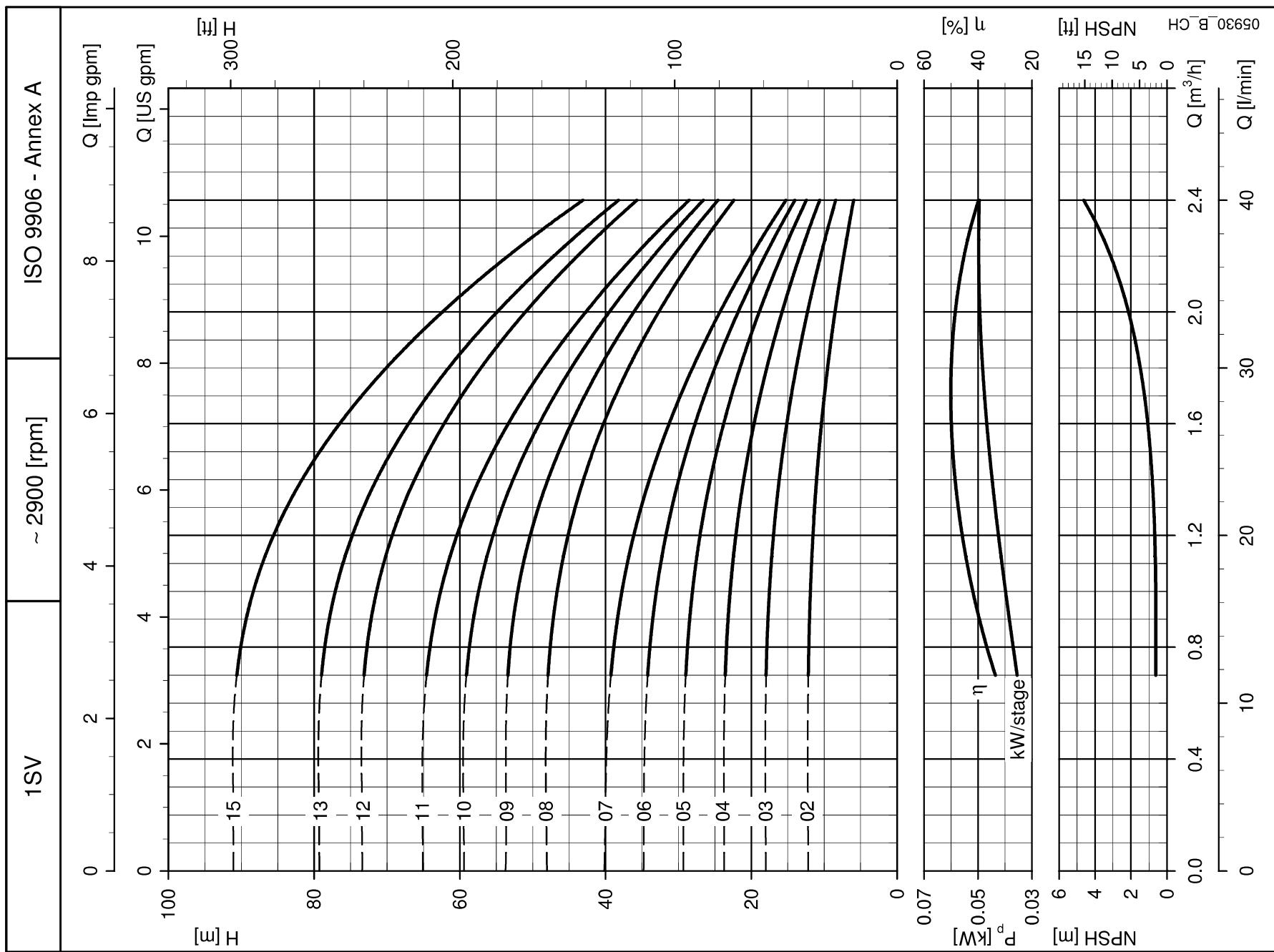
Special versions are available to suit many applications. For details see page 54.



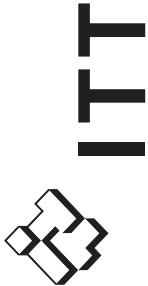
T T

Lowara

1SV SERIES, 2 TO 15 STAGES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES

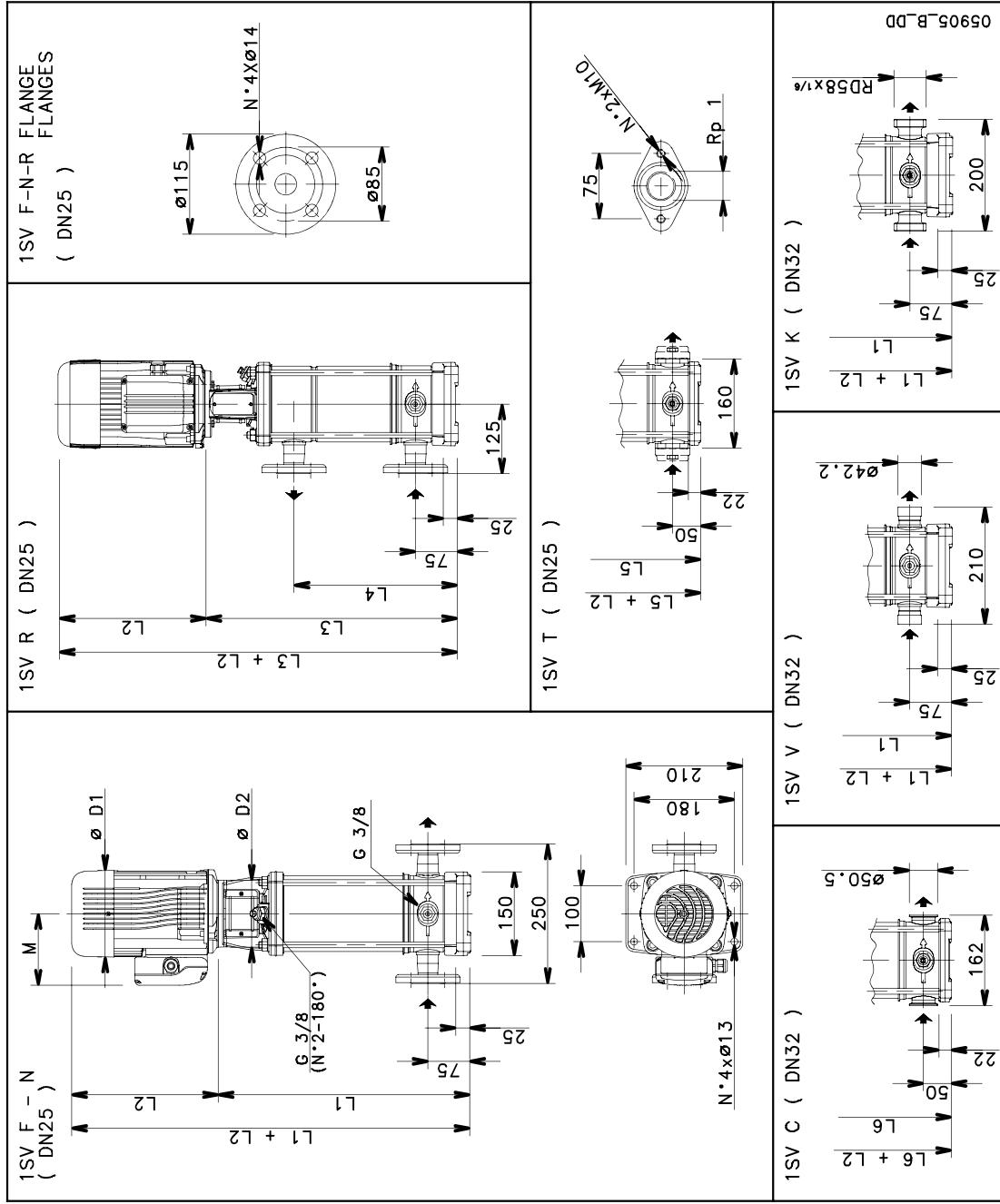


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.



Lowara

1SV SERIES, 2 TO 15 STAGES DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES



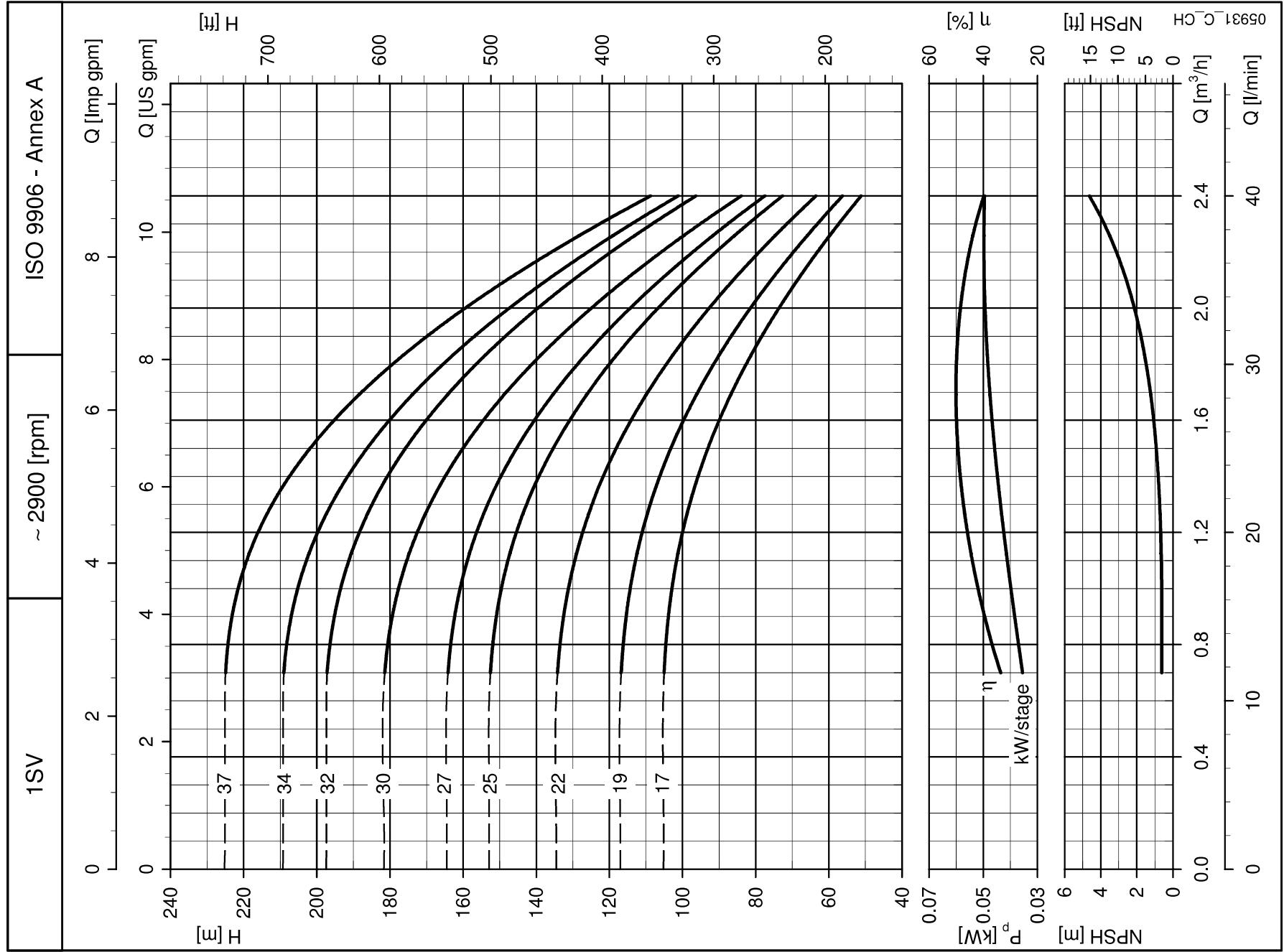
PUMP TYPE	MOTOR	DIMENSIONS (mm)										WEIGHT kg	
		L1	L2	L3	L4	L5	L6	M	1~	3~	D1	D2	
1SV02	0.37	71	278	209	209	-	253	111	111	111	120	105	8,3
1SV03	0.37	71	278	209	209	-	253	111	111	111	120	105	8,6
1SV04	0.37	71	298	209	209	-	273	111	111	111	120	105	9
1SV05	0.37	71	318	209	209	-	293	111	111	111	120	105	9,4
1SV06	0.37	71	338	209	209	-	313	111	111	111	120	105	9,8
1SV07	0.37	71	358	209	209	358	207	333	111	111	120	105	10,2
1SV08	0.55	71	378	231	231	378	227	353	121	121	140	105	10,5
1SV09	0.55	71	398	231	231	398	247	373	121	121	140	105	10,9
1SV10	0.55	71	418	231	231	418	267	393	121	121	140	105	11,3
1SV11	0.55	71	438	231	231	438	287	413	121	121	140	105	11,7
1SV12	0,75	80	468	226	263	468	307	443	121	129	140	155	120
1SV13	0,75	80	488	226	263	488	327	463	121	129	140	155	120
1SV15	0,75	80	528	226	263	528	367	503	121	129	140	155	120



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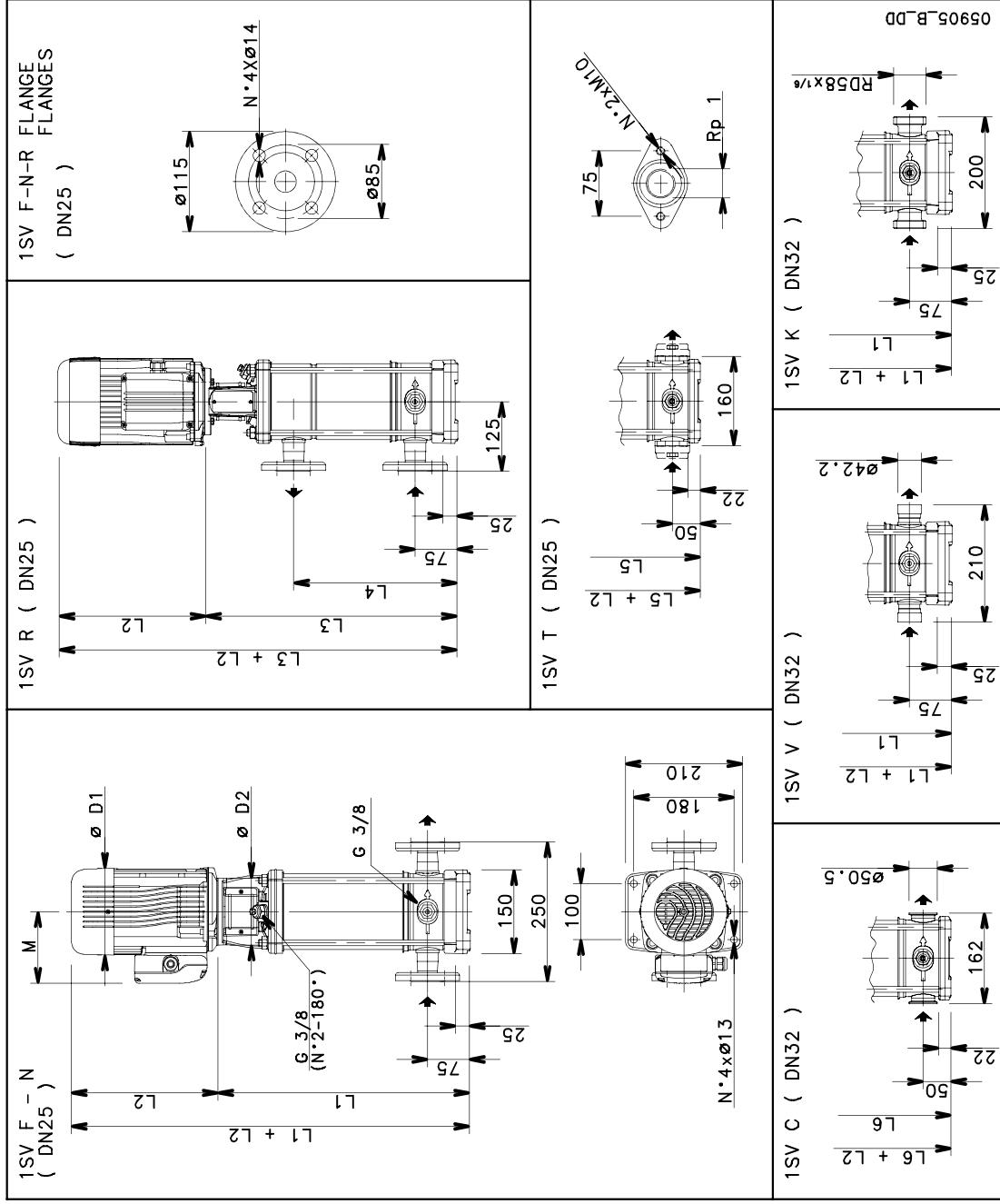
1SV SERIES, 17 TO 37 STAGES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES

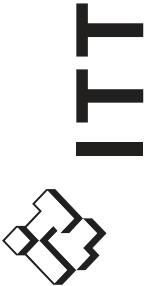




T
T

**15V SERIES, 17 TO 37 STAGES
DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**





e-SV™ SERIES MOTORS

- Standard Lowara motors with powers up to 22 kW (included) for the 2-pole version. Other motor brands are used for higher powers.
- The Lowara PLM and SM three-phase motors have efficiency values that fall within the range normally referred to as **efficiency class IE2**.
- Short-circuit squirrel-cage motor (TEFC), enclosed construction with external ventilation.
- IP55 protection.
- Class F insulation.
- Performance according to EN 60034-1.
- Standard voltage.
- Cable gland with standard passage dimensions according to EN 50262 (metric thread).

Lowara

- Single-phase** version: 220-240 V 50 Hz with built-in automatic reset overload protection up to 1.5 kW.
- For higher powers the protection must be provided by the user.
- Three-phase** version 220-240/380-415 V 50 Hz for power up to 3 kW.
- 380-415/660-690 V 50 Hz for power above 3 kW.
- Overload protection to be provided by the user.

Type of motor used:

2-Pole

- Single-phase: Lowara SM (0,37-1,5 kW)
Lowara PLM (2,2 kW)
- Three-phase: Lowara SM (0,37-0,55 kW)
Lowara SM HE (0,75-1,1 kW)
Lowara PLM (1,5-22 kW)
Other brands (30-55 kW)

SINGLE-PHASE MOTORS AT 50 Hz, 2-POLE

MOTOR TYPE	IEC SIZE*	CONSTRUCTION DESIGN	ABSORBED CURRENT In (A)			CAPACITOR			DATA FOR 230 V 50 Hz VOLTAGE					
			220-240 V	380-415 V	µF	V	min ¹	Is / In	η %	cosφ	Nm	Tn	Ts/Tn**	
0,37	71R	B14	2,79-2,85	14	450	2745	2,64	65,1	0,96	1,39	0,68			
0,55	71	B14	3,76-3,99	16	450	2820	3,72	68,9	0,91	1,86	0,61			
0,75	80R	B14	4,90-4,85	20	450	2765	3,42	70,1	0,96	2,59	0,58			
1,1	80	B14	6,88-6,65	30	450	2800	3,89	74,7	0,96	3,75	0,46			
1,5	90R	B14	9,21-8,58	40	450	2810	4,00	76,1	0,98	5,09	0,39			
2,2	90	B14	12,5-11,6	70	450	2825	4,47	82,4	0,97	7,43	0,53			

* R = Reduced size of motor casing as compared to shaft extension and flange.

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

THREE-PHASE MOTORS AT 50 Hz, 2-POLE

MOTOR TYPE	IEC SIZE*	CONSTRUCTION DESIGN	ABSORBED CURRENT in (A)						DATA FOR 400 V 50 Hz VOLTAGE					
			220-240 V	380-415 V	Y	△	380-415 V	660-990V	min ¹	Is / In	η %	cosφ	Nm	Tn
0,37	71R	B14	2,34	1,35	-	-	-	-	2770	4,32	65,3	0,66	1,38	4,14
0,55	71	B14	2,56	1,48	-	-	-	-	2845	5,97	72,3	0,74	1,85	3,74
0,75	80	B14	3,05	1,76	-	-	-	-	2895	8,70	77,8	0,79	2,47	4,71
1,1	80	B14	4,09	2,36	-	-	-	-	2895	8,98	82,5	0,82	3,63	4,62
1,5	90	B14	5,23	3,02	-	-	-	-	2885	7,86	83,8	0,86	4,96	3,34
2,2	90	B14	8,04	4,64	-	-	-	-	2895	8,63	85,7	0,80	7,25	3,74
3	100R	B14	10,7	6,19	-	-	-	-	2885	8,32	85,6	0,82	9,92	3,52
4	112R	B14	-	-	7,63	4,41	2905	9,52	89,1	0,85	13,1	3,04		
5,5	132R	B5	-	-	10,4	6,00	2900	10,3	87,5	0,87	18,1	4,43		
7,5	132	B5	-	-	14,0	8,08	2925	9,21	88,5	0,87	24,5	3,26		
11	160R	B5	-	-	20,5	11,8	2925	9,60	89,6	0,86	35,9	3,47		
15	160	B5	-	-	26,0	15,0	2945	8,45	91,7	0,91	48,6	2,26		
18,5	160	B5	-	-	33,2	19,2	2950	9,75	92,0	0,88	59,8	2,82		
22	180R	B5	-	-	38,6	22,3	2955	9,50	92,1	0,89	71,1	2,74		
30	200	B5	-	-	53,6	31,1	2955	6,50	92,9	0,87	97,0	2,40		
37	200	B5	-	-	65,8	38,1	2950	6,80	93,3	0,87	120	2,40		
45	225	B5	-	-	78,0	45,2	2960	7,00	93,6	0,89	145	2,20		
55	250	B5	-	-	95,0	55,1	2960	7,00	93,9	0,89	178	2,20		

* R = Reduced size of motor casing as compared to shaft extension and flange.

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



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e-SV™ SERIES MOTOR NOISE

The tables show the mean sound pressure (L_p) measured as per Curve A (Standard ISO 1680). Noise values were measured with the 50 Hz motor running idle with a tolerance of 3 dB (A).

2-POLE MOTORS

POWER kW	MOTOR TYPE IEC SIZE*	NOISE L_{pA} dB
0,37	71R	<70
0,55	71	<70
0,75	80R	<70
1,1	80	<70
1,5	90R	<70
2,2	90R	<70
3	100R	<70
4	112R	<70
5,5	132R	<70
7,5	132	71
11	160R	73
15	160	71
18,5	160	73
22	180R	70
30	200	72
37	200	72
45	225	75
55	250	75

*R = Reduced motor casing size with respect
to shaft extension and related flange.
1-125sv_mott_2pb0-en_a_lr



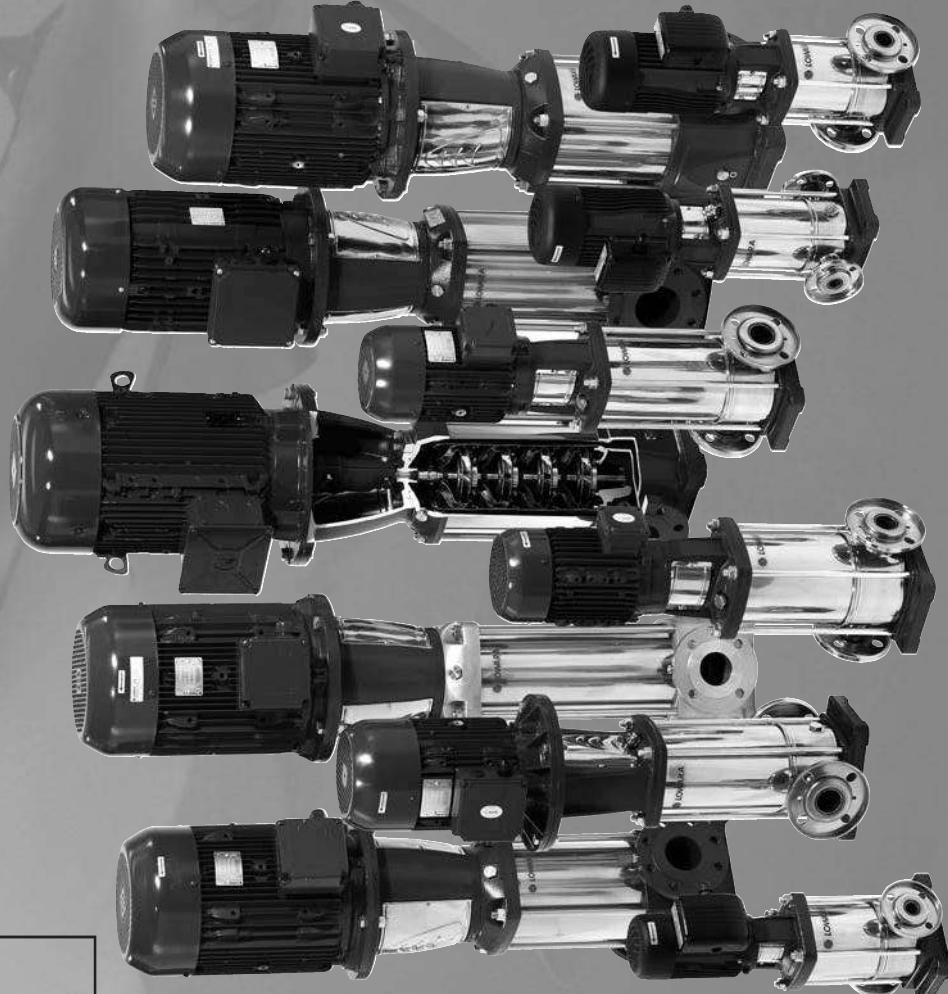
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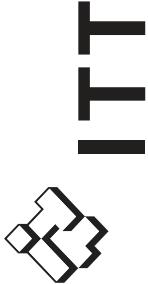
e-SV™ Series 1, 3, 5, 10, 15, 22, 33, 46, 66, 92, 125

Vertical Multistage
Electric Pumps
equipped with
high efficiency motors

50 Hz



Engineered for life



Vertical Multistage Electric Pumps

e-SV™ series with high efficiency motors



MARKET SECTORS

CIVIL, AGRICULTURAL, LIGHT INDUSTRY, WATER TREATMENT, HEATING AND AIR CONDITIONING.

APPLICATIONS

- Handling of water, free of suspended solids, in the civil, industrial and agricultural sectors.
- Pressure boosting and water supply systems.
- Irrigation systems.
- Wash systems.

• Water treatment plants.

- Handling of moderately aggressive liquids, demineralised water, water and glycol, etc.
- Circulation of hot and cold water for heating, cooling and conditioning systems.
- Boiler feed.
- Pharmaceutical industries.
- Food & beverage industries.

SPECIFICATIONS

PUMP

The SV pump is a non-self priming vertical multistage pump coupled to a standard motor. The liquid end, located between the upper cover and the pump casing, is held in place by tie rods. The pump casing is available with different configurations and connection types.

• Delivery: up to **160 m³/h**.

• Head: up to **330 m**.

• Temperature of pumped liquid:
from -30°C to +120°C for standard version.

• Maximum operating **pressure**:

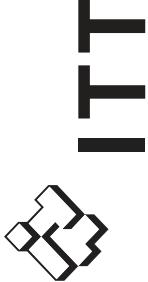
- 1, 3, 5, 10, 15, 22SV with oval flanges: 16 bar (PN16).

- 1, 3, 5, 10, 15, 22SV with round flanges or Victaulic®, Clamp or DIN 11851 connections: 25 bar (PN 25). 33, 46SV: 16, 25, 40 bar (PN 16, PN 25 or PN 40).

- 66, 92, 125SV: 16 or 25 bar (PN 16 or PN 25).

• Tested in compliance with ISO 9906 - Annex A.

• Direction of rotation: clockwise looking at the pump from the top down (marked with an arrow on the adapter and on the coupling).



Lowara

CHARACTERISTICS OF 1, 3, 5, 10, 15, 22SV SERIES

- Vertical multistage centrifugal pump. All metal parts in contact with the pumped liquid are made of stainless steel.
 - The following versions are available:
 - **F**: round flanges, in-line delivery and suction ports, AISI 304.
 - **T**: oval flanges, in-line delivery and suction ports, AISI 304.
 - **R**: round flanges, delivery port above the suction port, with four adjustable positions, AISI 304.
 - **N**: round flanges, in-line delivery and suction ports, AISI 316.
 - **V, P**: Victaulic® couplings, in-line delivery and suction ports, AISI 316.
 - **C**: Clamp couplings (DIN 32676), in-line delivery and suction ports, AISI 316.
 - **K**: threaded couplings, (DIN 11851), in-line delivery and suction ports, AISI 316.
 - Reduced axial thrusts enable the use of **standard motors** that are easily found in the market.
The Lowara SM ≥ 0.75 kW and PLM surface motors have efficiency values that fall within the range normally referred to as efficiency class IE2.
- Mechanical seal according to EN 12756 (ex DIN 24960) and ISO 3069 for 1, 3, 5SV and 10, 15, 22SV (\leq of 4 kW) series.
 - **Balanced mechanical seal** according to EN 12756 (ex DIN 24960) and ISO 3069, which **can be replaced without removing the motor from the pump** for 10, 15 and 22SV (\geq of 5,5 kW) series.
 - Seal housing chamber designed to prevent the accumulation of air in the critical area next to the mechanical seal.
 - A second plug is available for 10, 15, 22SV series.
 - Versions with round flanges that can be coupled to counter-flanges, according to EN 1092.
 - Threaded, oval counter-flanges made of stainless steel are standard supply for the T versions.
 - Round counter-flanges made of stainless steel are available on request for the F, R and N versions.
 - Easy maintenance. No special tools required for assembly or disassembly.
- **The pumps for F, T, R, N versions are certified for drinking water use (WRAS and ACS certified).**
 - Standard version for temperatures ranging from -30°C to +120°C.

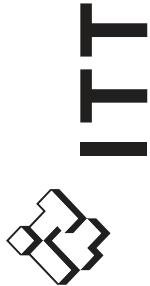
CHARACTERISTICS OF 33, 46, 66, 92, 125SV SERIES

- The following versions are available:
 - **G**: vertical multistage centrifugal pump with impellers, diffusers and outer sleeve made entirely of stainless steel, and with pump casing and motor adaptor made of cast iron.
 - **N, P**: version made entirely of AISI 316 stainless steel. Innovative axial load compensation system on pumps with higher head. This ensures reduced axial thrusts and enables the use of **standard motors** that are easily found in the market. **The Lowara surface motors have efficiency values that fall within the range normally referred to as efficiency class IE2.**
 - **Balanced mechanical seal** according to EN 12756 (ex DIN 24960) and ISO 3069, which **can be replaced without removing the motor**
 - Mechanical seal according to EN 12756 (ex DIN 24960) and ISO 3069 for 1, 3, 5SV and 10, 15, 22SV (\leq of 4 kW) series.
 - **Balanced mechanical seal** according to EN 12756 (ex DIN 24960) and ISO 3069, which **can be replaced without removing the motor from the pump** for 10, 15 and 22SV (\geq of 5,5 kW) series.
 - Seal housing chamber designed to prevent the accumulation of air in the critical area next to the mechanical seal.
 - A second plug is available for 10, 15, 22SV series.
 - Versions with round flanges that can be coupled to counter-flanges, according to EN 1092.
 - Threaded, oval counter-flanges made of stainless steel are standard supply for the T versions.
 - Round counter-flanges made of stainless steel are available on request for the F, R and N versions.
 - Easy maintenance. No special tools required for assembly or disassembly.
- **The pumps for G, N versions are certified for drinking water use (WRAS and ACS certified).**
 - Standard version for temperatures ranging from -30°C to +120°C.
 - Pump body fitted with couplings for installing pressure gauges on both suction and delivery flanges.
 - In-line ports with round flanges that can be coupled to counter-flanges, in compliance with EN 1092.
 - Mechanical sturdiness and easy maintenance. No special tools required for assembly or disassembly.

Inlet pressure of the pump plus static pressure of the water within the pump cannot exceed the nominal pressure (PN). Using different motors from those provided by Lowara could limit inlet pressure.
In this event please contact customer services.

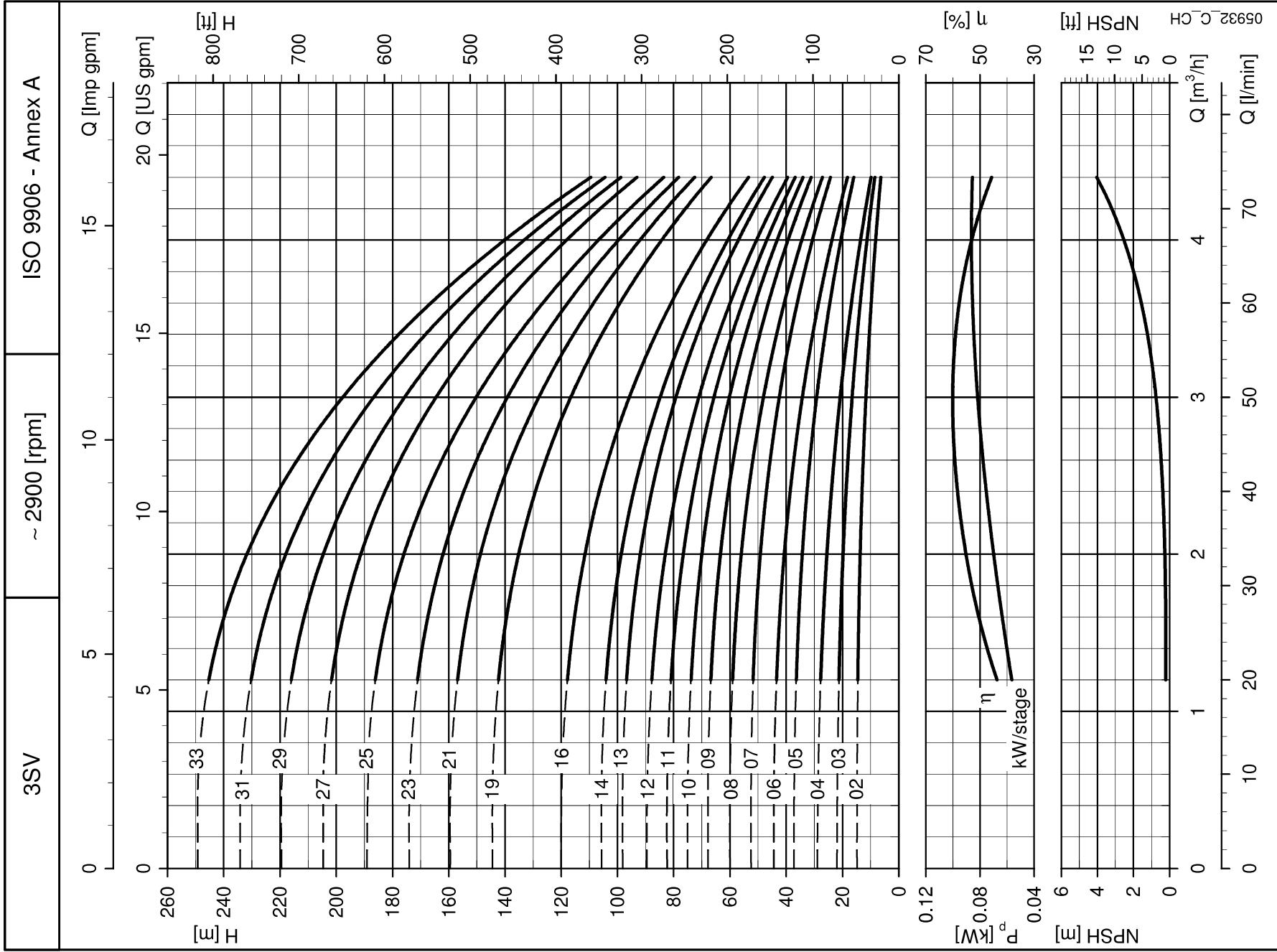
AVAILABLE ON REQUEST

Special versions are available to suit many applications. For details see page 54.

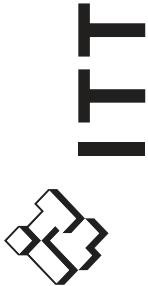


Lowara

3SV SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES

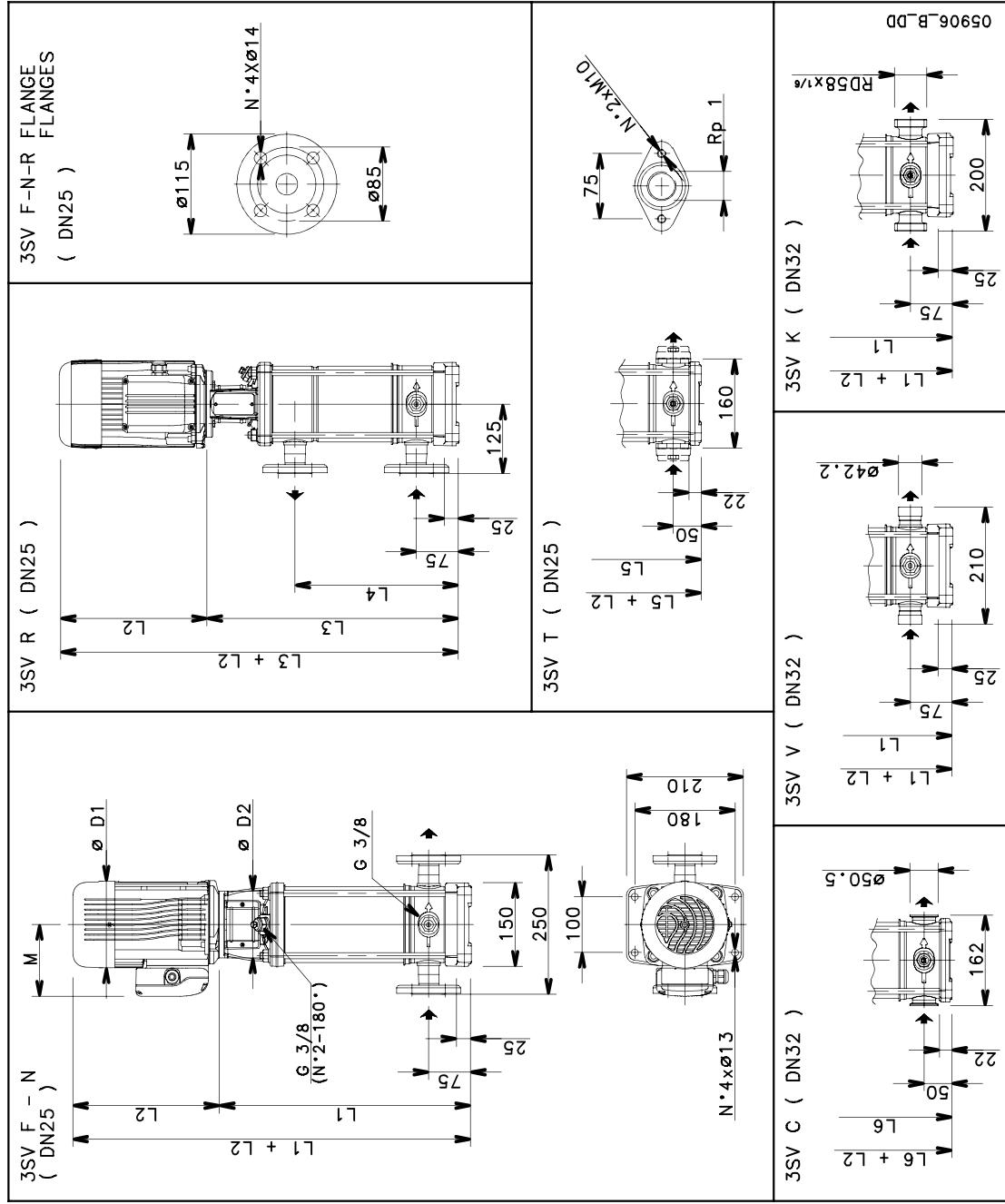


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec.}$

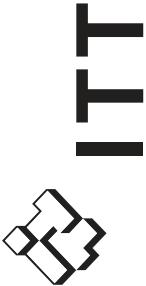


Lowara

3SV SERIES DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES



PUMP TYPE	MOTOR kW	DIMENSIONS (mm)										WEIGHT kg	ELECTRIC PUMP	
		L1	L2	1~	3~	L3	L4	L5	L6	1~	3~	D1	D2	PUMP
3SV/02	0,37	71	278	209	-	-	253	111	111	120	105	8	12,8	
3SV/03	0,37	71	278	209	-	-	253	111	111	120	105	8,4	13,2	
3SV/04	0,37	71	298	209	-	-	273	111	111	120	105	8,8	13,6	
3SV/05	0,55	71	318	231	-	-	293	121	121	140	105	9,2	14	
3SV/06	0,55	71	338	231	-	-	313	121	121	140	105	9,7	16,4	
3SV/07	0,75	80	368	226	263	368	207	343	121	129	140	155	12,0	10,9
3SV/08	0,75	80	388	226	263	388	227	363	121	129	140	155	12,0	11,3
3SV/09	1,1	80	408	263	263	408	247	383	137	129	155	155	12,0	11,7
3SV/10	1,1	80	428	263	263	428	267	403	137	129	155	155	12,0	12,1
3SV/11	1,1	80	448	263	263	448	287	423	137	129	155	155	12,0	12,5
3SV/12	1,1	80	468	263	263	468	307	443	137	129	155	155	12,0	13,3
3SV/13	1,5	90	498	263	298	498	327	473	137	134	155	174	140	14
3SV/14	1,5	90	518	263	298	518	347	493	137	134	155	174	140	14,4
3SV/16	1,5	90	558	263	298	558	387	533	137	134	155	174	140	15,2
3SV/19	2,2	90	618	298	298	618	447	593	151	134	174	174	140	16,4
3SV/21	2,2	90	658	298	298	658	487	633	151	134	174	174	140	17,2
3SV/23	2,2	90	698	298	298	698	527	-	673	151	134	174	174	140
3SV/25	2,2	90	738	298	298	738	567	-	713	151	134	174	174	18
3SV/27	3	100	788	-	298	788	607	-	763	-	134	-	174	160
3SV/29	3	100	828	-	298	828	647	-	803	-	134	-	174	160
3SV/31	3	100	868	-	298	868	687	-	843	-	134	-	174	160
3SV/33	3	100	908	-	298	908	727	-	883	-	134	-	174	160



e-SV™ SERIES MOTORS

- Standard Lowara motors with powers up to 22 kW (included) for the 2-pole version. Other motor brands are used for higher powers.
- The Lowara PLM and SM three-phase motors have efficiency values that fall within the range normally referred to as **efficiency class IE2**.
- Short-circuit squirrel-cage motor (TEFC), enclosed construction with external ventilation.
- IP55 protection.
- Class F insulation.
- Performance according to EN 60034-1.
- Standard voltage.
- Cable gland with standard passage dimensions according to EN 50262 (metric thread).

Lowara

- Single-phase** version: 220-240 V 50 Hz with built-in automatic reset overload protection up to 1.5 kW.
- For higher powers the protection must be provided by the user.
- Three-phase** version 220-240/380-415 V 50 Hz for power up to 3 kW.
- 380-415/660-690 V 50 Hz for power above 3 kW.
- Overload protection to be provided by the user.

Type of motor used:

2-Pole

- Single-phase: Lowara SM (0,37-1,5 kW)
Lowara PLM (2,2 kW)
- Three-phase: Lowara SM (0,37-0,55 kW)
Lowara SM HE (0,75-1,1 kW)
Lowara PLM (1,5-22 kW)
Other brands (30-55 kW)

SINGLE-PHASE MOTORS AT 50 Hz, 2-POLE

MOTOR TYPE kW	IEC SIZE* CONSTRUCTION DESIGN	ABSORBED CURRENT In (A)			CAPACITOR			DATA FOR 230 V 50 Hz VOLTAGE				
		220-240 V			µF			min ¹				
		V	Y	△	V	Y	△	I _s / I _n	η %	cosφ	T _n Nm	T _s /T _n **
0,37	71R	B14	2,79-2,85	14	450	2745	2,64	65,1	0,96	1,39	0,68	
0,55	71	B14	3,76-3,99	16	450	2820	3,72	68,9	0,91	1,86	0,61	
0,75	80R	B14	4,90-4,85	20	450	2765	3,42	70,1	0,96	2,59	0,58	
1,1	80	B14	6,88-6,65	30	450	2800	3,89	74,7	0,96	3,75	0,46	
1,5	90R	B14	9,21-8,58	40	450	2810	4,00	76,1	0,98	5,09	0,39	
2,2	90	B14	12,5-11,6	70	450	2825	4,47	82,4	0,97	7,43	0,53	

* R = Reduced size of motor casing as compared to shaft extension and flange.

** T_s/T_n = ratio between starting torque and nominal torque.

THREE-PHASE MOTORS AT 50 Hz, 2-POLE

MOTOR TYPE kW	IEC SIZE* CONSTRUCTION DESIGN	ABSORBED CURRENT in (A)						DATA FOR 400 V 50 Hz VOLTAGE				
		THREE-PHASE						min ¹				
		220-240 V	380-415 V	380-415 V	380-415 V	380-415 V	660-990V	660-990V	I _s / I _n	η %	cosφ	T _n Nm
0,37	71R	B14	2,34	1,35	-	-	-	-	2770	4,32	65,3	0,66
0,55	71	B14	2,56	1,48	-	-	-	-	2845	5,97	72,3	0,74
0,75	80	B14	3,05	1,76	-	-	-	-	2895	8,70	77,8	0,79
1,1	80	B14	4,09	2,36	-	-	-	-	2895	8,98	82,5	0,82
1,5	90	B14	5,23	3,02	-	-	-	-	2885	7,86	83,8	0,86
2,2	90	B14	8,04	4,64	-	-	-	-	2895	8,63	85,7	0,80
3	100R	B14	10,7	6,19	-	-	-	-	2885	8,32	85,6	0,82
4	112R	B14	-	-	7,63	4,41	2905	9,52	89,1	0,85	13,1	3,04
5,5	132R	B5	-	-	10,4	6,00	2900	10,3	87,5	0,87	18,1	4,43
7,5	132	B5	-	-	14,0	8,08	2925	9,21	88,5	0,87	24,5	3,26
11	160R	B5	-	-	20,5	11,8	2925	9,60	89,6	0,86	35,9	3,47
15	160	B5	-	-	26,0	15,0	2945	8,45	91,7	0,91	48,6	2,26
18,5	160	B5	-	-	33,2	19,2	2950	9,75	92,0	0,88	59,8	2,82
22	180R	B5	-	-	38,6	22,3	2955	9,50	92,1	0,89	71,1	2,74
30	200	B5	-	-	53,6	31,1	2955	6,50	92,9	0,87	97,0	2,40
37	200	B5	-	-	65,8	38,1	2950	6,80	93,3	0,87	120	2,40
45	225	B5	-	-	78,0	45,2	2960	7,00	93,6	0,89	145	2,20
55	250	B5	-	-	95,0	55,1	2960	7,00	93,9	0,89	178	2,20

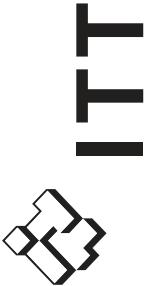
* R = Reduced size of motor casing as compared to shaft extension and flange.

** T_s/T_n = ratio between starting torque and nominal torque.

* R = Reduced size of motor casing as compared to shaft extension and flange.

** T_s/T_n = ratio between starting torque and nominal torque.

1-2243v-motm-2p50-en_a_te



e-SV™ SERIES MOTORS

- Standard Lowara motors with powers up to 22 kW (included) for the 2-pole version. Other motor brands are used for higher powers.
- The Lowara PLM and SM three-phase motors have efficiency values that fall within the range normally referred to as **efficiency class IE2**.
- Short-circuit squirrel-cage motor (TEFC), enclosed construction with external ventilation.
- IP55 protection.
- Class F insulation.
- Performance according to EN 60034-1.
- Standard voltage.
- Cable gland with standard passage dimensions according to EN 50262 (metric thread).

Lowara

- Single-phase** version: 220-240 V 50 Hz with built-in automatic reset overload protection up to 1.5 kW.
- For higher powers the protection must be provided by the user.
- Three-phase** version 220-240/380-415 V 50 Hz for power up to 3 kW.
- 380-415/660-690 V 50 Hz for power above 3 kW.
- Overload protection to be provided by the user.

Type of motor used:

2-Pole

- Single-phase: Lowara SM (0,37-1,5 kW)
Lowara PLM (2,2 kW)
- Three-phase: Lowara SM (0,37-0,55 kW)
Lowara SM HE (0,75-1,1 kW)
Lowara PLM (1,5-22 kW)
Other brands (30-55 kW)

SINGLE-PHASE MOTORS AT 50 Hz, 2-POLE

MOTOR TYPE	IEC SIZE*	CONSTRUCTION DESIGN	ABSORBED CURRENT In (A)			CAPACITOR			DATA FOR 230 V 50 Hz VOLTAGE								
			220-240 V			380-415 V			660-890V			min ¹	Is / In	η %	cosφ	Nm	Tn
			Δ	Y	△	Y	△	Y	Y	Y	Y						
0,37	71R	B14	2,79	2,85	14	450	2745	2,64	65,1	0,96	1,39	0,68					
0,55	71	B14	3,76	3,99	16	450	2820	3,72	68,9	0,91	1,86	0,61					
0,75	80R	B14	4,90	4,85	20	450	2765	3,42	70,1	0,96	2,59	0,58					
1,1	80	B14	6,88	6,65	30	450	2800	3,89	74,7	0,96	3,75	0,46					
1,5	90R	B14	9,21	8,58	40	450	2810	4,00	76,1	0,98	5,09	0,39					
2,2	90	B14	12,5	11,6	70	450	2825	4,47	82,4	0,97	7,43	0,53					

* R = Reduced size of motor casing as compared to shaft extension and flange.

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

THREE-PHASE MOTORS AT 50 Hz, 2-POLE

MOTOR TYPE	IEC SIZE*	CONSTRUCTION DESIGN	ABSORBED CURRENT in (A)						DATA FOR 400 V 50 Hz VOLTAGE								
			220-240 V			380-415 V			660-890V			min ¹	Is / In	η %	cosφ	Nm	Tn
			Δ	Y	△	Y	△	Y	Y	Y	Y						
0,37	71R	B14	2,34	1,35	-	-	-	-	2770	4,32	65,3	0,66	1,38	4,14			
0,55	71	B14	2,56	1,48	-	-	-	-	2845	5,97	72,3	0,74	1,85	3,74			
0,75	80	B14	3,05	1,76	-	-	-	-	2895	8,70	77,8	0,79	2,47	4,71			
1,1	80	B14	4,09	2,36	-	-	-	-	2895	8,98	82,5	0,82	3,63	4,62			
1,5	90	B14	5,23	3,02	-	-	-	-	2885	7,86	83,8	0,86	4,96	3,34			
2,2	90	B14	8,04	4,64	-	-	-	-	2895	8,63	85,7	0,80	7,25	3,74			
3	100R	B14	10,7	6,19	-	-	-	-	2885	8,32	85,6	0,82	9,92	3,52			
4	112R	B14	-	-	7,63	4,41	2905	9,52	89,1	0,85	13,1	3,04					
5,5	132R	B5	-	-	10,4	6,00	2900	10,3	87,5	0,87	18,1	4,43					
7,5	132	B5	-	-	14,0	8,08	2925	9,21	88,5	0,87	24,5	3,26					
11	160R	B5	-	-	20,5	11,8	2925	9,60	89,6	0,86	35,9	3,47					
15	160	B5	-	-	26,0	15,0	2945	8,45	91,7	0,91	48,6	2,26					
18,5	160	B5	-	-	33,2	19,2	2950	9,75	92,0	0,88	59,8	2,82					
22	180R	B5	-	-	38,6	22,3	2955	9,50	92,1	0,89	71,1	2,74					
30	200	B5	-	-	53,6	31,1	2955	6,50	92,9	0,87	97,0	2,40					
37	200	B5	-	-	65,8	38,1	2950	6,80	93,3	0,87	120	2,40					
45	225	B5	-	-	78,0	45,2	2960	7,00	93,6	0,89	145	2,20					
55	250	B5	-	-	95,0	55,1	2960	7,00	93,9	0,89	178	2,20					

* R = Reduced size of motor casing as compared to shaft extension and flange.

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

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

1-2243v-motm-2p50-en_a_te

HIGH PRESSURE (50/60 Hz)

e-SV™ SERIES - HIGH PRESSURE 50/60 Hz

Background and context

In the water treatment industry (Ultra or Nano filtration, reverse osmosis) in the washing and cleaning industry (High pressure washdown systems) or with boiler-feed application, high pressure is mandatory to ensure consistency in the performance of the systems. Therefore Lowara has developed e-SV™ High Pressure: a wide range of pumps and pump systems able to deliver robust and durable performances up to 45 bar.

Benefits of e-SV™ HIGH PRESSURE

Versatile range: e-SV™ High pressure is available in two different configurations: single pump solution or tandem pump solution (two pumps in series). If the inlet pressure value is already high, Lowara delivers a single pump able to withstand the high inlet pressure and deliver up to 45 bar pressure at the outlet. With applications where the high pressure has to be delivered starting from atmospheric pressure in the inlet, Lowara delivers the tandem solution able to deliver up to 45 bar pressure at the outlet of the system.

Long lasting performances: e-SV™ High Pressure benefits of a particular design of the sleeve to withstand the pressure without any limitation in the inlet pressure but maximum 45 bar measured at the outlet. The specific balanced mechanical seal and the balanced design of the impeller and the hard material intermediate bush bearing allows e-SV™ withstanding up to 45 bar without stressing the motor and the pump components, with a direct consequence on the reduction of the life cycle cost.

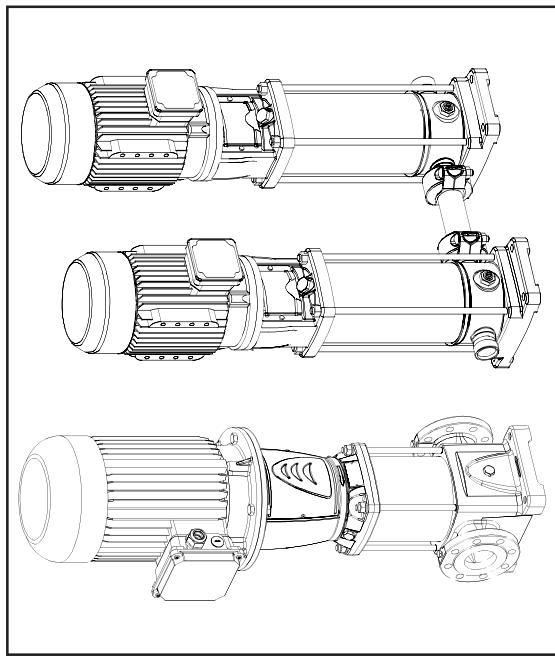
- Balanced standard mechanical seal** (EN12756) on all models. **Easy to replace, without removing the motor** from 5,5 kW.
- Hard material intermediate bush bearing** (Tungsten Carbide) to withstand heavy duty applications.
- Balanced impeller design** to reduce axial thrust for longer standard motor bearing life.
- Wide range of size to cover all requested duty points: from 15V to 125SV.
- IE2 standard motors**, 3-phase, 2-poles from 0,75 kW to 55 kW with blocked bearing **to support maximum thrust without limiting inlet pressure**.
- Hydrovar® drive available on all models to allow e-SV™ High Pressure into an intelligent, variable speed system.** Ideal for single pumping solution or multiple pumping set solution (up to 8 pumps).
- i-Alert device** to reduce life cycle costs by increasing Mean time between Failures (MTBF).

Code identification

e-SV™ High Pressure design is identified with a "**P**" in the product codification of the whole e-SV™ range.
Example: 3SV1 3P015T
P = High Pressure version.

Special features / product benefits

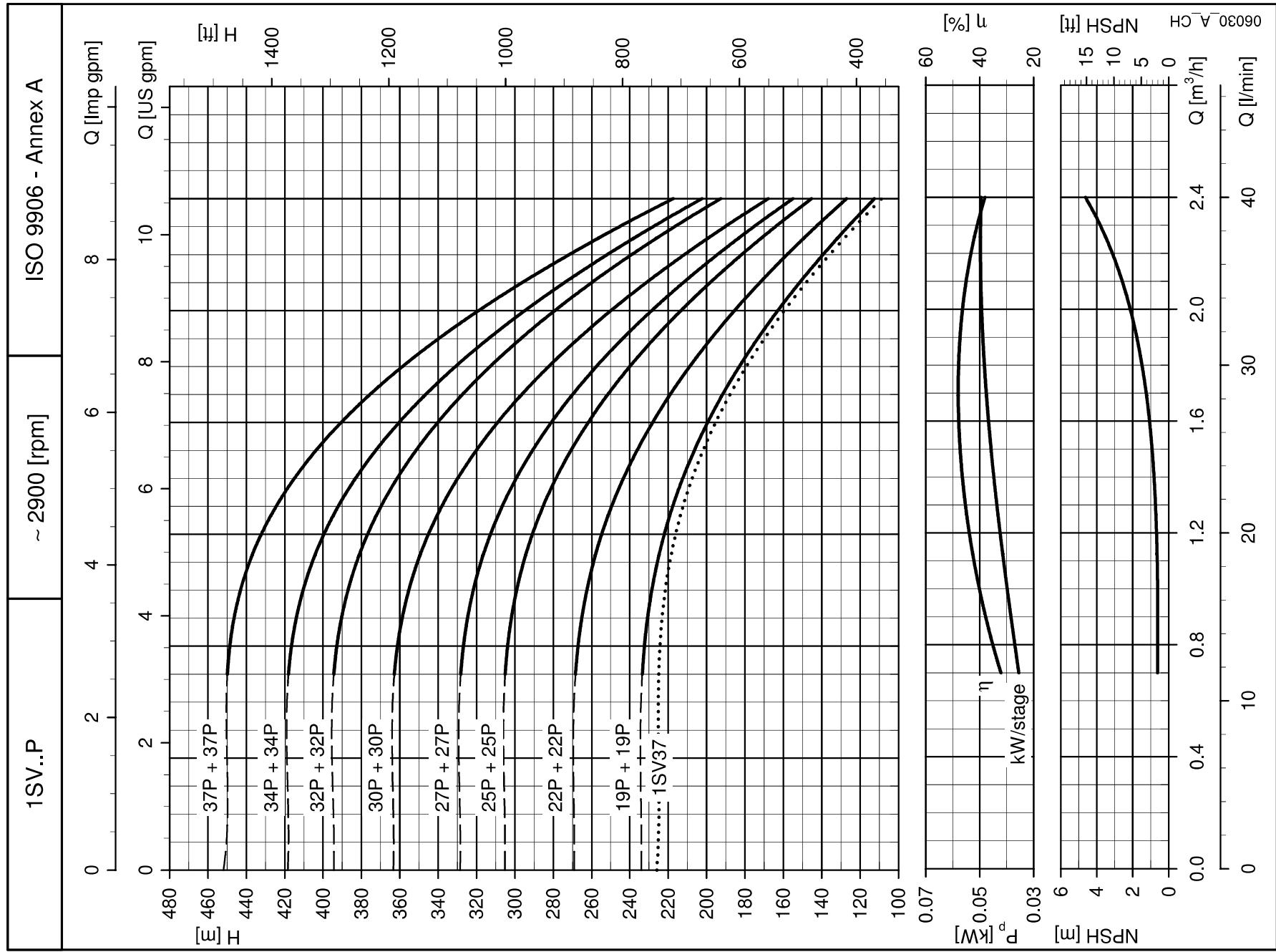
Double sleeve design to withstand high pressure up to 45 bar.



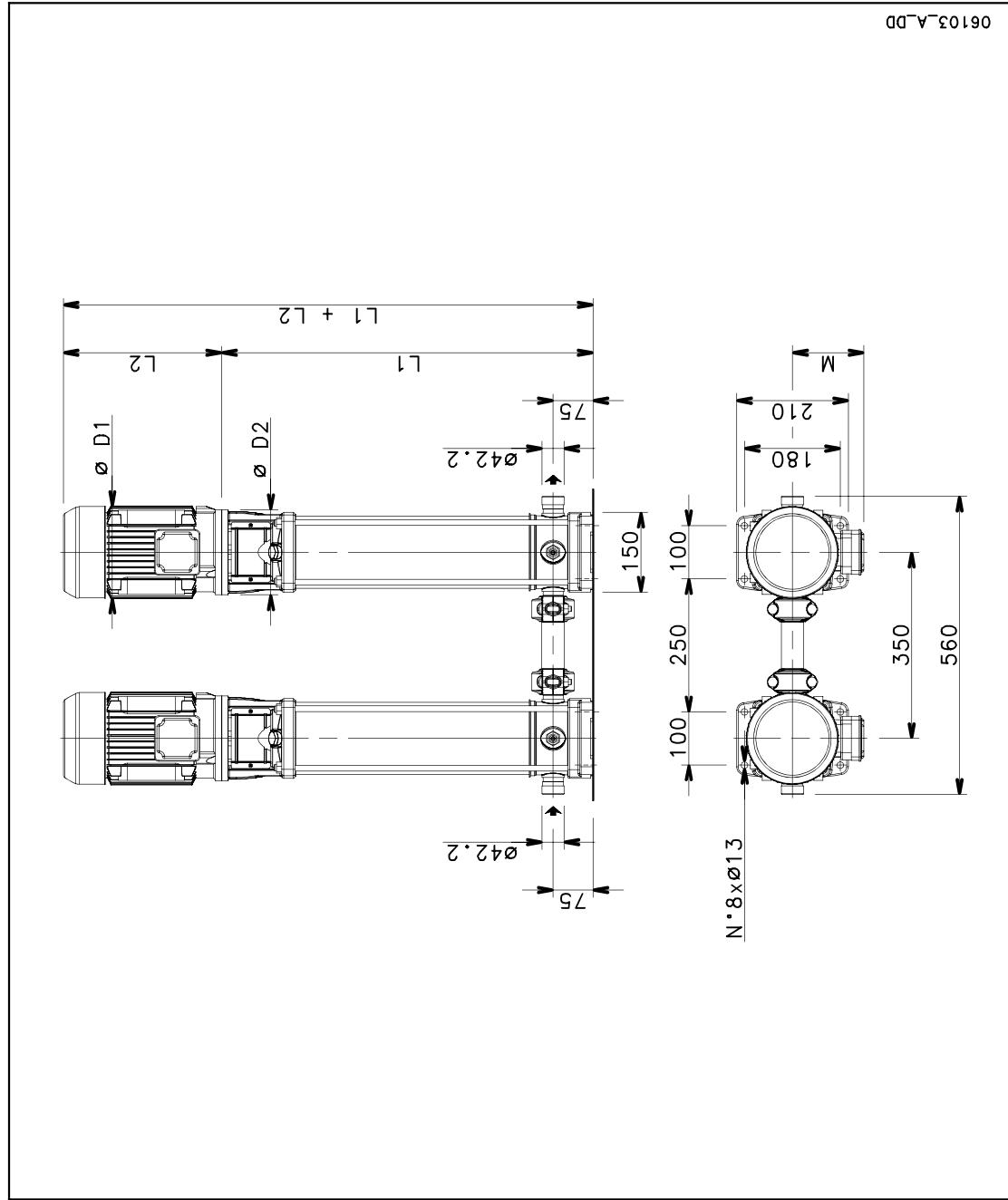
Special configurations

- e-SV™ High Pressure offers a wide range of configurations:
 - Material execution. See Material section.
 - Mechanical seal and rubbers options. See Mechanical seal and rubber section.
 - Motors options and configuration. See Motor section.
 - Hydrovar® drive fitted. See e-SVH – Hydrovar® fitted section.

1SV..P SERIES - HIGH PRESSURE OPERATING CHARACTERISTICS AT 50 Hz, 2-POLE



**1SV.P SERIES - HIGH PRESSURE
DIMENSIONS AND WEIGHTS AT 50 Hz, 2-POLE**



PUMP TYPE	MOTOR kW	DIMENSIONS (mm)					PUMP	WEIGHT (Kg) ELECTRIC PUMP
		Size	L1	L2	M	D1		
1SV19P	1,1	80	628	263	129	155	120	17,5
1SV22P	1,1	80	688	263	129	155	120	19
1SV25P	1,5	90	758	268	137	178	140	21,2
1SV27P	1,5	90	798	268	137	178	140	22,2
1SV30P	1,5	90	858	268	137	178	140	23,6
1SV32P	2,2	90	898	268	137	178	140	24,6
1SV34P	2,2	90	938	268	137	178	140	25,6
1SV37P	2,2	90	998	268	137	178	140	27
								43,2

Dimensions and weights are related to one electric pump.

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1

2

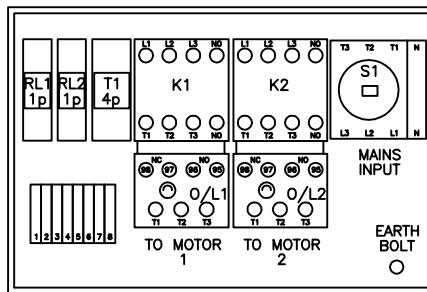
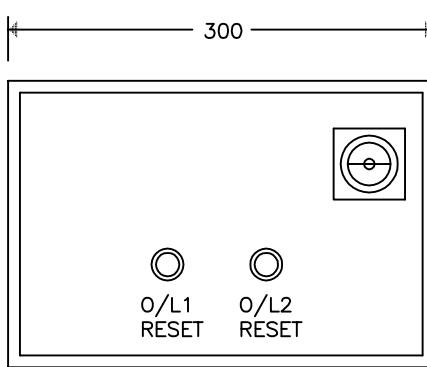
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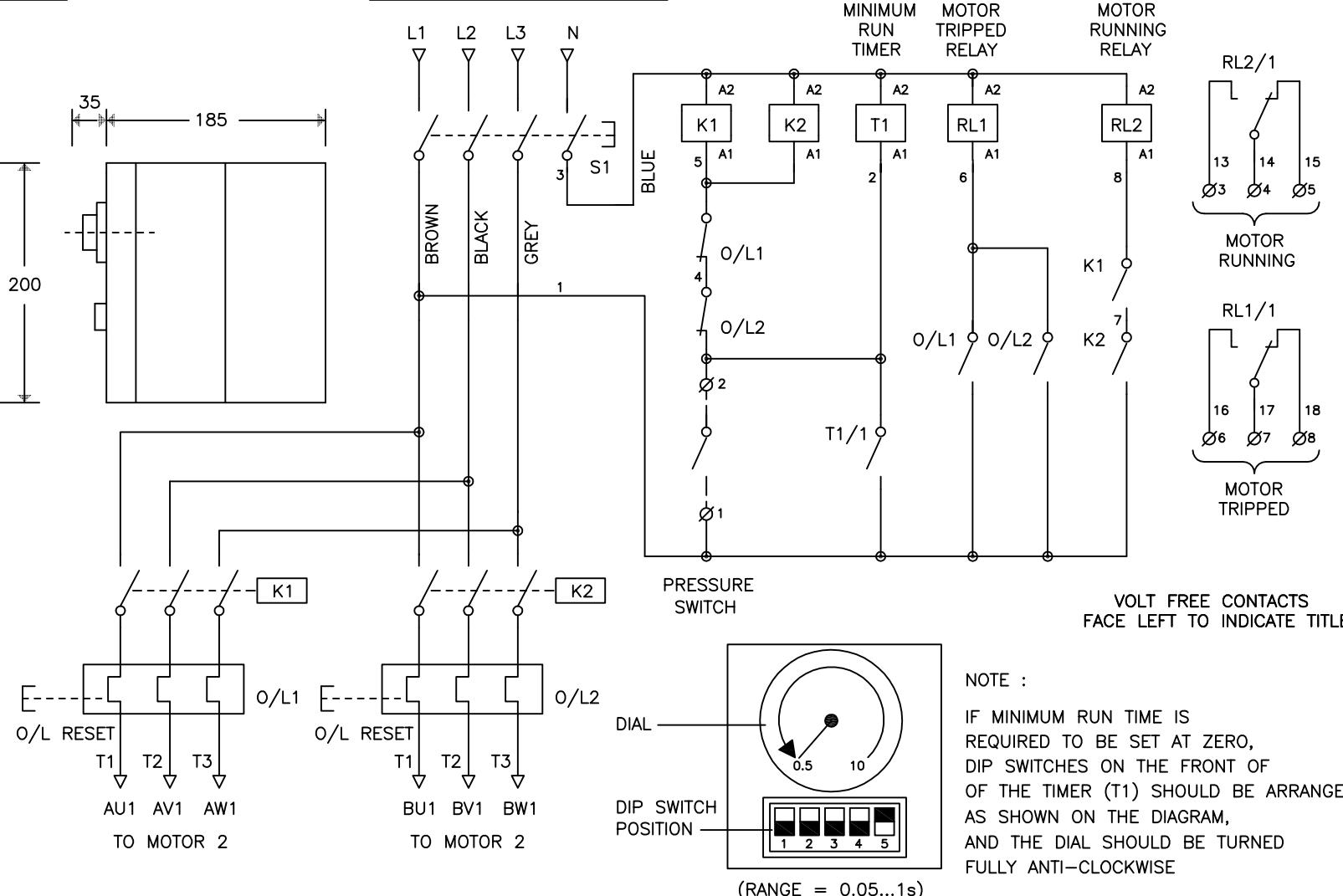
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6

7

GENERAL ARRANGEMENT

POLYCARBONATE ENCLOSURE
GREY (RAL7035)
SUITABLE FOR DIRECT WALL MOUNTING
INGRESS PROTECTION IP65

CONNECTION DIAGRAM 400V

SERIAL No.	CAD Software AUTOCAD LT	ISSUE No.	DRN	CHK	TITLE JOCKEY PUMP CONTROLLER. LPC-2JP-400TPNMR	Metron Eledyne GRANTHAM, ENGLAND TELEPHONE +44 (0)1476 516120
ISSUE 1	ISSUE 2	ISSUE 3	1	31.03.2010		
INITIAL ISSUE			.	.	DRG. No.	BE1777

Metron
Eledyne