SL1, SLV pumps

1.1 to 11 kW

50 Hz

be
think
innovate

GRUNDFOS

Table of contents

1. Introduction **4**
Introduction . . . 4
Applications . . . 4
Grundfos blueflux® . . . 5
smartdesign . . . 5

2. Performance range **6**
Performance overview . . . 6
Performance range . . . 7

3. Identification **8**
Type key . . . 8
Nameplate . . . 8

4. Selection of product **9**
Ordering the product . . . 9

5. Product range **10**
Standard pumps . . . 10
Explosion-proof pumps . . . 13

6. Variants **16**
List of variants . . . 16

7. Construction **18**
Drawings - SL1 pumps . . . 18
Drawings - SLV pumps . . . 21

8. Product description **25**
Features . . . 25
Operating conditions . . . 27
Approvals . . . 28
Controllers . . . 29
Wiring diagrams . . . 32

9. Curve charts **34**
How to read the curve charts . . . 34
Curve conditions . . . 35
Performance tests . . . 35
Certificates . . . 35
Witness test . . . 35

10. Performance curves and technical data **36**
SL1.50.65 . . . 36
SL1.50.80 . . . 39
SL1.80.80 . . . 42
SL1.80.100 . . . 48
SL1.100.100 . . . 54
SL1.100.150 . . . 57
SLV.65.65 . . . 60
SLV.65.80 . . . 63
SLV.80.80 . . . 66
SLV.80.100 . . . 76
SLV.100.100 . . . 86

11. Dimensions and weights **90**
Auto-coupling installation . . . 90
Free standing installation (without ring stand) . . . 92
Free standing installation (with ring stand) . . . 94
Weights . . . 96

12. Accessories **97**
Installation systems . . . 97
Other accessories . . . 98

13. Grundfos Product Center **99**

1. Introduction

Introduction

This data booklet deals with Grundfos submersible wastewater and sewage pumps types SL1 and SLV.

Two types of pumps are available:

- SL1 pumps with S tube® impeller
- SLV pumps with SuperVortex (free-flow) impeller.

Fig. 1 SL1 (S tube®) and SLV (SuperVortex) pumps

The S tube® impeller is the only impeller available in the wastewater market that does not compromise either efficiency or free passage through the pump.

The pumps are SuperVortex or S tube® impeller pumps specifically designed for pumping sewage and wastewater in a wide range of private, municipal and industrial applications.

The pumps are made of resistant materials, such as cast iron and stainless steel. These materials ensure long and reliable operation.

The pumps are fitted with IEC IE3 premium efficiency motors from 1.1 kW up to and including 11 kW. The motors are either 2- or 4-pole motors, depending on the motor size.

The free passage in the pumps is 50 to 100 mm.

The pumps are available for these types of installation:

- submerged installation on auto-coupling system
- submerged installation, free-standing.

Applications

Typical applications are transfer of liquids, such as:

- domestic wastewater
- industrial wastewater
- municipal wastewater
- wastewater with a high content of fibres (SuperVortex impeller)
- drainage and surface water
- process and cooling water.

The pumps are ideal for pumping the above liquids from places such as:

- municipal network pumping stations
- inlet pumping stations in wastewater treatment plants
- primary clarification in wastewater treatment plants
- secondary clarification in wastewater treatment plants
- stormwater pumping stations
- public buildings
- residential buildings
- factories and industry.

Grundfos blueflux®

Grundfos blueflux® guarantees the highest motor efficiency from Grundfos. Every aspect of the technology driving a Grundfos blueflux® motor has been developed to meet the actual needs of the application for which the pumping system or solution is installed - and always with an emphasis on reliability and efficiency.

A pumping system or solution with a Grundfos blueflux® motor has a considerably higher total efficiency than comparable solutions and reduces life cycle costs substantially. The combination of motor technology, advanced pump design and speed control ensures superior system control, reduced day-to-day service costs and lower environmental impact.

Grundfos blueflux® represents a range of skills and innovative processes that Grundfos brings to motor technology development. Grundfos was instrumental in the drafting and passing of the EuP Directive, setting the ecodesign requirements for electric motors in the European Union.

As a technological leader within high-efficiency motors, Grundfos was invited to help with the technical aspects of the legislation. Grundfos was able to create political awareness of the huge savings potential of variable speed motors and, at a later stage, influence the decision-makers to include variable-frequency drives in the new legislation. As a consequence, Europe's annual electricity consumption will be reduced by 5 % by 2020 - about ten times more than originally planned before Grundfos intervened.

The Grundfos blueflux® label guarantees that the motor technology used is ahead of current market standards and either meets or exceeds legislative requirements for motor efficiency, where these applied.

smartdesign

smartdesign

The smartdesign features of our SL1 and SLV pumps include:

- moisture-proof cable plug connection made of corrosion-resistant stainless steel with conductors embedded in polyurethane sealant
- stainless steel clamp connection between motor housing and pump housing for easy service
- power cable incorporating wires for thermal sensors in the motor windings
- no extra cable required for sensors in pumps with sensors
- monitoring of operating conditions for pumps with sensors
- moisture detector for continuous monitoring of motor enclosure and automatic cut-out in case of leakage
- heavy-duty bearings greased for life
- built for frequency-converter operation
- smooth pump surface prevents dirt and impurities from sticking to the pump
- self-cleaning S tube® impeller with a long vane reducing the risk of jamming or clogging, or Super-Vortex impeller with high pumping efficiency and less downtime
- explosion-proof motors for potentially explosive environments (ATEX-approved pumps)
- motor in insulation class H (180 °C), enclosure class IP68 with one thermal sensor in each phase
- temperature rise class A
- service-friendly design:
- clamp connection between motor and pump housing
- double mechanical cartridge shaft seal
- cable connection to motor via plug.
- motor built of highly efficient components, offering lower motor temperature and longer life.

2. Performance range

Performance overview

Figure 2 shows the performance overview of SE/SL pumps. Figure 3 shows the performance range of SL1 and SLV sewage and wastewater pumps. It gives an overview of the various sizes and impeller types.

Note: For information about the performance range of each individual pump, see pages 36 to 89. If your required duty point exceeds the (grey) performance range below, please see the Grundfos SE(1/V), SL(1/V) and S range data booklets available in Grundfos Product Center.

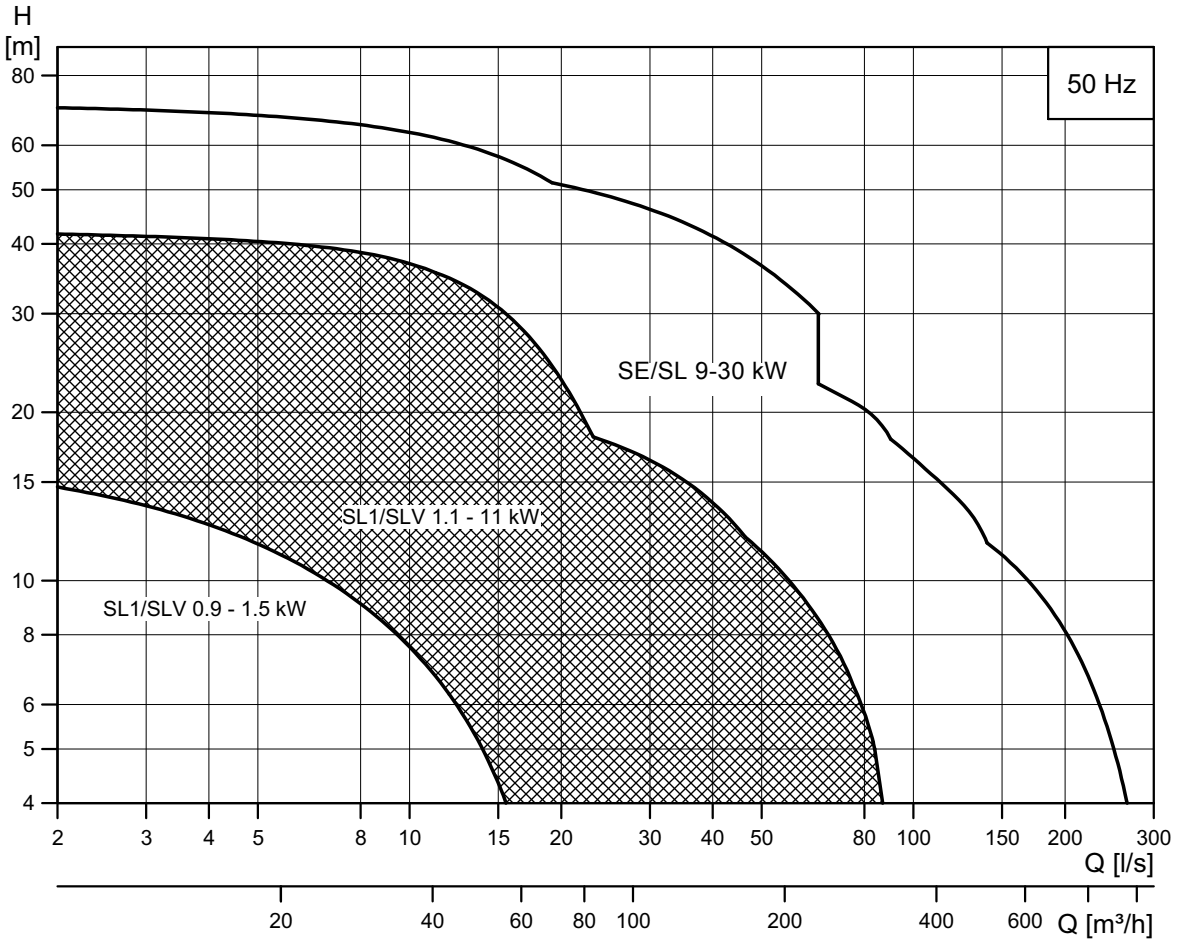


Fig. 2 Performance overview

Performance range

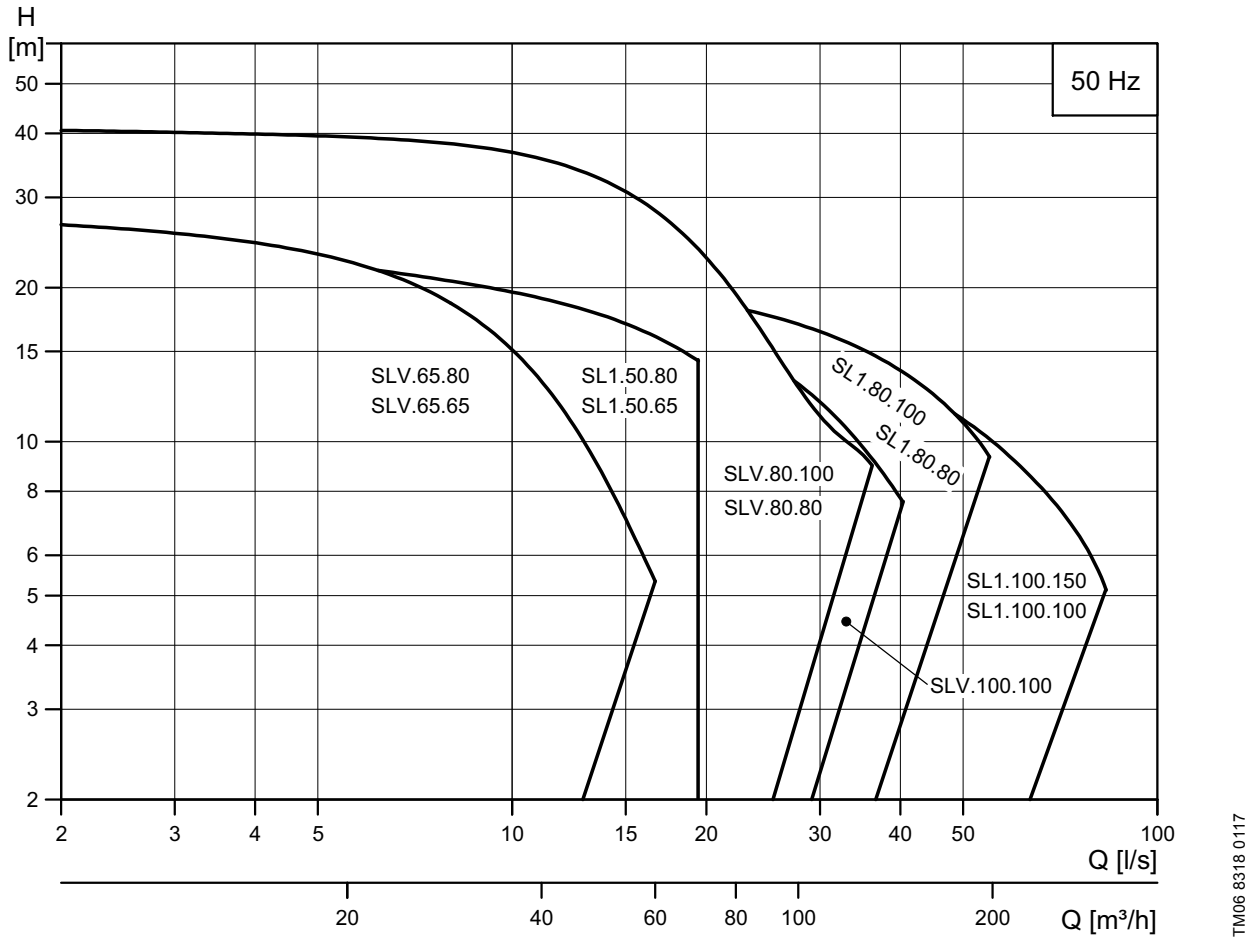


Fig. 3 Performance range

Performance curves and technical data

SL1 pumps	Page
SL1.50.65.22.(A).(EX).2.--.C	36
SL1.50.65.30.(A).(EX).2.--.C	37
SL1.50.65.40.(A).(EX).2.--.C	38
SL1.50.80.22.(A).(EX).2.--.C	39
SL1.50.80.30.(A).(EX).2.--.C	40
SL1.50.80.40.(A).(EX).2.--.C	41
SL1.80.80.15.(A).(EX).4.--.C	42
SL1.80.80.22.(A).(EX).4.--.C	43
SL1.80.80.30.(A).(EX).4.--.C	44
SL1.80.80.40.(A).(EX).4.--.C	45
SL1.80.80.55.(A).(EX).4.--.C	46
SL1.80.80.75.(A).(EX).4.--.C	47
SL1.80.100.15.(A).(EX).4.--.C	48
SL1.80.100.22.(A).(EX).4.--.C	49
SL1.80.100.30.(A).(EX).4.--.C	50
SL1.80.100.40.(A).(EX).4.--.C	51
SL1.80.100.55.(A).(EX).4.--.C	52
SL1.80.100.75.(A).(EX).4.--.C	53
SL1.100.100.40.(A).(EX).4.--.C	54
SL1.100.100.55.(A).(EX).4.--.C	55
SL1.100.100.75.(A).(EX).4.--.C	56
SL1.100.150.40.(A).(EX).4.--.C	57
SL1.100.150.55.(A).(EX).4.--.C	58
SL1.100.150.75.(A).(EX).4.--.C	59

SLV pumps	Page
SLV.65.65.22.(A).(EX).2.--.C	60
SLV.65.65.30.(A).(EX).2.--.C	61
SLV.65.65.40.(A).(EX).2.--.C	62
SLV.65.80.22.(A).(EX).2.--.C	63
SLV.65.80.30.(A).(EX).2.--.C	64
SLV.65.80.40.(A).(EX).2.--.C	65
SLV.80.80.11.(A).(EX).4.--.C	66
SLV.80.80.13.(A).(EX).4.--.C	67
SLV.80.80.15.(A).(EX).4.--.C	68
SLV.80.80.22.(A).(EX).4.--.C	69
SLV.80.80.40.(A).(EX).2.--.C	70
SLV.80.80.40.(A).(EX).4.--.C	71
SLV.80.80.60.(A).(EX).2.--.C	72
SLV.80.80.75.(A).(EX).2.--.C	73
SLV.80.80.92.(A).(EX).2.--.C	74
SLV.80.80.110.(A).(EX).2.--.C	75
SLV.80.100.11.(A).(EX).4.--.C	76
SLV.80.100.13.(A).(EX).4.--.C	77
SLV.80.100.15.(A).(EX).4.--.C	78
SLV.80.100.22.(A).(EX).4.--.C	79
SLV.80.100.40.(A).(EX).2.--.C	80
SLV.80.100.40.(A).(EX).4.--.C	81
SLV.80.100.60.(A).(EX).2.--.C	82
SLV.80.100.75.(A).(EX).2.--.C	83

SLV pumps	Page
SLV.80.100.92.(A).(EX).2.--.C	84
SLV.80.100.110.(A).(EX).2.--.C	85
SLV.100.100.30.(A).(EX).4.--.C	86
SLV.100.100.40.(A).(EX).4.--.C	87
SLV.100.100.55.(A).(EX).4.--.C	88
SLV.100.100.75.(A).(EX).4.--.C	89

3. Identification

Type key

The pump can be identified by means of the type designation. The type designation is stated on the nameplate of the pump.

Example: **SLV.80.80.110.A.Ex.2.5.1D**

Code	Explanation	Designation
SL	Grundfos sewage/wastewater pump	Pump type
1	S tube® impeller	Impeller type
V	SuperVortex (free-flow) impeller	
50	50 mm	Free spherical passage
65	65 mm	
80	80 mm	
100	100 mm	
65	DN 65	Pump outlet
80	DN 80	
100	DN 100	
150	DN 150	
40	Output power, P2 / 10 40 = 4.0 kW	Power [kW]
[ ]	Standard	Sensor version
A	Sensor version	
[ ]	Non-explosion-proof pump, standard	Pump version
Ex	Explosion-proof pump	
2	2-pole	Number of poles
4	4-pole	
5	50 Hz	Frequency [Hz]
0B	3 x 400-415 V, DOL	Voltage code and starting method
0D	3 x 380-415 V, DOL	
1D	3 x 380-415 V, D/Y	
0E	3 x 220-240 V, DOL	
1E	3 x 220-240 V, Y/D	
[ ]	1st generation	Generation
A	2nd generation	
B	3rd generation	
C	4th generation	
[ ]	Complete pump in cast iron	Pump material
Q	Cast iron pump with stainless steel impeller	
[ ]	Pump in standard range	Customisation
Z	Custom-built pump	

Note: The pump types are not available in all variants.

Nameplate

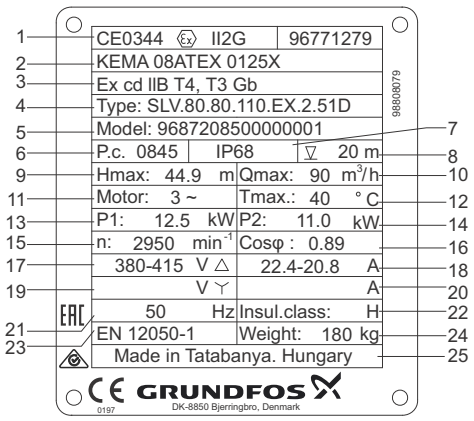


Fig. 4 Nameplate

Pos.	Description
1	Approvals
2	Explosion protection certificate No.
3	Ex description
4	Pump type designation
5	Model number
6	Production code (year/week)
7	Enclosure class
8	Maximum installation depth
9	Maximum head
10	Maximum flow rate
11	Number of phases
12	Maximum liquid temperature
13	Rated power input, P1
14	Rated power output, P2
15	Rated speed
16	Cos φ, 1/1-load
17	Rated voltage, D
18	Rated current, D
19	Rated voltage, Y
20	Rated current, Y
21	Frequency
22	Insulation class
23	Approval
24	Weight
25	Country of production

4. Selection of product

Ordering the product

When ordering a pump, you need to take the following five aspects into consideration:

1. pump type
2. custom-built variation (option)
3. explosion-proof version
4. accessories
5. pump controller.

Pump type

Use the table below to identify the pump type that best fulfils your needs. The table is for guidance only.

Description	SL1	SLV
Liquid and operation characteristics		
Dry solids content up to 3 %	•	•
Dry solids content up to 5 %		•
Relatively low content of fibres and solids	•	•
Relatively high content of fibres and solids		•
Relatively low number of operating hours	•	•
Relatively high number of operating hours	•	
Application		
Stormwater	•	•
Groundwater	•	•
Drainage and surface water	•	•
Drainage and surface water with small impurities	•	•
Abrasive surface water	•	•
Wastewater with long fibres, e.g. from laundries	•	•
Domestic wastewater with discharge from toilets	•	•
Municipal sewage	•	•
Sewage from commercial buildings	•	•
Industrial process water with solids and fibres		•
Industrial process water with solids	•	•
Industrial process water without solids and fibres	•	

When you have selected the pump type, use the sections *Product range* on page 10 and *Type key* on page 8 to identify the pump that best fulfils your needs.

The list below is a detailed description of the product you get if you order the following pump:

Pump	Product no.
SLV.65.65.22.2.51D.C	98626044

- pump as specified in the type key
- 10 m cable
- paint: NCS 9000N black (RAL 9005), gloss code 30, thickness 100 µm
- thermal switch in stator windings or three thermal sensors (PTC)
- one moisture switch in the motor chamber
- tested according to ISO 9906:2012 grade 3B.

See section *10. Performance curves and technical data* for selection of a standard pump.

Note: Product specific data for the pump can also be seen in Grundfos Product Center using the product number 98626044.

Custom-built variants

The pumps can be customised to meet individual requirements. Many pump features and options are available for customisation, such as explosion-proof versions, various cable lengths or special materials.

Variants can be seen in *Variants* on page 16.

For requirements or designs not included in the list, please contact Grundfos.

Explosion-proof version

The entire range is available in explosion-proof versions.

For further information about explosion-proof pumps, please see page 28.

Accessories

Depending on the installation type, you may need to order accessories. See *Accessories* on page 97 for selection of the correct accessories.

Note: Ordered accessories are not factory-fitted.

Controller

The following controllers are available:

- LC/LCD 107 with air bells
- LC/LCD 108 with float switches
- LC/LCD 110 with level electrodes
- Grundfos Dedicated Controls.

TM06 0918 1314

Fig. 5 Grundfos Dedicated Controls

Grundfos Dedicated Controls is a control system designed for installation in either commercial buildings or network pumping stations with one to six pumps.

As standard, the system is supplied with application-optimised software and can be configured to meet your specific pumping needs.

For further information about Grundfos Dedicated Controls, see page 29.

5. Product range

Standard pumps

SL1, cast iron pumps

Pump type	Sensor		Poles	Voltage				
				3 x 400-415 V DOL	3 x 380-415 V DOL	3 x 220-240 V DOL	3 x 380-415 V Y/D	3 x 220-240 V Y/D
	Yes	No		[0B]	[OD]	[0E]	[1D]	[1E]
SL1.50.65.22	•		2	98626308	98626303	98626297	98626314	
		•	2	98626078	98624257	98626069	98626085	
SL1.50.65.30	•		2	98626309	98626304	98626298	98626315	
		•	2	98626079	98624258	98626070	98626086	
SL1.50.65.40	•		2	98626305	98626310		98626316	98626299
		•	2	98626075	98626080		98624259	98626071
SL1.50.80.22	•		2	98626311	98617680	98626300	98626317	
		•	2	98626082	98617678	98626072	98626087	
SL1.50.80.30	•		2	98626312	98626306	98626301	98626318	
		•	2	98626083	98626076	98626073	98626088	
SL1.50.80.40	•		2	98626307	98626313		98626319	98626302
		•	2	98626077	98626084		98624260	98626074
SL1.80.80.15	•		4	98626238	98626189	98626141		
		•	4	98626020	98624693	98625875		
SL1.80.80.22	•		4	98626242	98624696	98626145	98626283	
		•	4	98626024	98624251	98625879	98626057	
SL1.80.80.30	•		4	98626222	98626175	98626127	98626273	
		•	4	98626006	98624669	98625861	98626049	
SL1.80.80.40	•		4	98626178	98626225		98626276	98626130
		•	4	98625968	98626009		98626052	98625864
SL1.80.80.55	•		4	98626287	98626196		98626246	98626149
		•	4	98626061	98625980		98624697	98625893
SL1.80.80.75	•		4	98626201	98626252		98626292	98626154
		•	4	98625985	98626032		98624703	98625898
SL1.80.100.15	•		4	98626239	98626190	98626142		
		•	4	98626021	98625977	98625876		
SL1.80.100.22	•		4	98626243	98626193	98626146	98626284	
		•	4	98626025	98624695	98625880	98626058	
SL1.80.100.30	•		4	98626223	98626176	98626128	98626274	
		•	4	98626007	98625966	98625862	98626050	
SL1.80.100.40	•		4	98626179	98626226		98626277	98626131
		•	4	98625969	98626010		98626053	98625865
SL1.80.100.55	•		4	98626288	98626197		98626247	98626150
		•	4	98626062	98625981		98626028	98625894
SL1.80.100.75	•		4	98626202	98626253		98626293	98626155
		•	4	98625986	98626033		98626066	98625899
SL1.100.100.40	•		4	98626180	98626227		98626278	98626132
		•	4	98625970	98626011		98624701	98625866
SL1.100.100.55	•		4	98626289	98626198		98626248	98626151
		•	4	98626063	98625982		98626029	98625895
SL1.100.100.75	•		4	98626203	98626254		98626294	98626156
		•	4	98625987	98626034		98626067	98625900
SL1.100.150.40	•		4	98626181	98626228		98626279	98626133
		•	4	98625971	98626012		98626054	98625867
SL1.100.150.55	•		4	98626290	98626199		98626250	98626152
		•	4	98626064	98625983		98626030	98625896
SL1.100.150.75	•		4	98626204	98626255		98626295	98626157
		•	4	98625988	98626035		98626068	98625901

SLV, cast iron pumps

Pump type	Sensor		Poles	Voltage				
				3 x 400-415 V DOL	3 x 380-415 V DOL	3 x 220-240 V DOL	3 x 380-415 V Y/D	3 x 220-240 V Y/D
	Yes	No		[0B]	[OD]	[0E]	[1D]	[1E]
SLV.65.65.22	•		2	98626216	98626169	98626121	98626267	
		•	2	98626000	98624199	98625855	98626044	
SLV.65.65.30	•		2	98626206	98626159	98626111	98626257	
		•	2	98625990	98624165	98625845	98626037	
SLV.65.65.40	•		2	98626161	98626208		98626259	98626113
		•	2	98625943	98625992		98624254	98625847
SLV.65.80.22	•		2	98626217	98626170	98626122	98626268	
		•	2	98626001	98625961	98625856	98626045	
SLV.65.80.30	•		2	98626207	98626160	98626112	98626258	
		•	2	98625991	98625942	98625846	98626038	
SLV.65.80.40	•		2	98626162	98626209		98626260	98626114
		•	2	98625944	98625993		98624699	98625848
SLV.80.80.11	•		4	98626233	98626185	98626137		
		•	4	98626016	98625975	98625871		
SLV.80.80.13	•		4	98626236	98626187	98626139		
		•	4	98626018	98624692	98625873		
SLV.80.80.15	•		4	98626240	98626191	98626143		
		•	4	98626022	98624694	98625877		
SLV.80.80.22	•		4	98626244	98626194	98626147	98626285	
		•	4	98626026	98624252	98625891	98626059	
SLV.80.80.40	•		2	98626163	98626210		98626261	98626115
		•	4	98626182	98626230		98626280	98626134
	•		2	98625945	98625994		98626039	98625849
		•	4	98625972	98626013		98624702	98625868
SLV.80.80.60	•		2	98626165	98626212		98626263	98626117
		•	2	98625947	98625996		98626041	98625851
SLV.80.80.75	•		2	98626171	98626218		98626269	98626123
		•	2	98625962	98626002		98624255	98625857
SLV.80.80.92	•		2	98626173	98626220		98626271	98626125
		•	2	98625964	98626004		98626047	98625859
SLV.80.80.110	•		2	98626167	98626214		98626265	98626119
		•	2	98625949	98625998		98624700	98625853
SLV.80.100.11	•		4	98626235	98626186	98626138		
		•	4	98626017	98624691	98625872		
SLV.80.100.13	•		4	98626237	98626188	98626140		
		•	4	98626019	98625976	98625874		
SLV.80.100.15	•		4	98626241	98626192	98626144		
		•	4	98626023	98625978	98625878		
SLV.80.100.22	•		4	98626245	98626195	98626148	98626286	
		•	4	98626027	98625979	98625892	98626060	
SLV.80.100.40	•		2	98626164	98626211		98626262	98626116
	•		4	98626183	98626231		98626281	98626135
		•	2	98625946	98625995		98626040	98625850
		•	4	98625973	98626014		98626055	98625869
SLV.80.100.60	•		2	98626166	98626213		98626264	98626118
		•	2	98625948	98625997		98626042	98625852
SLV.80.100.75	•		2	98626172	98626219		98626270	98626124
		•	2	98625963	98626003		98626046	98625858
SLV.80.100.92	•		2	98626174	98626221		98626272	98626126
		•	2	98625965	98626005		98626048	98625860
SLV.80.100.110	•		2	98626168	98626215		98626266	98626120
		•	2	98625950	98625999		98626043	98625854
SLV.100.100.30	•		4	98626224	98626177	98626129	98626275	
		•	4	98626008	98625967	98625863	98626051	
SLV.100.100.40	•		4	98626184	98626232		98626282	98626136
		•	4	98625974	98626015		98626056	98625870
SLV.100.100.55	•		4	98626291	98626200		98626251	98626153
		•	4	98626065	98625984		98626031	98625897
SLV.100.100.75	•		4	98626205	98626256		98626296	98626158
		•	4	98625989	98626036		98624704	98625902

SLV, cast iron pumps with stainless steel impeller

Pump type	Sensor		Poles	Voltage				
				3 x 400-415 V DOL	3 x 380-415 V DOL	3 x 220-240 V DOL	3 x 380-415 V Y/D	3 x 220-240 V Y/D
	Yes	No		[0B]	[OD]	[0E]	[1D]	[1E]
SLV.65.65.22	•		2	98626947	98626917	98626887	98626977	
		•	2	98626833	98626803	98626773	98626863	
SLV.65.65.30	•		2	98626937	98626907	98626877	98626967	
		•	2	98626823	98626793	98626763	98626853	
SLV.65.65.40	•		2	98626909	98626939		98626969	98626879
		•	2	98626795	98626825		98626855	98626765
SLV.65.80.22	•		2	98626948	98626918	98626888	98626978	
		•	2	98626834	98626804	98626774	98626864	
SLV.65.80.30	•		2	98626938	98626908	98626878	98626968	
		•	2	98626824	98626794	98626764	98626854	
SLV.65.80.40	•		2	98626910	98626940		98626970	98626880
		•	2	98626796	98626826		98626856	98626766
SLV.80.80.11	•		4	98626957	98626927	98626897		
		•	4	98626843	98626813	98626783		
SLV.80.80.13	•		4	98626959	98626929	98626899		
		•	4	98626845	98626815	98626785		
SLV.80.80.15	•		4	98626961	98626931	98626901		
		•	4	98626847	98626817	98626787		
SLV.80.80.22	•		4	98626963	98626933	98626903	98626987	
		•	4	98626849	98626819	98626789	98626873	
SLV.80.80.40	•		2	98626911	98626941		98626971	98626881
	•		4	98626924	98626954		98626984	98626894
		•	2	98626797	98626827		98626857	98626767
		•	4	98626810	98626840		98626870	98626780
SLV.80.80.60	•		2	98626913	98626943		98626973	98626883
		•	2	98626799	98626829		98626859	98626769
SLV.80.80.75	•		2	98626919	98626949		98626979	98626889
		•	2	98626805	98626835		98626865	98626775
SLV.80.80.92	•		2	98626921	98626951		98626981	98626891
		•	2	98626807	98626837		98626867	98626777
SLV.80.80.110	•		2	98626915	98626945		98626975	98626885
		•	2	98626801	98626831		98626861	98626771
SLV.80.100.11	•		4	98626958	98626928	98626898		
		•	4	98626844	98626814	98626784		
SLV.80.100.13	•		4	98626960	98626930	98626900		
		•	4	98626846	98626816	98626786		
SLV.80.100.15	•		4	98626962	98626932	98626902		
		•	4	98626848	98626818	98626788		
SLV.80.100.22	•		4	98626964	98626934	98626904	98626988	
		•	4	98626850	98626820	98626790	98626874	
SLV.80.100.40	•		2	98626912	98626942		98626972	98626882
	•		4	98626925	98626955		98626985	98626895
		•	2	98626798	98626828		98626858	98626768
		•	4	98626811	98626841		98626871	98626781
SLV.80.100.60	•		2	98626914	98626944		98626974	98626884
		•	2	98626800	98626830		98626860	98626770
SLV.80.100.75	•		2	98626920	98626950		98626980	98626890
		•	2	98626806	98626836		98626866	98626776
SLV.80.100.92	•		2	98626922	98626952		98626982	98626892
		•	2	98626808	98626838		98626868	98626778
SLV.80.100.110	•		2	98626916	98626946		98626976	98626886
		•	2	98626802	98626832		98626862	98626772
SLV.100.100.30	•		4	98626953	98626923	98626893	98626983	
		•	4	98626839	98626809	98626779	98626869	
SLV.100.100.40	•		4	98626926	98626956		98626986	98626896
		•	4	98626812	98626842		98626872	98626782
SLV.100.100.55	•		4	98626989	98626935		98626965	98626905
		•	4	98626875	98626821		98626851	98626791
SLV.100.100.75	•		4	98626936	98626966		98626990	98626906
		•	4	98625989	98626036		98624704	98625902

Explosion-proof pumps

SL1, cast iron, Ex pumps

Pump type	Sensor		Poles	Voltage				
				3 x 400-415 V DOL	3 x 380-415 V DOL	3 x 220-240 V DOL	3 x 380-415 V Y/D	3 x 220-240 V Y/D
	Yes	No		[0B]	[OD]	[0E]	[1D]	[1E]
SL1.50.65.22	•		2	98626553	98626482	98626476	98626487	
		•	2	98626759	98626698	98626692	98626703	
SL1.50.65.30	•		2	98626554	98626483	98626477	98626488	
		•	2	98626760	98626699	98626693	98626704	
SL1.50.65.40	•		2	98626551	98626485		98626489	98626478
		•	2	98626757	98626701		98626705	98626694
SL1.50.80.22	•		2	98626555	98617691	98626479	98626490	
		•	2	98626761	98617679	98626695	98626706	
SL1.50.80.30	•		2	98626556	98626484	98626480	98626491	
		•	2	98626762	98626700	98626696	98626707	
SL1.50.80.40	•		2	98626552	98626486		98626492	98626481
		•	2	98626758	98626702		98626708	98626697
SL1.80.80.15	•		4	98626538	98626399	98626370		
		•	4	98626744	98626615	98626586		
SL1.80.80.22	•		4	98626542	98626403	98626374	98626467	
		•	4	98626748	98626619	98626590	98626683	
SL1.80.80.30	•		4	98626531	98626392	98626356	98626457	
		•	4	98626737	98626608	98626572	98626673	
SL1.80.80.40	•		4	98626515	98626424		98626460	98626359
		•	4	98626721	98626640		98626676	98626575
SL1.80.80.55	•		4	98626546	98626407		98626431	98626378
		•	4	98626752	98626623		98626647	98626594
SL1.80.80.75	•		4	98626522	98626436		98626471	98626383
		•	4	98626728	98626652		98626687	98626599
SL1.80.100.15	•		4	98626539	98626400	98626371		
		•	4	98626745	98626616	98626587		
SL1.80.100.22	•		4	98626543	98626404	98626375	98626468	
		•	4	98626749	98626620	98626591	98626684	
SL1.80.100.30	•		4	98626532	98626393	98626357	98626458	
		•	4	98626738	98626609	98626573	98626674	
SL1.80.100.40	•		4	98626516	98626425		98626461	98626360
		•	4	98626722	98626641		98626677	98626576
SL1.80.100.55	•		4	98626547	98626408		98626432	98626379
		•	4	98626753	98626624		98626648	98626595
SL1.80.100.75	•		4	98626523	98626437		98626472	98626384
		•	4	98626729	98626653		98626688	98626600
SL1.100.100.40	•		4	98626517	98626426		98626462	98626361
		•	4	98626723	98626642		98626678	98626577
SL1.100.100.55	•		4	98626548	98626409		98626433	98626380
		•	4	98626754	98626625		98626649	98626596
SL1.100.100.75	•		4	98626524	98626438		98626473	98626385
		•	4	98626730	98626654		98626689	98626601
SL1.100.150.40	•		4	98626518	98626427		98626463	98626362
		•	4	98626724	98626643		98626679	98626578
SL1.100.150.55	•		4	98626549	98626410		98626434	98626381
		•	4	98626755	98626626		98626650	98626597
SL1.100.150.75	•		4	98626525	98626439		98626474	98626386
		•	4	98626731	98626655		98626690	98626602

SLV, cast iron, Ex pumps

Pump type	Sensor		Poles	Voltage				
				3 x 400-415 V DOL	3 x 380-415 V DOL	3 x 220-240 V DOL	3 x 380-415 V Y/D	3 x 220-240 V Y/D
	Yes	No		[0B]	[OD]	[0E]	[1D]	[1E]
SLV.65.65.22	•		2	98626529	98626390	98626340	98626451	
		•	2	98626735	98626606	98626566	98626667	
SLV.65.65.30	•		2	98626527	98626388	98626320	98626441	
		•	2	98626733	98626604	98626506	98626657	
SLV.65.65.40	•		2	98626493	98626412		98626443	98626332
		•	2	98626709	98626628		98626659	98626508
SLV.65.80.22	•		2	98626530	98626391	98626351	98626452	
		•	2	98626736	98626607	98626567	98626668	
SLV.65.80.30	•		2	98626528	98626389	98626331	98626442	
		•	2	98626734	98626605	98626507	98626658	
SLV.65.80.40	•		2	98626494	98626413		98626444	98626333
		•	2	98626710	98626629		98626660	98626509
SLV.80.80.11	•		4	98626534	98626395	98626366		
		•	4	98626740	98626611	98626582		
SLV.80.80.13	•		4	98626536	98626397	98626368		
		•	4	98626742	98626613	98626584		
SLV.80.80.15	•		4	98626540	98626401	98626372		
		•	4	98626746	98626617	98626588		
SLV.80.80.22	•		4	98626544	98626405	98626376	98626469	
		•	4	98626750	98626621	98626592	98626685	
SLV.80.80.40	•		2	98626495	98626414		98626445	98626334
	•		4	98626519	98626428		98626464	98626363
		•	2	98626711	98626630		98626661	98626510
		•	4	98626725	98626644		98626680	98626579
SLV.80.80.60	•		2	98626497	98626416		98626447	98626336
		•	2	98626713	98626632		98626663	98626562
SLV.80.80.75	•		2	98626511	98626420		98626453	98626352
		•	2	98626717	98626636		98626669	98626568
SLV.80.80.92	•		2	98626513	98626422		98626455	98626354
		•	2	98626719	98626638		98626671	98626570
SLV.80.80.110	•		2	98626499	98626418		98626449	98626338
		•	2	98626715	98626634		98626665	98626564
SLV.80.100.11	•		4	98626535	98626396	98626367		
		•	4	98626741	98626612	98626583		
SLV.80.100.13	•		4	98626537	98626398	98626369		
		•	4	98626743	98626614	98626585		
SLV.80.100.15	•		4	98626541	98626402	98626373		
		•	4	98626747	98626618	98626589		
SLV.80.100.22	•		4	98626545	98626406	98626377	98626470	
		•	4	98626751	98626622	98626593	98626686	
SLV.80.100.40	•		2	98626496	98626415		98626446	98626335
	•		4	98626520	98626429		98626465	98626364
		•	2	98626712	98626631		98626662	98626561
		•	4	98626726	98626645		98626681	98626580
SLV.80.100.60	•		2	98626498	98626417		98626448	98626337
		•	2	98626714	98626633		98626664	98626563
SLV.80.100.75	•		2	98626512	98626421		98626454	98626353
		•	2	98626718	98626637		98626670	98626569
SLV.80.100.92	•		2	98626514	98626423		98626456	98626355
		•	2	98626720	98626639		98626672	98626571
SLV.80.100.110	•		2	98626500	98626419		98626450	98626339
		•	2	98626716	98626635		98626666	98626565
SLV.100.100.30	•		4	98626533	98626394	98626358	98626459	
		•	4	98626739	98626610	98626574	98626675	
SLV.100.100.40	•		4	98626521	98626430		98626466	98626365
		•	4	98626727	98626646		98626682	98626581
SLV.100.100.55	•		4	98626550	98626411		98626435	98626382
		•	4	98626756	98626627		98626651	98626598
SLV.100.100.75	•		4	98626526	98626440		98626475	98626387
		•	4	98626732	98626656		98626691	98626603

SLV, cast iron, with stainless steel impeller, Ex pumps

Pump type	Sensor		Poles	Voltage				
				3 x 400-415 V DOL	3 x 380-415 V DOL	3 x 220-240 V DOL	3 x 380-415 V Y/D	3 x 220-240 V Y/D
	Yes	No		[0B]	[OD]	[0E]	[1D]	[1E]
SLV.65.65.22	•		2	98627207	98627137	98627115	98627176	
		•	2	98627093	98627023	98627001	98627062	
SLV.65.65.30	•		2	98627205	98627135	98627105	98627166	
		•	2	98627091	98627021	98626991	98627052	
SLV.65.65.40	•		2	98627189	98627149		98627168	98627107
		•	2	98627075	98627035		98627054	98626993
SLV.65.80.22	•		2	98627208	98627138	98627116	98627177	
		•	2	98627094	98627024	98627002	98627063	
SLV.65.80.30	•		2	98627206	98627136	98627106	98627167	
		•	2	98627092	98627022	98626992	98627053	
SLV.65.80.40	•		2	98627190	98627150		98627169	98627108
		•	2	98627076	98627036		98627055	98626994
SLV.80.80.11	•		4	98627210	98627140	98627125		
		•	4	98627096	98627026	98627011		
SLV.80.80.13	•		4	98627212	98627142	98627127		
		•	4	98627098	98627028	98627013		
SLV.80.80.15	•		4	98627214	98627144	98627129		
		•	4	98627100	98627030	98627015		
SLV.80.80.22	•		4	98627216	98627146	98627131	98627186	
		•	4	98627102	98627032	98627017	98627072	
SLV.80.80.40	•		2	98627191	98627151		98627170	98627109
	•		4	98627201	98627161		98627183	98627122
		•	2	98627077	98627037		98627056	98626995
		•	4	98627087	98627047		98627069	98627008
SLV.80.80.60	•		2	98627193	98627153		98627172	98627111
		•	2	98627079	98627039		98627058	98626997
SLV.80.80.75	•		2	98627197	98627157		98627178	98627117
		•	2	98627083	98627043		98627064	98627003
SLV.80.80.92	•		2	98627199	98627159		98627180	98627119
		•	2	98627085	98627045		98627066	98627005
SLV.80.80.110	•		2	98627195	98627155		98627174	98627113
		•	2	98627081	98627041		98627060	98626999
SLV.80.100.11	•		4	98627211	98627141	98627126		
		•	4	98627097	98627027	98627012		
SLV.80.100.13	•		4	98627213	98627143	98627128		
		•	4	98627099	98627029	98627014		
SLV.80.100.15	•		4	98627215	98627145	98627130		
		•	4	98627101	98627031	98627016		
SLV.80.100.22	•		4	98627217	98627147	98627132	98627187	
		•	4	98627103	98627033	98627018	98627073	
SLV.80.100.40	•		2	98627192	98627152		98627171	98627110
	•		4	98627202	98627162		98627184	98627123
		•	2	98627078	98627038		98627057	98626996
		•	4	98627088	98627048		98627070	98627009
SLV.80.100.60	•		2	98627194	98627154		98627173	98627112
		•	2	98627080	98627040		98627059	98626998
SLV.80.100.75	•		2	98627198	98627158		98627179	98627118
		•	2	98627084	98627044		98627065	98627004
SLV.80.100.92	•		2	98627200	98627160		98627181	98627120
		•	2	98627086	98627046		98627067	98627006
SLV.80.100.110	•		2	98627196	98627156		98627175	98627114
		•	2	98627082	98627042		98627061	98627000
SLV.100.100.30	•		4	98627209	98627139	98627121	98627182	
		•	4	98627095	98627025	98627007	98627068	
SLV.100.100.40	•		4	98627203	98627163		98627185	98627124
		•	4	98627089	98627049		98627071	98627010
SLV.100.100.55	•		4	98627218	98627148		98627164	98627133
		•	4	98627104	98627034		98627050	98627019
SLV.100.100.75	•		4	98627204	98627165		98627188	98627134
		•	4	98627090	98627051		98627074	98627020

6. Variants

List of variants

Motor

Various cable lengths	**Note:** When using a different cable length than the standard length, calculate a new cable cross section.	15 m
		20 m
		25 m
		30 m
		40 m
EMC power cables	Screened power cables for variable-speed drives	15 m
		20 m
		25 m
		30 m
		40 m

Tests

Note: All requests regarding tests must be specified when ordering the pump.

Test at specified duty on standard impeller curve		
Trimmed impeller for specified duty test*		
Additional test of entire QH curve (incl. report)	5-10 duty points from pump performance curve	
Different test standard	Efficiency guaranteed by Grundfos	ISO 9906:2012 grade 1B tolerances
		ISO 9906:2012 grade 2B tolerances
Customer-requested duty point	Test according to customer-specified duty point on standard pump curve. Contact Grundfos.	ISO 9906:2012 grades 1 and 2 tolerances
Vibration test (including report)	According to Grundfos factory quality standard	
String test	Contact Grundfos	
Witness test	Contact Grundfos	

Certificates

ATEX-approved pump report	Special Grundfos report. Contact Grundfos	
Certificate of compliance with order	According to EN10204 2.1	According to ISO 9906:2012 grades 1, 2 and 3B
Pump certificate	According to EN10204 2.2	According to ISO 9906:2012 grades 1, 2 and 3B
Inspection certificate	According to EN10204 3.1	According to ISO 9906:2012 grades 1, 2 and 3B
Material specification report	According to EN10204 3.1B	
Material report with certificate	According to EN10204 3.2	Material supplier information
Inspection certificate, Lloyd's Register	According to EN10204 3.2	
Inspection certificate, DNV (Det Norske Veritas)	According to EN10204 3.2	
Inspection certificate, Germanisher Lloyd	According to EN10204 3.2	
Inspection certificate, American Bureau of Shipping	According to EN10204 3.2	
Inspection certificate, Bureau Veritas	According to EN10204 3.2	
Registro Italiano Navale Agenture	According to EN10204 3.2	
Other third-party test certificates	Contact Grundfos	

Miscellaneous

Solution	Customer benefits	
FKM sealing (optional)	• Resistant to acids • Resistant to mineral oils and vegetable oils • Resistant to most solvents (toluene, petrol, trichloroethylene etc.)	Contact Grundfos
Cable protection hose	• Resistant to acids • Resistant to most oils • Resistant to most solvents etc.	Contact Grundfos
Heavy-duty wear ring kit	• Wear and seal ring kit for the handling of abrasive media • Increased wear resistance of impeller in abrasive applications • Increased reliability and life of pump	Contact Grundfos
Stainless steel SuperVortex impeller according to EN 1.4517	Increased wear resistance	Contact Grundfos
Pump housing with cutted inlet (only for SLV pumps)	To avoid dogging	Contact Grundfos
Ceramic coating of impeller and pump housing	• Reduced wear rate of cast iron parts • Increased corrosion resistance • Beneficial in case of low number of operating hours	Contact Grundfos
Extra epoxy coating 300 µm		Contact Grundfos
Top coating (black RAL9005, red RAL3000 and other colours)		Contact Grundfos
Special packaging		Contact Grundfos
Special nameplate		Contact Grundfos
Other variants		Contact Grundfos

* SLV impellers can be trimmed on request.

7. Construction

Drawings - SL1 pumps

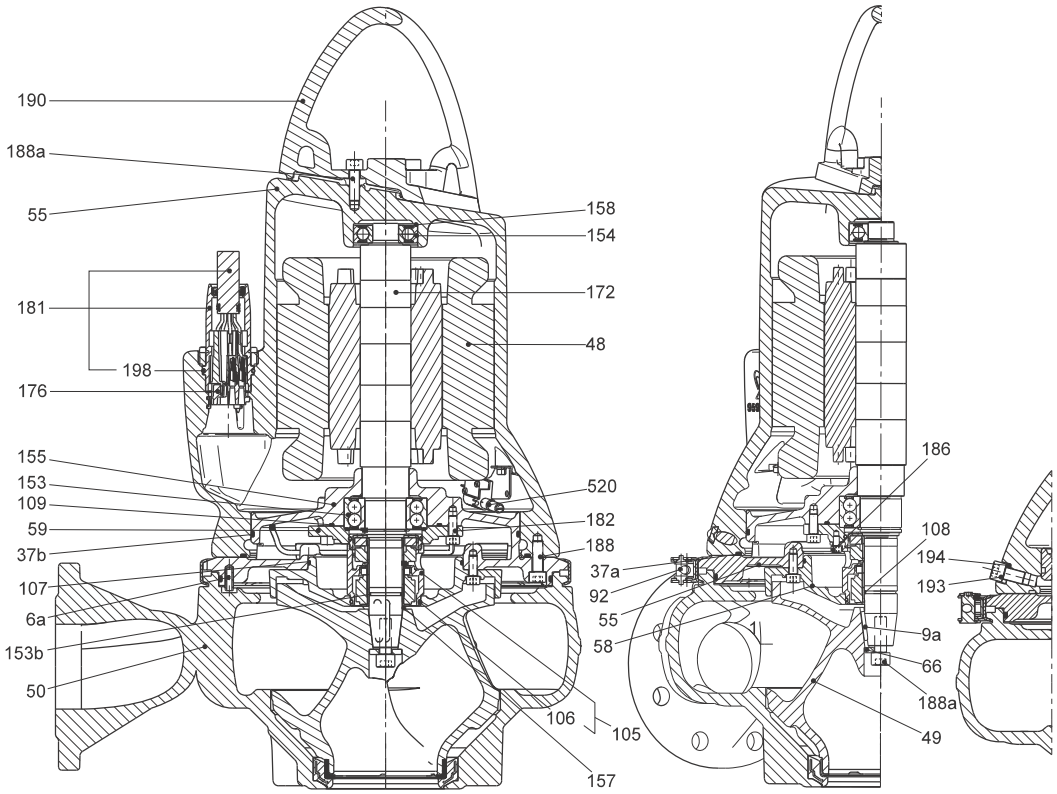


Fig. 6 Sectional drawing of SL1 pump, standard version

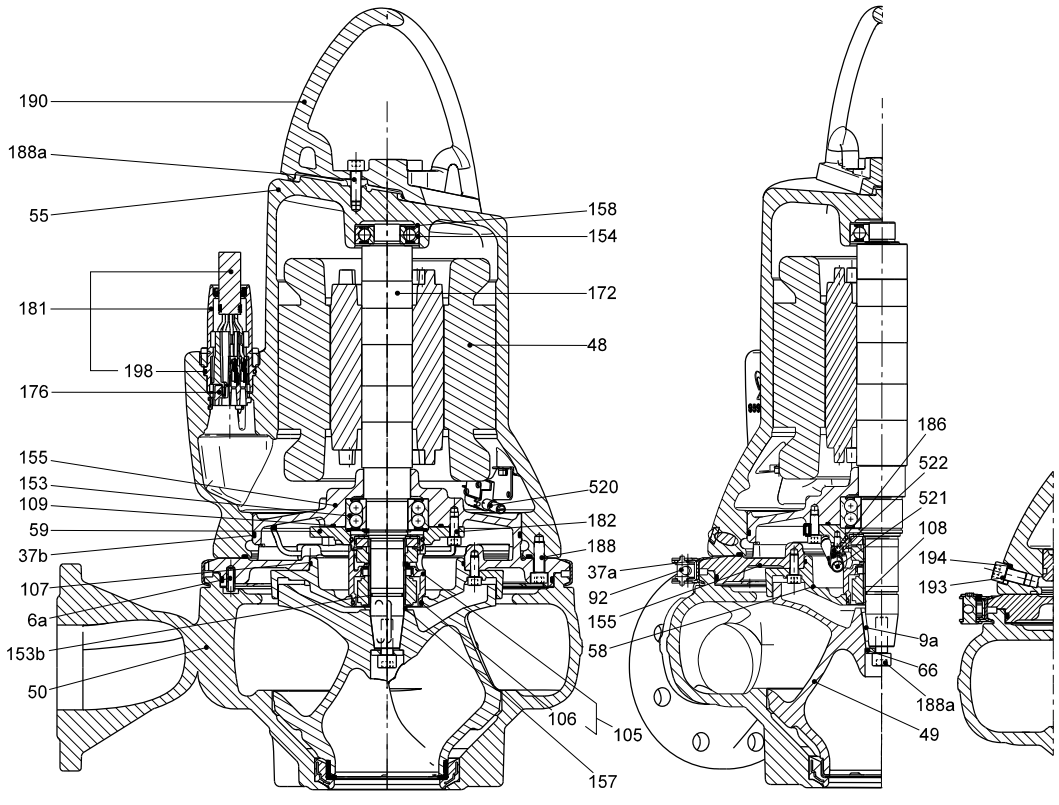


Fig. 7 Sectional drawing of SL1 pump, sensor version

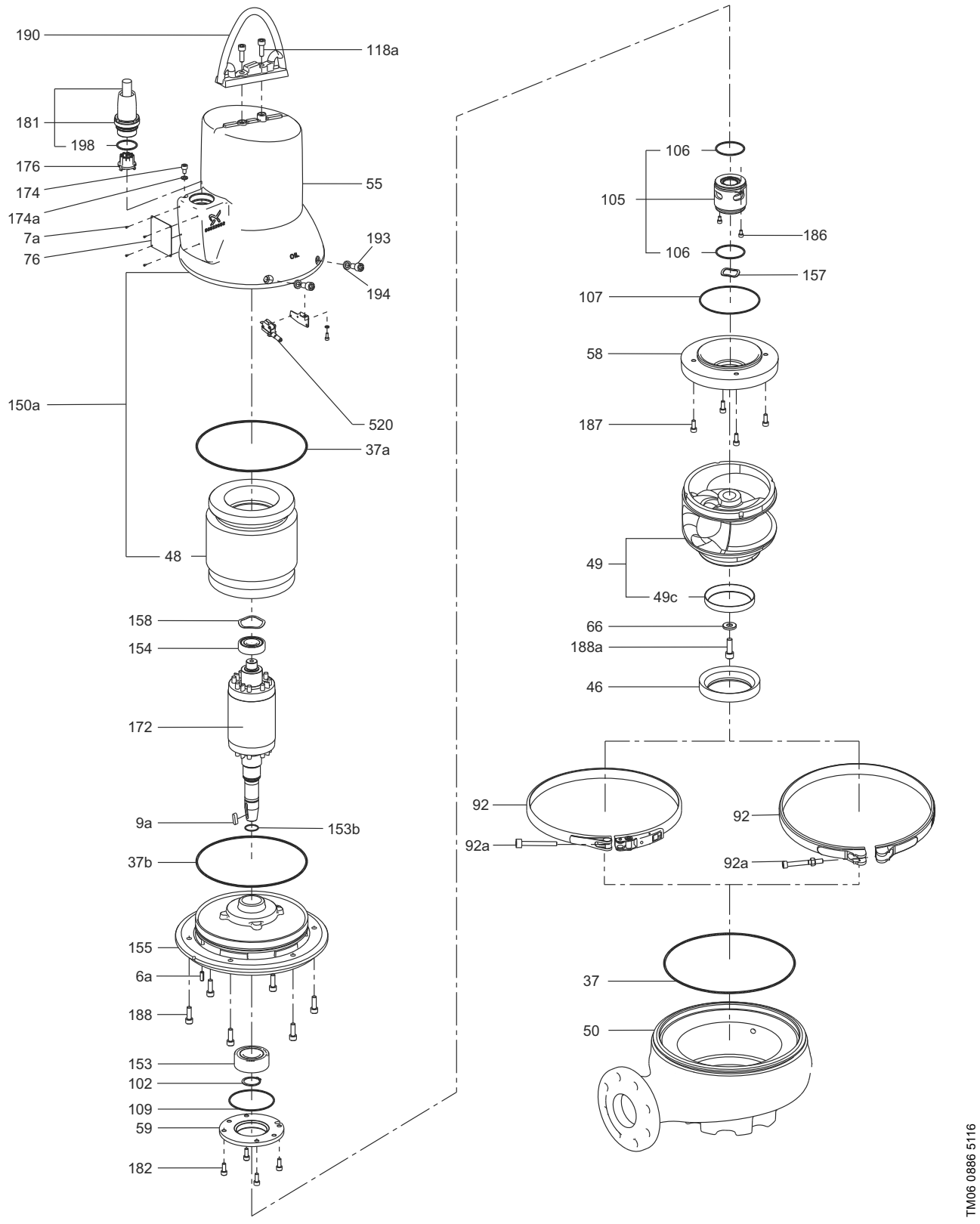


Fig. 8 Exploded view of SL1 pump, standard version

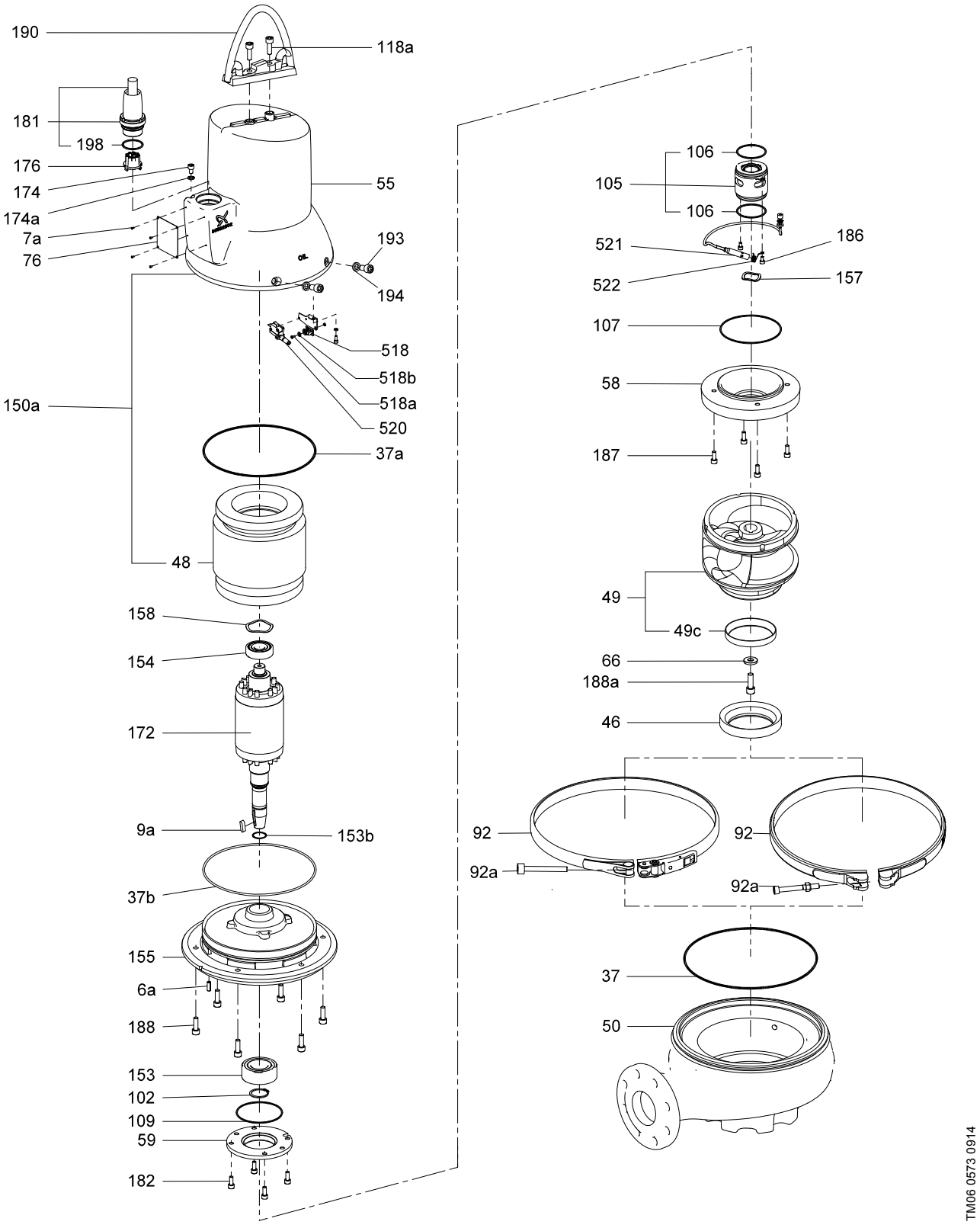


Fig. 9 Exploded view of SL1 pump, sensor version

Drawings - SLV pumps

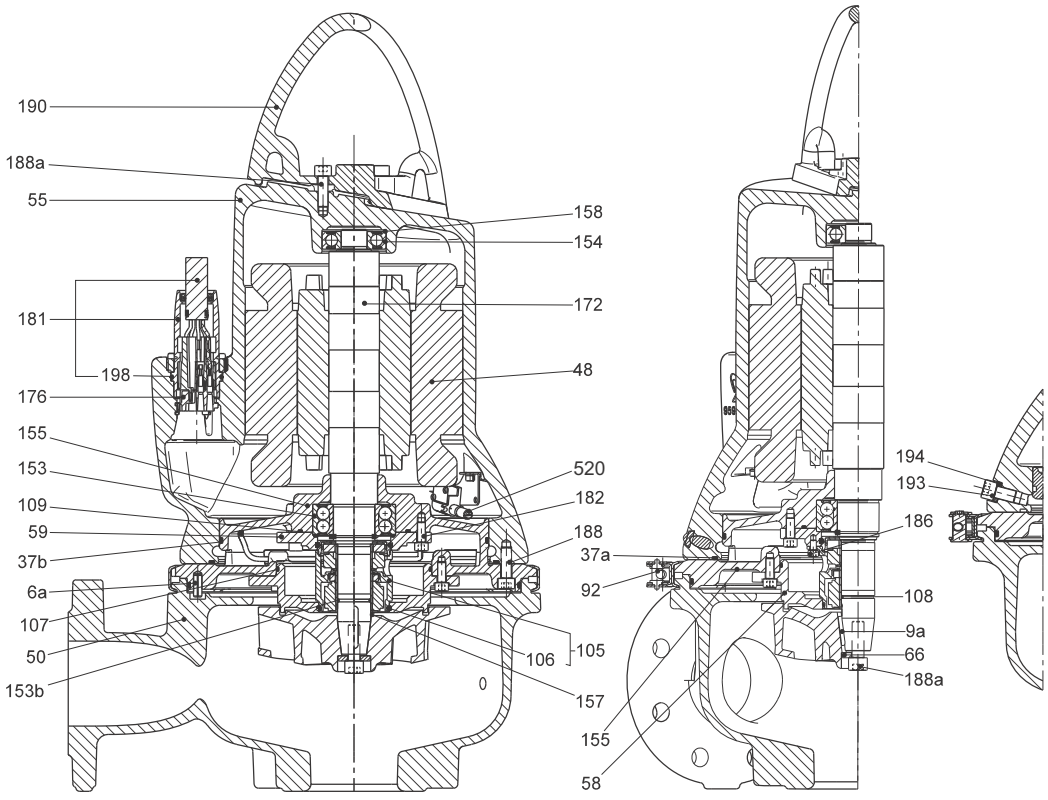


Fig. 10 Sectional view of SLV pump, standard version

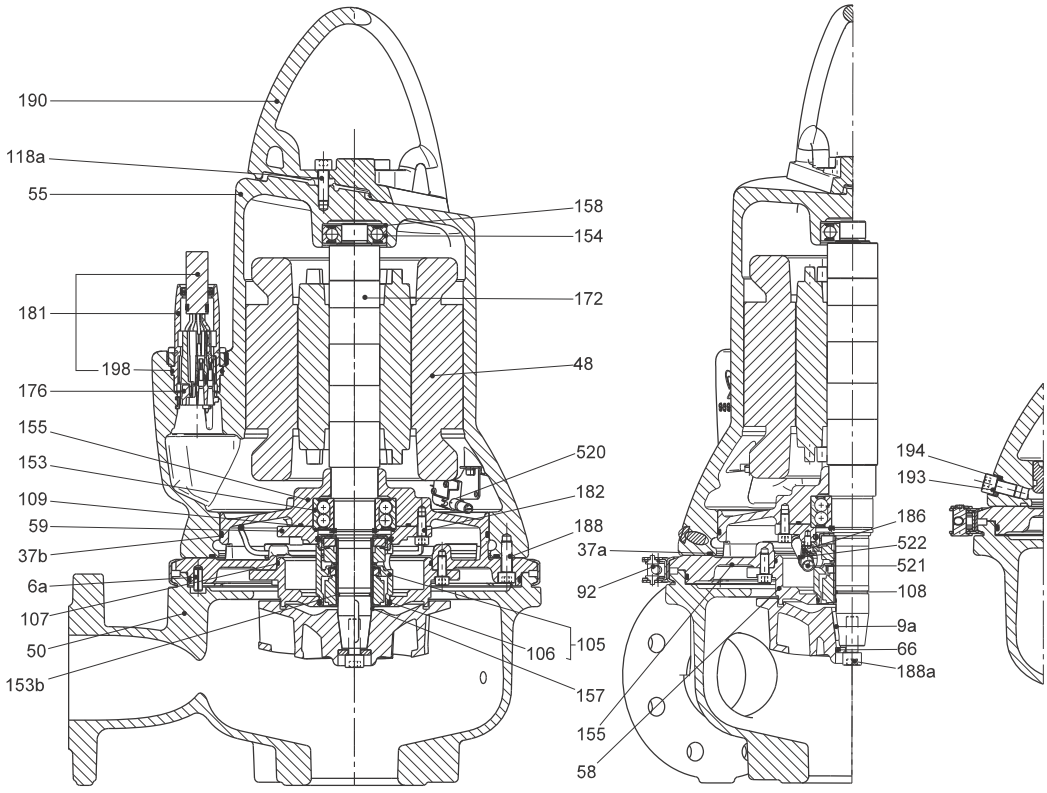


Fig. 11 Sectional drawing of SLV pump, sensor version

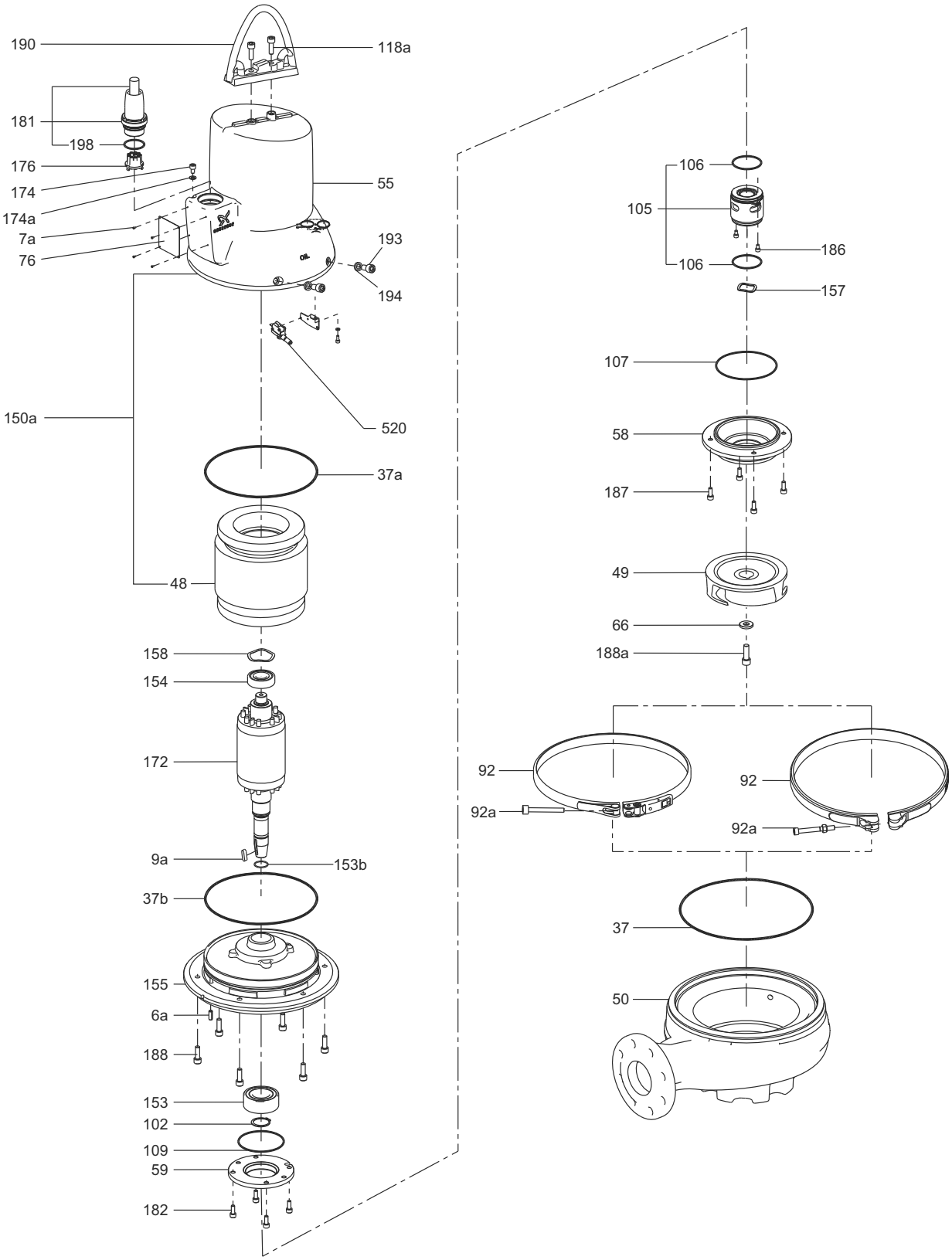


Fig. 12 Exploded view of SLV pump, standard version

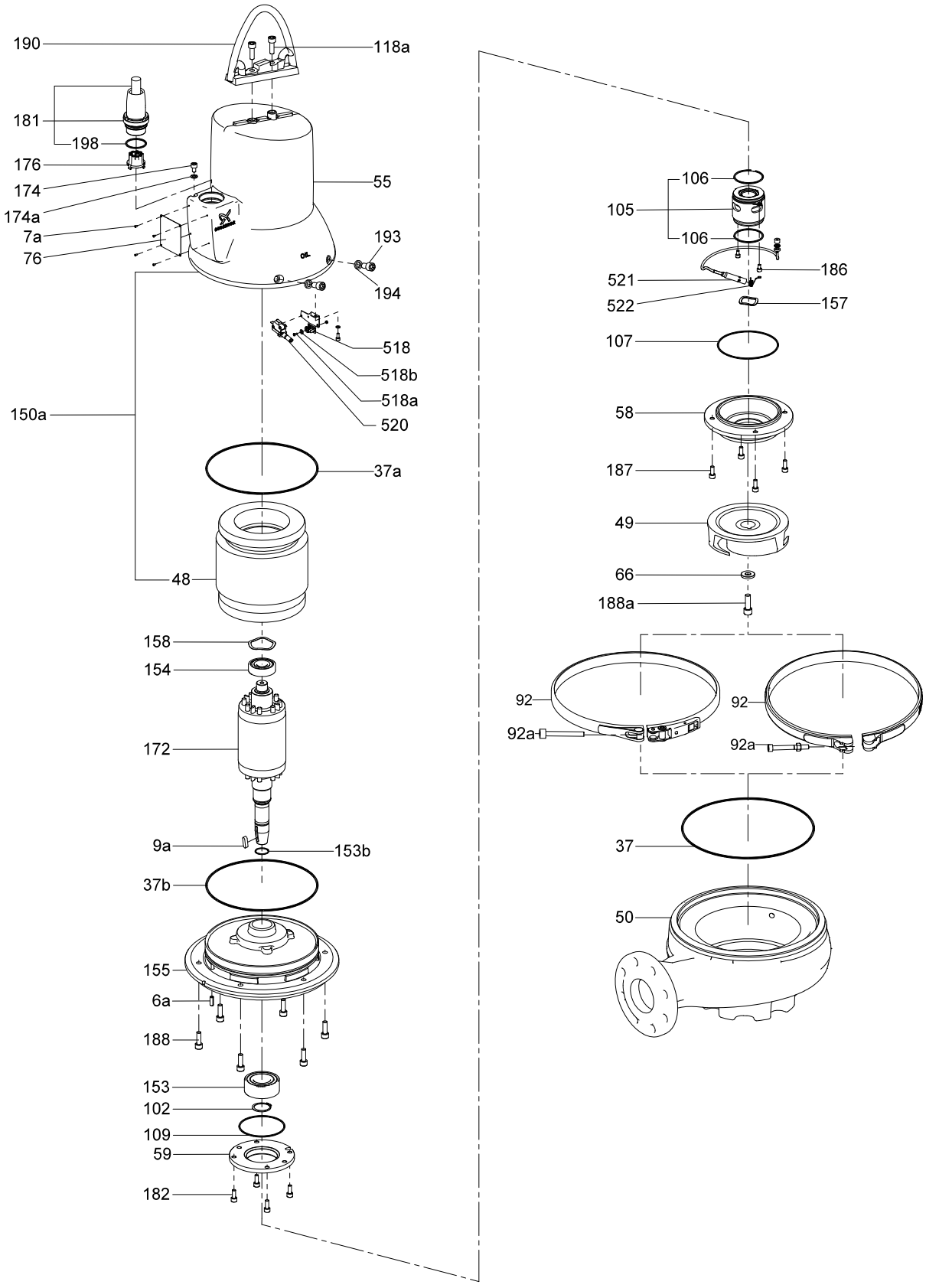


Fig. 13 Exploded view of SLV pump, sensor version

Material specification

Pos.	Component	Material	DIN W.-No./ EN standard
6a	Tubular pin, D8 x 22 A2	Stainless steel	1.4301
7a	Blank rivet, 2.4 x 6 A2	Stainless steel	1.4301
9a	Key	Stainless steel	1.4301
37	O-ring	NBR rubber	
37a	O-ring	NBR rubber	
37b	O-ring	NBR rubber	
46	Seal ring, inlet	Stainless steel	1.4301
48	Stator package		
49	SuperVortex impeller	Cast iron, EN-GJL-250/Stainless steel	5.1301/1.4408
	S tube® impeller	Cast iron, EN-GJL-250/Stainless steel	5.1301/1.4408
49c	Wear ring, impeller	Stainless steel	1.4301
50	Pump housing	Cast iron, EN-GJL-250	5.1301
55	Stator housing	Cast iron, EN-GJL-250	5.1301
58	Cover for oil chamber	Cast iron, EN-GJL-250	5.1301
59	Bearing cover	Cast iron, EN-GJL-250	5.1301
66	Washer	Stainless steel	1.4436
76	Nameplate	Stainless steel	1.4401
92	Clamp	Stainless steel	1.4401
92a	Screw	Stainless steel	1.4436
102	Circlip		
105	Shaft seal complete (rotating part of MG1/25-G60 Q1Q1PGG, stationary part of MG1/25-G60 Q1Q1PGG; rotating part of BT-AR/25 BXPFF, stationary part of BT-AR/25 BXPFF)	Stainless steel, SiC/SiC Carbon/ceramic	
106	O-ring for shaft seal	NBR rubber	
107	O-ring (cover for oil chamber)	NBR rubber	
109	O-ring for bearing cover, D-end	NBR rubber	
118a	Screw	Stainless steel	1.4436
150a	Stator house complete with stator		
153	Bearing, D-end	Stainless steel	
153b	O-ring	NBR rubber	
154	Bearing, N-end	Stainless steel	
155	Oil chamber	Cast iron, EN-GJL-250	5.1301
157	Corrugated spring (bearing, D-end)	Stainless steel	
158	Corrugated spring (bearing, N-end)	Carbon steel	Inconel X750 1.1248
172	Shaft with rotor	Regular iron/stainless steel	1.0570 /1.4401
174	Earth screw, external	Stainless steel	
174a	Washer for external earth screw	Stainless steel	
176	Connector set (internal part)		
181	Cable with outer plug part	7G2.5 + 3 x 1	
182	Screw	Stainless steel	1.4436
186	Screw	Stainless steel	1.4436
187	Screw	Stainless steel	1.4436
188	Screw	Stainless steel	1.4436
188a	Screw	Stainless steel	1.4436
190	Lifting bracket	Stainless steel	1.4308
193	Plug	Stainless steel	1.4436
194	Gasket		
198	O-ring	NBR rubber	
518	Transient barrier (only sensor versions)		
518a	Screw		
518b	Washer		
520	Moisture switch		
521	WIO sensor (only sensor versions)		
522	Bracket for WIO sensor (only sensor versions)	Stainless steel	1.4310

Material declaration:
Grey cast iron is manufactured according to EN 1561:2012.
Cast stainless steel is manufactured according to EN 10283:2010.

Conversion to other standards such as AISI or ASTM is normative, and products are not manufactured according to these.

8. Product description

Features

Ball bearings

The ball bearings are greased for life:

- Main bearings: Double-row angular contact ball bearing.
- Support bearings: Single-row deep-groove ball bearing.

Shaft seal

TM05 0015 0511

Fig. 14 Double mechanical cartridge shaft seal

The shaft seal consists of two mechanical seals and separates the motor from the pumped liquid.

The shaft seal is a cartridge seal that enables easy service. The combination of the primary and secondary seals in a cartridge results in a shorter assembly length compared to conventional shaft seals. Furthermore, this design minimises the risk of incorrect fitting.

The primary seal is SiC/SiC and the secondary is carbon/ceramic.

Motor

The motor is a watertight, totally encapsulated motor:

- insulation class: H (180 °C)
- temperature rise class: A (60 °C)
- enclosure class: IP68.

For motor protection and sensors, see *Sensors*, page 26.

Surface treatment

Grundfos SL1 and SLV pumps are given the following surface treatment:

- Cataphoresis treatment of all cast iron parts.

Powder painting: NCS 9000N (black), gloss code 30, thickness 100 µm.

Power cables

Standard cable

Cable type [mm^2]	Outer cable diameter [mm]	Bending radius	
		Fixed [cm]	Free [cm]
Lyniflex 4 G 1.5 + 3 x 1	15.5 ± 0.5	60	90
Lyniflex 4 G 2.5 + 3 x 1	17.0 ± 0.5	66	99
Lyniflex 7 G 2.5 + 3 x 1	18.5 ± 0.5	74	111

EMC cable

Cable type [mm^2]	Outer cable diameter [mm]	Bending radius	
		Fixed [cm]	Free [cm]
3G3GC3G - F3 x 1AiC + 4 G 2.5	17.5 ± 0.5	85	170

The standard cable length is 10 m. Other cable lengths are available on request. See *List of variants*, page 16.

The cable dimension depends on the motor size.

Cable entry

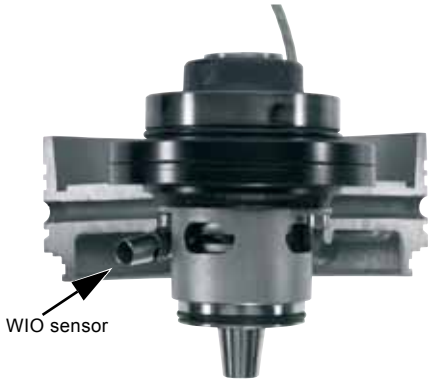
TM05 0016 0511

Fig. 15 Moisture-proof cable plug

The stainless steel plug is fastened with a union nut. The nut and O-rings provide sealing against liquid penetration.

The plug is filled with a polyamide material that is cast into the plug around the conductors of the cable to prevent moisture from penetrating into the motor via the cable core.

Sensors



TM05 0017 0511

Fig. 16 Analog water-in-oil sensor

As standard, the pump is equipped with thermal switches in the stator windings.

Customised analog sensor options

1. Pt1000 sensor in motor windings for stator temperature measurements.
2. The WIO sensor fitted in the oil chamber of the pump monitors if water enters the pump from the liquid side.
   The sensor measures the water content (0 to 20 %) in the oil and converts the value into an analog current signal which is sent to the IO 113 sensor module. It also sends a signal if the water content is outside the normal range (warning), or if there is air in the oil chamber (alarm). The sensor is fitted in a stainless steel tube for mechanical protection. See fig. 16.
3. The moisture switch fitted in the motor chamber monitors whether water enters the motor. If moisture is detected in the motor chamber, the moisture switch will trip and send a signal to the IO 113 sensor module.

IO 113 sensor module

TM05 4166 2112

Fig. 17 Grundfos IO 113 sensor module

The IO 113 module is a protection module for Grundfos wastewater pumps.

IO 113 has inputs for digital and analog pump sensors and can stop the pump if a sensor indicates a pump fault.

IO 113 can be connected to Grundfos Dedicated Controls system which provides advanced monitoring functions:

- motor temperature
- moisture in motor
- water in oil
- insulation resistance.

Operating conditions

The pumps are designed for intermittent operation (S3). When completely submerged, the pump can also operate continuously (S1).

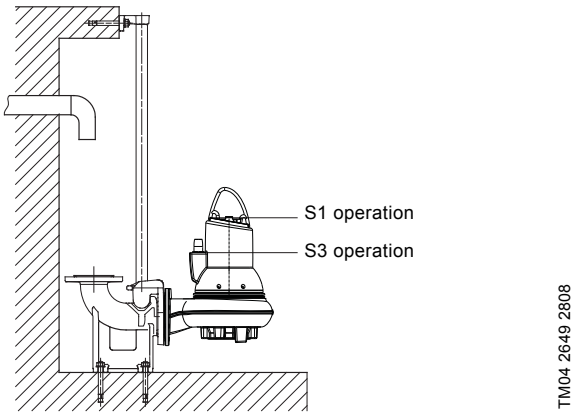


Fig. 18 Operation levels

S3, intermittent operation

S3 operating mode is a series of duty cycles each with a constant load for a period followed by a rest period. Thermal equilibrium is not reached during the cycle. Intermittent operation S3 with maximum 20 starts per hour when the pump is submerged to the bottom of the cable plug. The pump must run for maximum 4 minutes and stop for minimum 6 minutes. See fig. 19.

Note: Explosion-proof pumps must always be fully submerged.

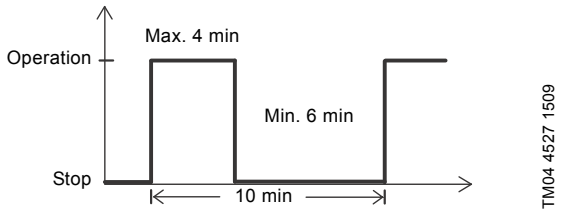


Fig. 19 S3 operation

S1, continuous operation

In this operating mode, the pump can operate continuously without having to be stopped for cooling. Being completely submerged, the pump is sufficiently cooled by the surrounding liquid. See fig. 20.

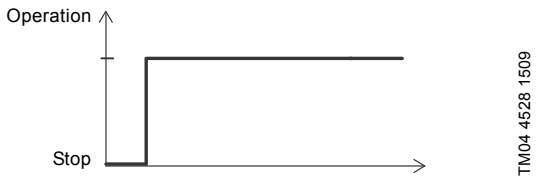


Fig. 20 S1 operation

Pumped liquids

Pump type	Material variant	Material	pH value
SL1, SLV	Standard	Cast iron impeller and pump housing	6.5 - 14[1]
SLV	Q	Stainless steel impeller and cast iron pump housing	6-14[1]

[1] For fluctuating pH values, the range is pH 4 to 14.

Liquid temperature: 0-40 °C.

When pumping liquids with a density and/or a kinematic viscosity higher than that of water, use motors with correspondingly higher outputs.

For short periods (maximum 3 minutes), a temperature of up to 60 °C is permissible (non-Ex versions only).

Sound pressure

The sound pressure level of the pump is lower than the limiting values stated in the EC Council directive 2006/42/EC relating to machinery (the EC Machinery Directive).

Motor range

Output power [kW]	Number of poles
1.1	4
1.3	4
1.5	4
2.2	2/4
3	2/4
4	2/4
6	2
7.5	2/4
9.2	2
11	2

Approvals

The SL1 and SLV pumps have been tested by KEMA.

The explosion-proof versions hold two examination certificates:

- ATEX (EU): KEMA08ATEX0125X
- IECEX: IECEX KEM08.0039X

Both certificates have been issued by KEMA according to the ATEX directive.

Approval standards

The standard variants are approved by LGA (notified body under the Construction Products Directive) according to EN 12050-1 or EN 12050-2 as specified on the pump nameplate.

Ex approval

The SL1 and SLV pumps have the following explosion protection classification:

Direct-drive pump, without sensor	CE 0344 Ex II 2 G Ex c d IIB T4 Gb
Direct-drive pump, with sensor	CE 0344 Ex II 2 G Ex c d mb IIB T4 Gb
Pump driven by frequency converter, without sensor	CE 0344 Ex II 2 G Ex c d IIB T3 Gb
Pump driven by frequency converter, with sensor	CE 0344 Ex II 2 G Ex c d mb IIB T3 Gb

Directive/standard	Code		Description
ATEX	CE 0344	=	CE marking of conformity according to the ATEX directive 2014/34/EU. 0344 is the number of the notified body which has certified the quality system for ATEX.
	Ex	=	Explosion protection mark.
	II	=	Equipment group according to the ATEX directive, defining the requirements applicable to the equipment in this group.
	2	=	Equipment category according to the ATEX directive, defining the requirements applicable to the equipment in this category.
	G	=	Explosive atmosphere caused by gases or vapours.
Harmonised European standard EN 60079-0	Ex	=	The equipment conforms to the harmonised European standard.
	c	=	Constructional safety according to EN 13463-5:2011 and EN 13463-1:2009.
	d	=	Flame-proof enclosure according to EN 60079-1:2007.
	mb	=	Encapsulation according to EN 60079-18:2009.
	IIB	=	Classification of gases according to EN 60079-0:2012. Gas group B includes gas group A.
	T4/T3	=	Maximum surface temperature is 135 °C / 200 °C according to EN 60079-0:2012.
	Gb	=	Equipment protection level.

Ex approval for IECEx pumps

Explosion-proof variants for Australia are approved as Ex d IIB T3/T4 Gb (without WIO sensor) or Ex d mb T3/T4 Gb (with WIO sensor).

Standard	Code		Description
IEC 60079-0 and IEC 60079-1	Ex	=	Area classification according to AS 2430.1.
	d	=	Flame-proof enclosure according to IEC 60079-1:2007.
	mb	=	Encapsulation according to IEC 60079-18.
	IIB	=	Classification of gases according to IEC 60079-0:2011. Gas group B includes gas group A.
	T4/T3	=	Maximum surface temperature is 135 °C/200 °C according to IEC 60079-0:2011.
	Gb	=	Equipment protection level.

Controllers

The pumps must be connected to a control box with a motor protection relay with IEC trip class 10 or 15.

Note: Pumps for hazardous locations must be connected to a control box with a motor protection relay with IEC trip class 10.

Frequency converter, CUE/VFD

All SL1 and SLV pump types are designed for speed-controlled operation to keep the energy consumption at a minimum.

To avoid the risk of sedimentation in the pipes, we recommend that you operate the speed-controlled pump within a speed range of 30 to 100 % and at a flow rate above 1 m/s.

For more information, see the installation and operating instructions for the relevant frequency converter on www.grundfos.com (Grundfos Product Center).

Additional features

The CUE/VFD (optional), which is either a Grundfos variable-frequency converter or a general variable-frequency converter, also offers better pump protection and a more steady flow through the pipe system.

In addition, Grundfos CUE/VFD offers these features and benefits:

- anti-blocking
- automatic energy optimisation
- specific-energy test
- output frequency
- monitoring of:
  - voltage*
  - current*
  - phase sequence*
  - power*
  - energy*
  - torque*
- reverse start
- run flushing
- stop flushing
- PID control.

* These functions are only available with a Grundfos CUE.

Level controllers

Grundfos offers a wide range of pump controllers to keep a watchful eye on liquid levels in the wastewater collecting tank, ensuring correct operation and protection of the pumps.

Controller ranges:

- Dedicated Controls, DC control cabinets
- LC and LCD level controllers.

Dedicated Controls

TM06 0918 1214

Fig. 21 Dedicated Controls control cabinet

Grundfos Dedicated Controls is a control system that can control and monitor one to six Grundfos wastewater pumps and a mixer or a flush valve.

Dedicated Controls is used in installations requiring advanced control and data communication.

The main components of the Dedicated Controls system are as follows:

- CU 362 control unit
- IO 351B module (general I/O module).

Dedicated Controls is available either as separate components or as control cabinets.

The control system can be operated by the following:

- float switches
- a level sensor
- a level sensor and safety float switches.

The control cabinet is available for the following pump sizes and starting methods:

- pumps up to and including 9 kW, direct-on-line starting
- pumps up to and including 30 kW, star-delta starting
- pumps up to and including 30 kW, soft starter.

The separate control unit and modules can be built for practically any size of system.

The DC control cabinets can be fitted with various units:

- The CU 362 control unit, which is the "brain" of the Dedicated Controls system, is fitted in the cabinet front. CU 362 can be fitted with one of the Grundfos CIM communication modules mentioned below, depending on the monitoring needs or the SCADA system:
  - CIM 202 is a communication module used for the Modbus RTU fieldbus protocol.
  - CIM 252 is a communication module used for GSM/GPRS communication. CIM 252 establishes communication between CU 362 and a SCADA system, thereby allowing the application to be monitored and controlled remotely. This module also offers SMS messaging, for example status and alarm messages.
  - CIM 272 is a communication module for the Grundfos Remote Management system (GRM). CIM 272 establishes communication between CU 362 and GRM, thereby allowing the application to be monitored and controlled remotely.
- The IO 351B module is a general I/O module. IO 351B communicates with CU 362 via GENIbus.
- The MP 204 motor protector (optional) provides many electrical status values, for example voltage, current, power, insulation resistance and energy. MP 204 offers better protection of the pumps than a conventional motor protection device.
- CUE/VFD (optional), which is either a Grundfos variable-frequency converter or a general variable-frequency converter, (also) offers better pump protection and a more steady flow through the pit pipes, so the pumps are treated well and the energy consumption is kept at a minimum.

For further information, see the data booklet or installation and operating instructions for Dedicated Controls on www.grundfos.com (Grundfos Product Center).

LC and LCD

The Grundfos LC and LCD ranges of level controllers comprise three series with a total of six variants:

- LC and LCD 107 level controllers operated by air bells
- LC and LCD 108 level controllers operated by float switches
- LC and LCD 110 level controllers operated by electrodes.

All controllers are ideally suited for applications requiring up to 11 kW motors for direct-on-line starting. The LC and LCD can also be supplied with an integrated star-delta starter for applications requiring larger motors up to and including 30 kW.

Features and benefits

- Control of one pump (LC) or two pumps (LCD).
- Automatic alternating operation of two pumps (LCD).
- Automatic test run (prevents shaft seals from becoming jammed in the event of long periods of inactivity).
- Water hammer protection.
- Starting delay after power supply failure.
- Automatic alarm resetting, if required.
- Automatic restarting, if required.
- Alarm output as NO and NC.

TM04 2360 2408

Fig. 22 LCD 110 for two-pump installations

When an SMS module (optional) is fitted in an LC or LCD controller, it acts as a time recorder for the pumps, and when programmed (using an ordinary mobile telephone with text messaging facility), it can send text messages containing "high-level alarm" and "general alarm" information about operation and the number of times the pump has started. The SMS module is also available with battery and can thus send text messages that will inform you of power failure and when power has been restored.

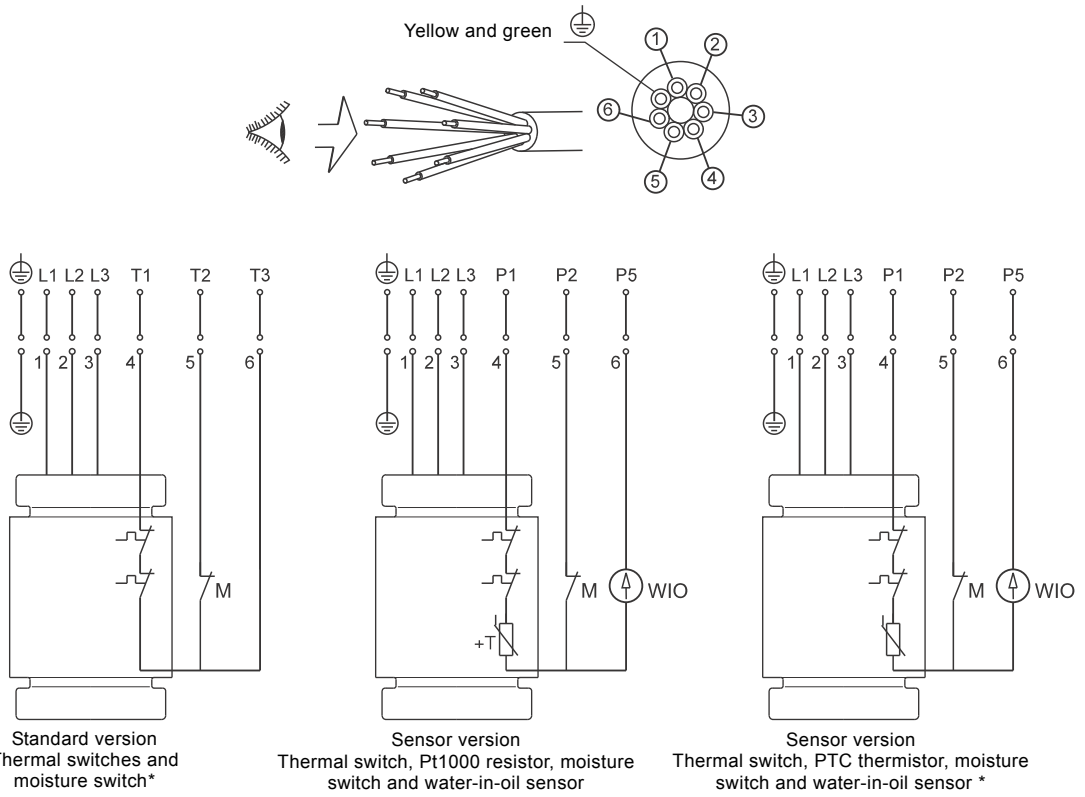
For further information, see the data booklet or installation and operating instructions for the LC and LCD controllers on www.grundfos.com (Grundfos Product Center).

Name		DC	LC	LCD
Application				
	One pump	•	•	•
	Two pumps	•		•
	Mixer	•		
	Battery backup	•		
Level sensor				
	Float switch	•	•	•
	Electrodes		•	•
	Air bell		•	•
	Pressure sensor	•		
	Ultrasonic sensor	•		
	Analog level sensor with safety float switches	•		
Starting method				
	Direct-on-line starting (DOL)	•	•	•
	Star-delta starting	•	•	•
	Soft starter	•		
Basic functions				
	Start and stop of pump(s)	•	•	•
	Pump alternation	•		•
	High-level alarm	•	•	•
	Dry-running-level alarm	•	•	•
	Flow measurement (calculated or via flow sensor)	•		
	Pump statistics	•		
	Conflicting-levels alarm	•		
Advanced functions				
	Start and stop delays (prevent water hammering)	•	•	•
	Motor temperature sensor	•	•	•
	Test run/anti-seizing	•	•	•
	Daily emptying (emptying the pit once a day)	•		
	Water-in-oil sensor input	•		
Communication				
	SMS messaging	• [1]	• [2]	• [2]
	SCADA communication (GSM/GPRS)	• [1]		
User interface				
	Level indication	•	•	•
	Graphical display	•		
	PC Tool WW Controls	•		

1 This only applies if a CIM 250 GSM/GPRS module is fitted in the CU 362.

2 This only applies if an SMS module is fitted.

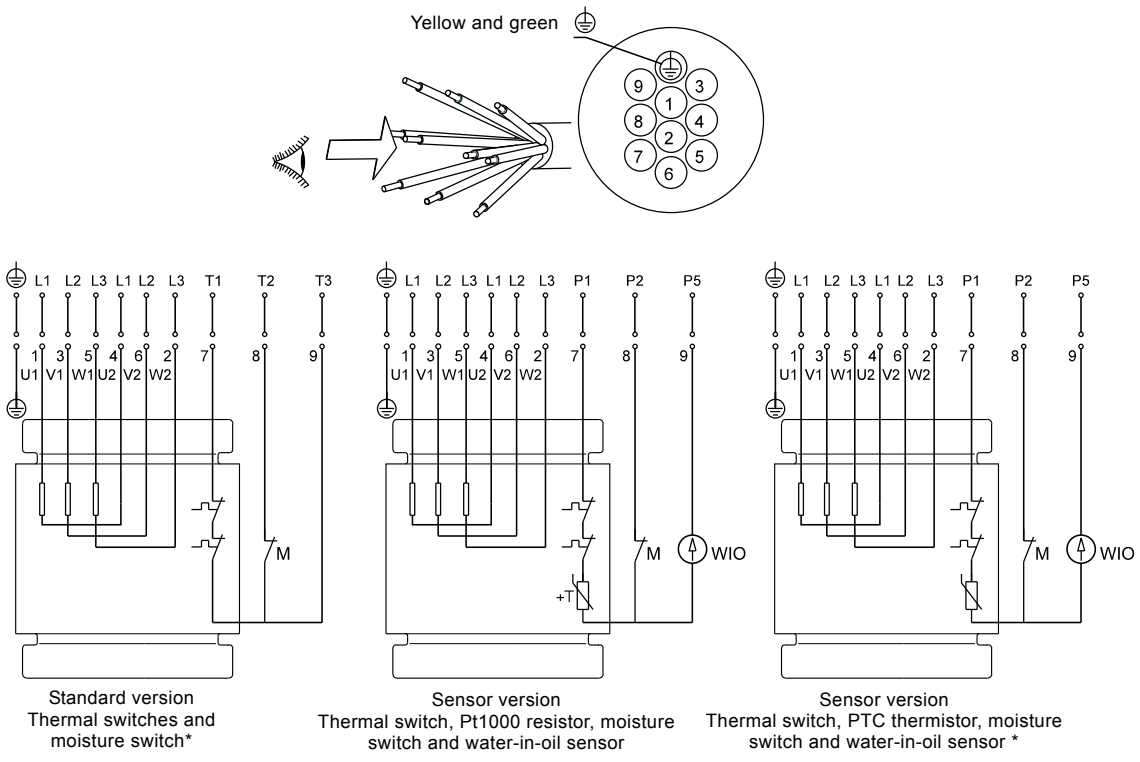
Wiring diagrams



TM04 6884 1317

* Pumps from 4 kW and up sold in Australia and New Zealand are fitted with a PTC thermistor.

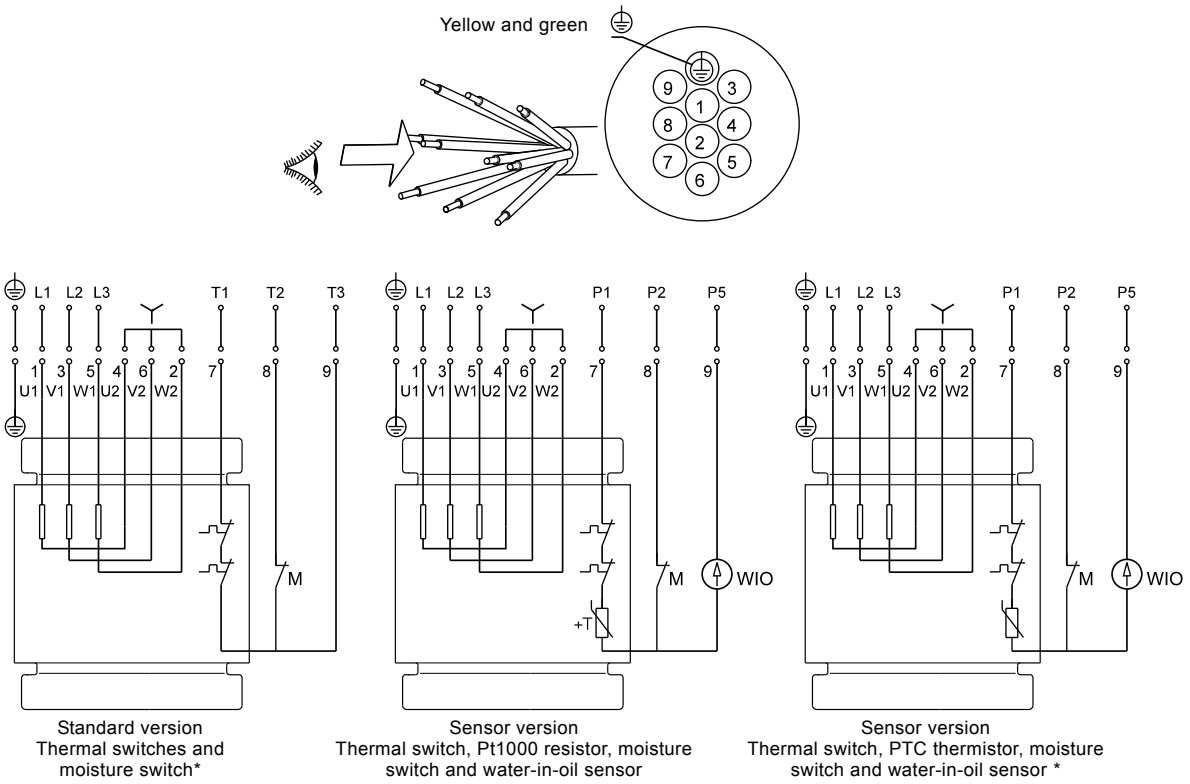
Fig. 23 Wiring diagram, 7-core cable, DOL



TM04 6885 1317

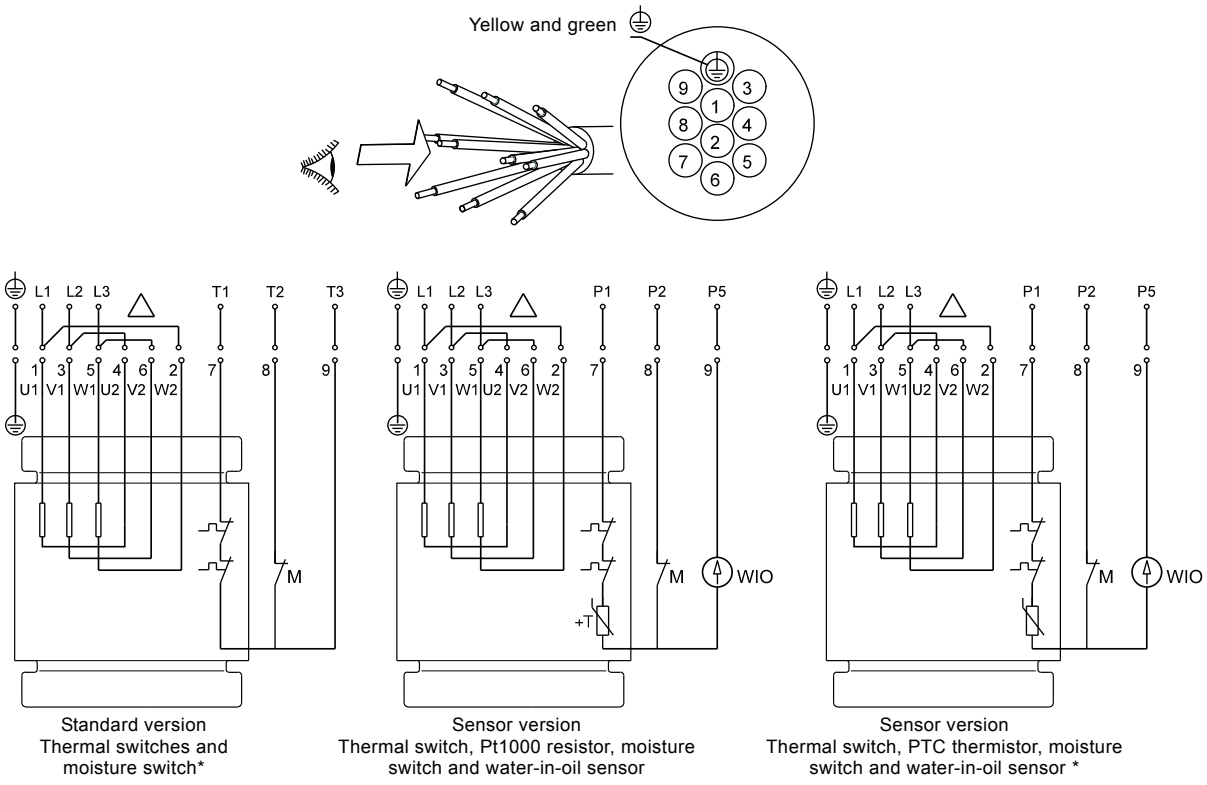
* Pumps from 4 kW and up sold in Australia and New Zealand are fitted with a PTC thermistor.

Fig. 24 Wiring diagram, 10-core cable, star/delta (Y/D)



* Pumps from 4 kW and up sold in Australia and New Zealand are fitted with a PTC thermistor.

Fig. 25 Wiring diagram, 10-core cable, star-connected (Y)

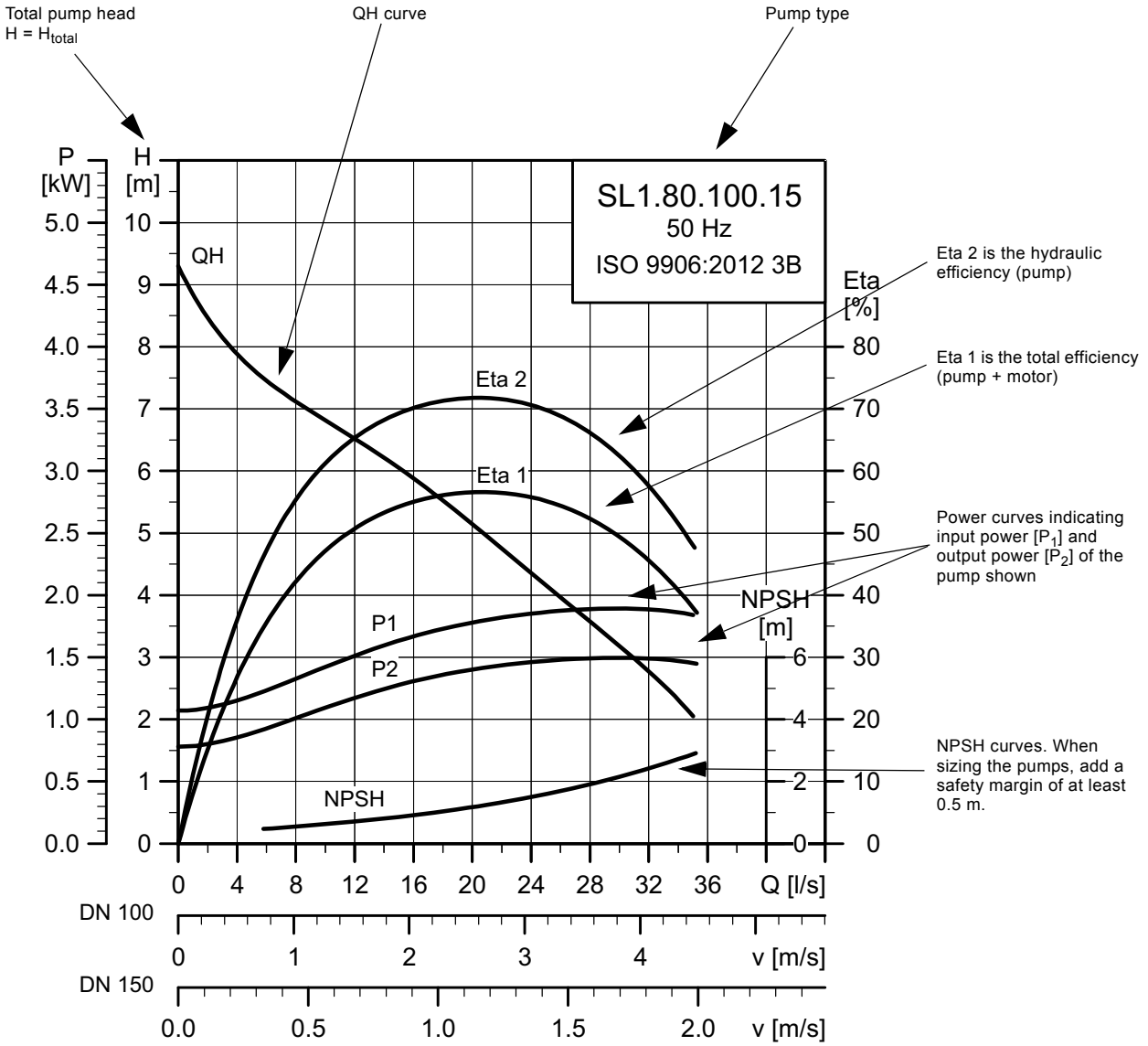


* Pumps from 4 kW and up sold in Australia and New Zealand are fitted with a PTC thermistor.

Fig. 26 Wiring diagram, 10-core cable, delta-connected (D)

9. Curve charts

How to read the curve charts



Note: The pumps are tested according to ISO 9906:2012 grade 3B tolerance. Testing equipment and measuring instruments are designed and calibrated according to the standards mentioned. The pump is approved according to tolerances for entire curves, specified in grade 3B.

Curve conditions

The guidelines below apply to the curves shown in the performance charts on pages 36 to 89.

- Tolerances are according to ISO 9906:2012, grade 3B.
- The curves show pump performance with different impeller diameters at the rated speed.
- The curves apply to the pumping of airless water at a temperature of +20 °C and a kinematic viscosity of 1 mm^2/s (1 cSt).
- The Eta curves show the efficiency of the pump for the different impeller diameters.
- The NPSH curves show average values measured under the same conditions as the performance curves.
  When sizing the pump, add a safety margin of at least 0.5 m.
- In the case of other densities than 1000 kg/m^3, the outlet pressure is proportional to the density.
- When pumping liquids with a density higher than 1000 kg/m^3, use motors with correspondingly higher outputs.

Calculation of total head

The total pump head consists of the height difference between the measuring points + the differential head + the dynamic head.

$$H_{total} = H_{geo} + H_{stat} + H_{dyn}$$

H_{geo}: Height difference between measuring points.
H_{stat}: Differential head between the inlet and the outlet side of the pump.
H_{dyn}: Calculated values based on the velocity of the pumped liquid on the inlet and the outlet side of the pump.

Performance tests

Pumps are tested according to ISO 9906:2012 grade 3B.

Testing equipment and measuring instruments are designed and calibrated in accordance with mentioned standards.

The pump is approved according to tolerances for the entire curve, specified in grade 3B.

For customised duty point or other grades with 5-point test certificate, please contact Grundfos in order to agree on terms before ordering.

If the customer requires either more points on the curve to be checked or certain minimum performances or certificates, individual measurements must be made, and you can order a certificate.

Certificates

Certificates have to be confirmed for every order and are available on request as follows:

- certificate of compliance with the order (EN 10204-2.1)
- pump test sheet.

Witness test

It is possible for the customer to witness the testing procedure according to ISO 9906:2012, grade 3B.

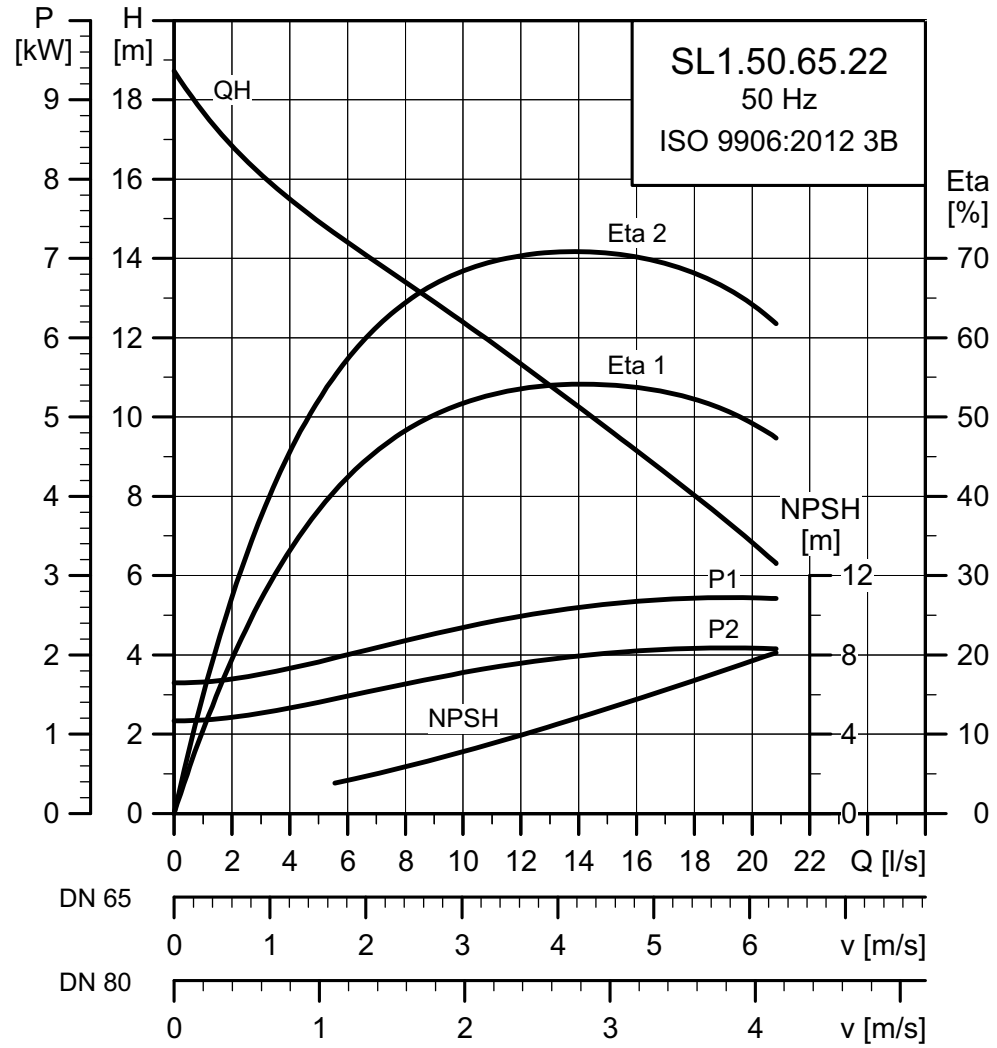
The witness test is not a certificate and will not result in a written statement from Grundfos. The witness test only guarantees that everything is carried out as prescribed in the testing procedure.

If the customer wants to carry out a witness test of the pump performance, such request must be stated on the order.

10. Performance curves and technical data

SL1.50.65

SL1.50.65.22.(A).(EX).2.--.C



TM04 3473 1314

Electrical data

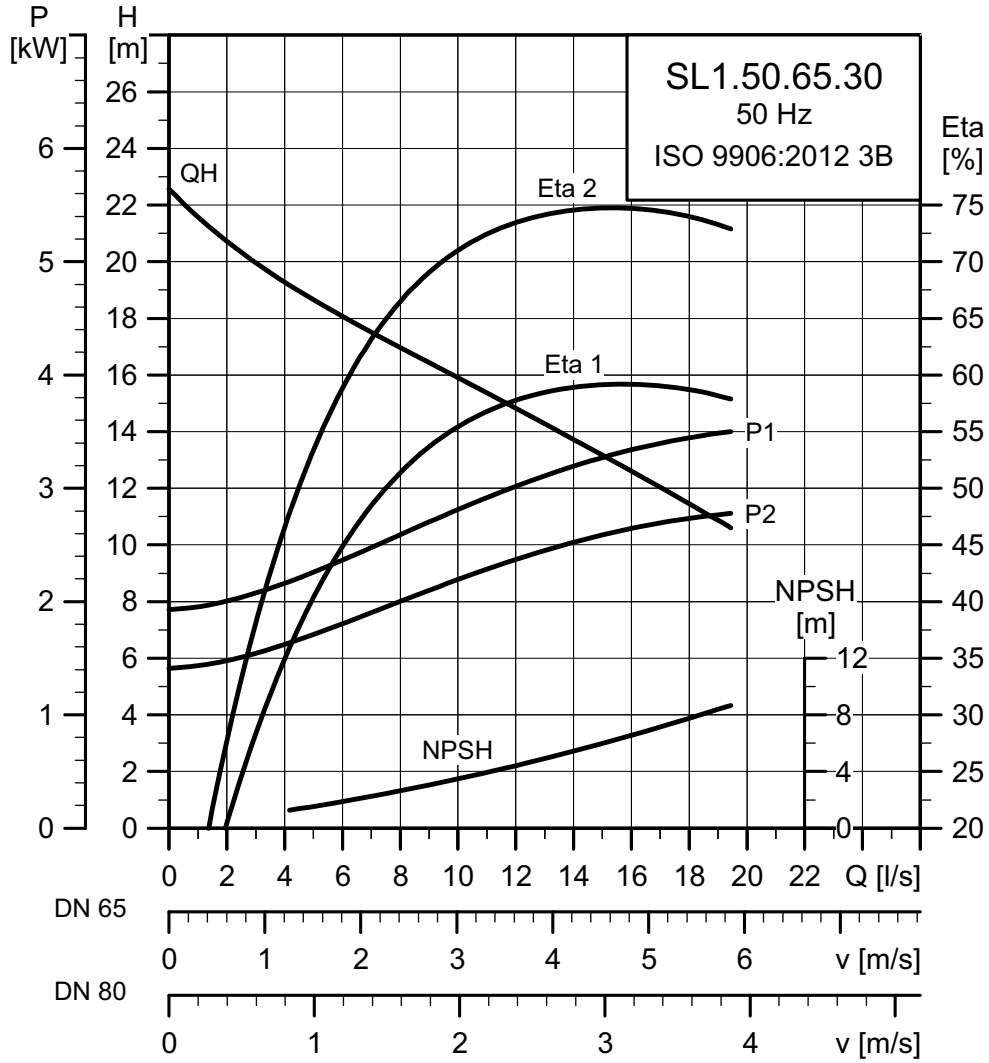
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	2.9	2.2	2	2900	DOL	8.8 - 8.4	61	83.9	85.6	85.1	0.74	0.83	0.88	0.0092	26
50B	3 x 400-415 V Y	2.9	2.2	2	2900	DOL	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0092	26
50D	3 x 380-415 V Y	2.9	2.2	2	2900	DOL	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0092	26
51D	3 x 380-415 V D	2.9	2.2	2	2900	Y/D	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0092	26

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	50	10	20	68	H	A	40	4-14

SL1.50.65.30.(A).(EX).2.--.C



TM04 3474 1314

Electrical data

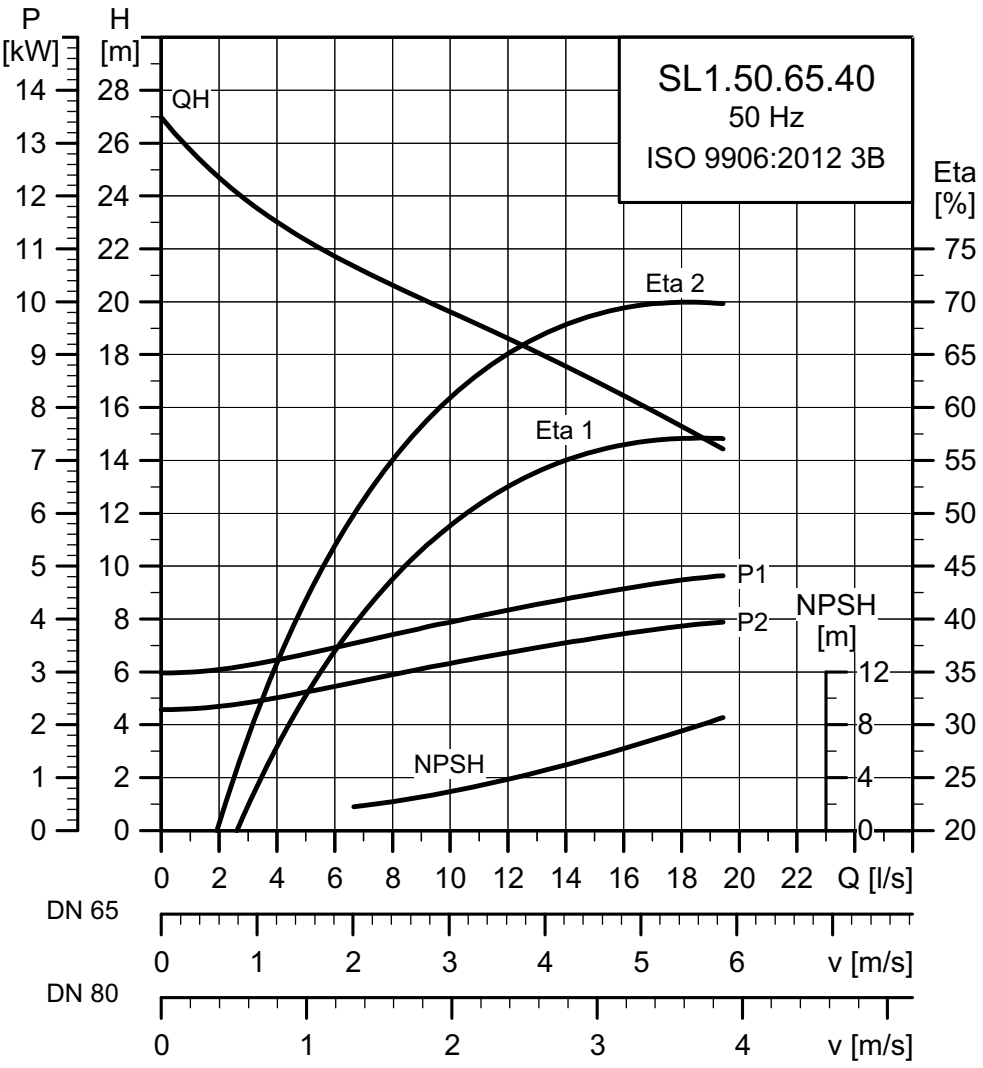
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50B	3 x 400-415 V Y	3.8	3.0	2	2909	DOL	12.0 - 11.6	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0118	65
50D	3 x 380-415 V Y	3.8	3.0	2	2909	DOL	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0118	65
50E	3 x 220-240 V D	3.8	3.0	2	2909	DOL	6.9 - 6.7	78	84.0	85.6	85.6	0.67	0.79	0.85	0.0118	65
51D	3 x 380-415 V D	3.8	3.0	2	2909	Y/D	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0118	65

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	50	10	20	68	H	A	40	4-14

SL1.50.65.40.(A).(EX).2.--.C



TM04 3475 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%]			Cos φ			Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
									1/2	3/4	1/1	1/2	3/4	1/1		
51E	3 x 220-240 V D	4.9	4.0	2	2930	Y/D	14.5 - 13.7	149	83.2	85.3	86.2	0.77	0.83	0.88	0.0165	68
50B	3 x 400-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0165	68
50D	3 x 380-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0165	68
51D	3 x 380-415 V D	4.9	4.0	2	2930	Y/D	8.4 - 7.9	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0165	68

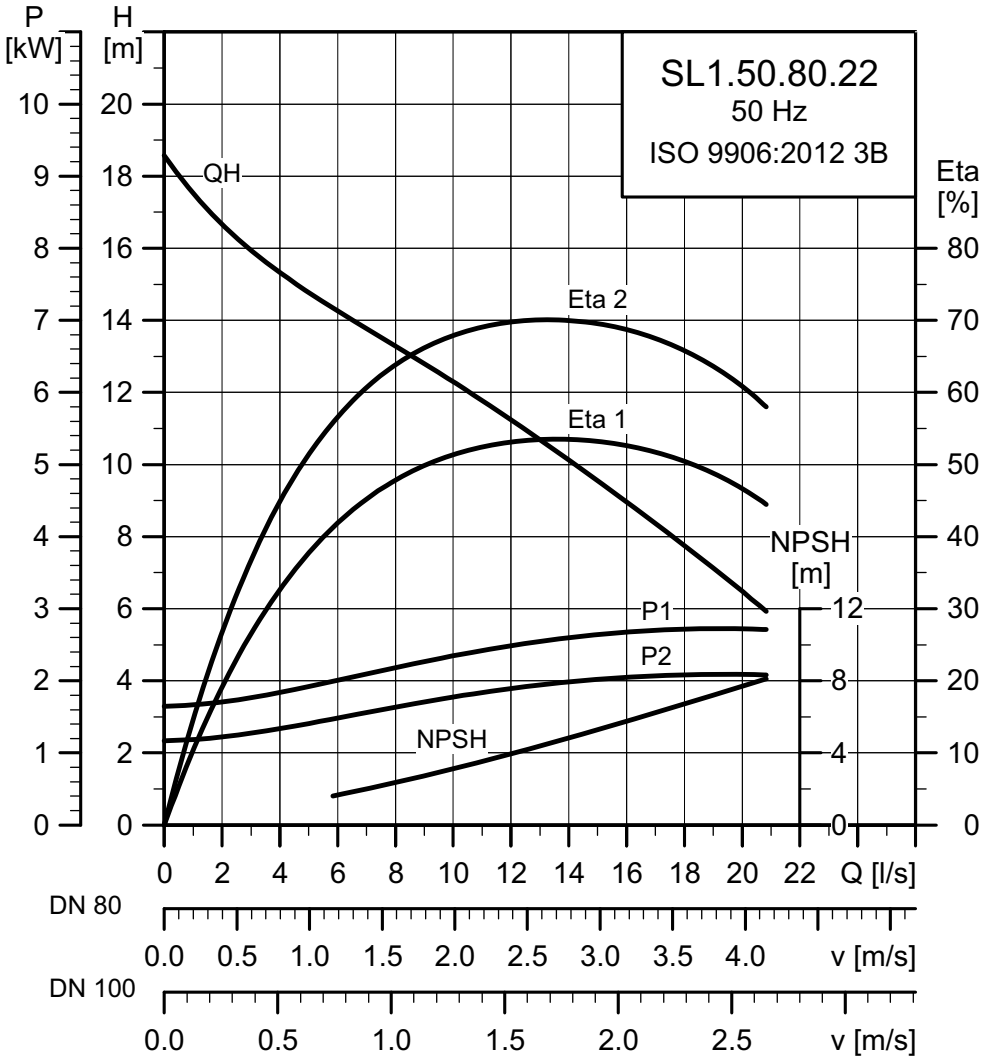
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	50	10	20	68	H	A	40	4-14

SL1.50.80

SL1.50.80.22.(A).(EX).2.--.C



TM04 3476 1314

Electrical data

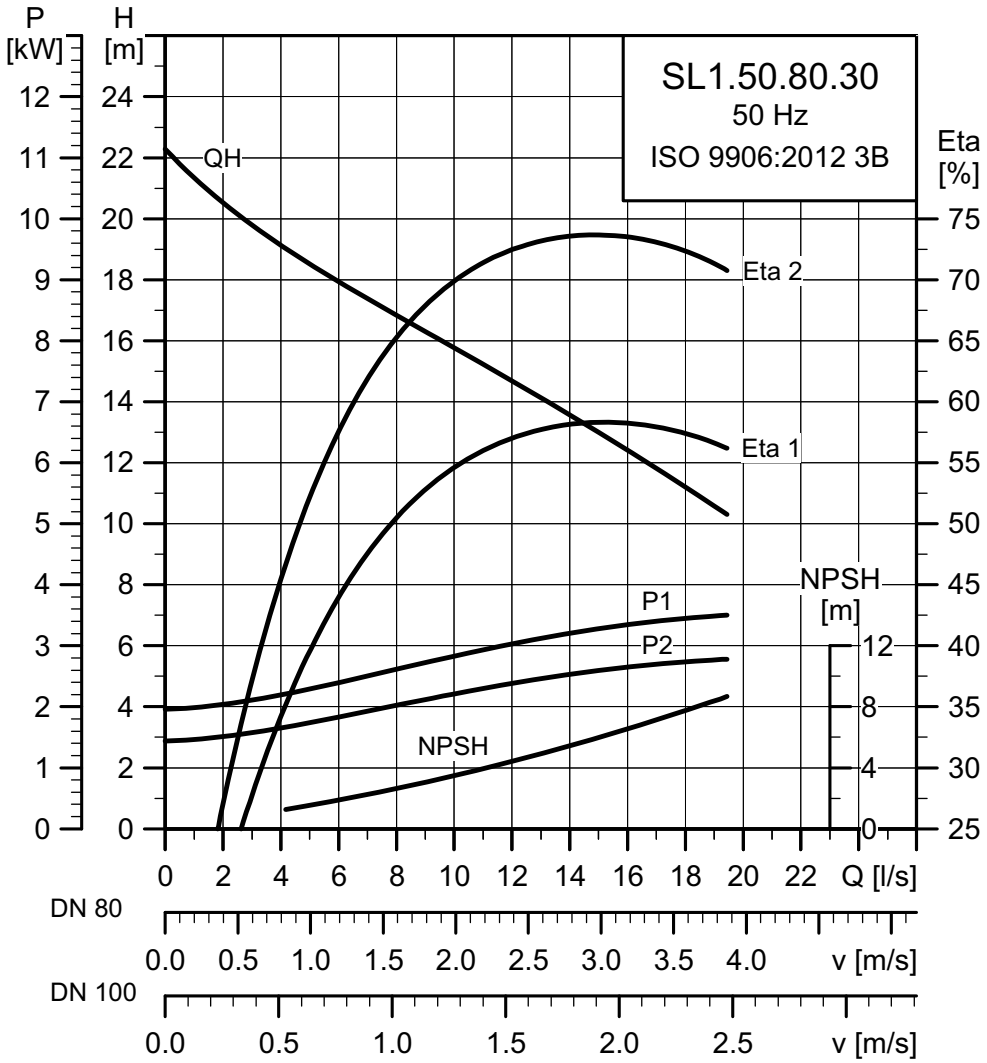
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	2.9	2.2	2	2900	DOL	8.8 - 8.4	61	83.9	85.6	85.1	0.74	0.83	0.88	0.0092	26
50B	3 x 400-415 V Y	2.9	2.2	2	2900	DOL	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0092	26
50D	3 x 380-415 V Y	2.9	2.2	2	2900	DOL	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0092	26
51D	3 x 380-415 V D	2.9	2.2	2	2900	Y/D	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0092	26

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	50	10	20	68	H	A	40	4-14

SL1.50.80.30.(A).(EX).2.--.C



TM04 3516 1314

Electrical data

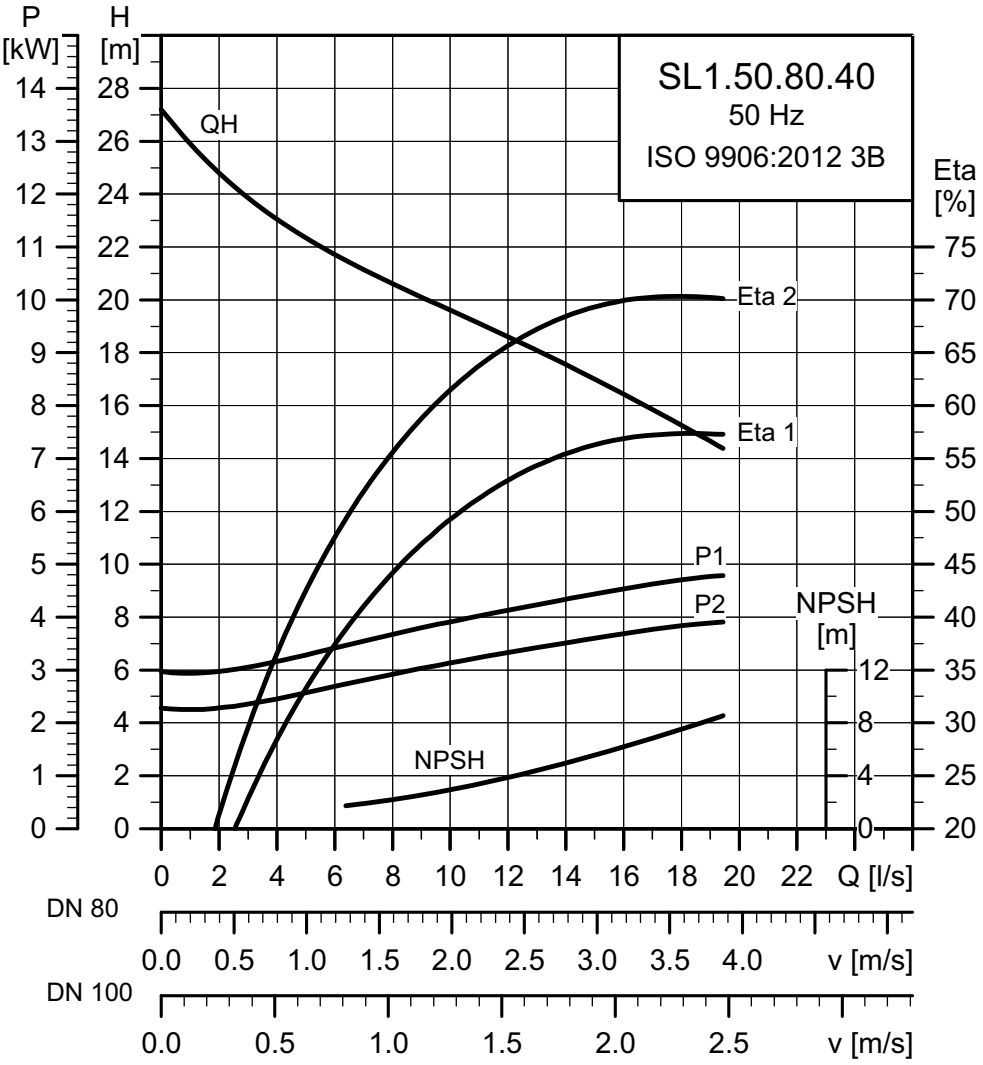
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	3.8	3.0	2	2909	DOL	12.0 - 11.6	78	84.0	85.6	85.6	0.67	0.79	0.85	0.0118	65
50B	3 x 400-415 V Y	3.8	3.0	2	2909	DOL	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0118	65
50D	3 x 380-415 V Y	3.8	3.0	2	2909	DOL	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0118	65
51D	3 x 380-415 V D	3.8	3.0	2	2909	Y/D	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0118	65

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	50	10	20	68	H	A	40	4-14

SL1.50.80.40.(A).(EX).2.--.C



TM04 3517 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.9	4.0	2	2930	Y/D	14.5 - 13.7	149	83.2	85.3	86.2	0.77	0.83	0.88	0.0165	68
50B	3 x 400-415 V D	4.9	4.0	2	2930	DOL	9.8 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0165	68
50D	3 x 380-415 V D	4.9	4.0	2	2930	DOL	9.8 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0165	68
51D	3 x 380-415 V D	4.9	4.0	2	2930	Y/D	8.4 - 7.9	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0165	68

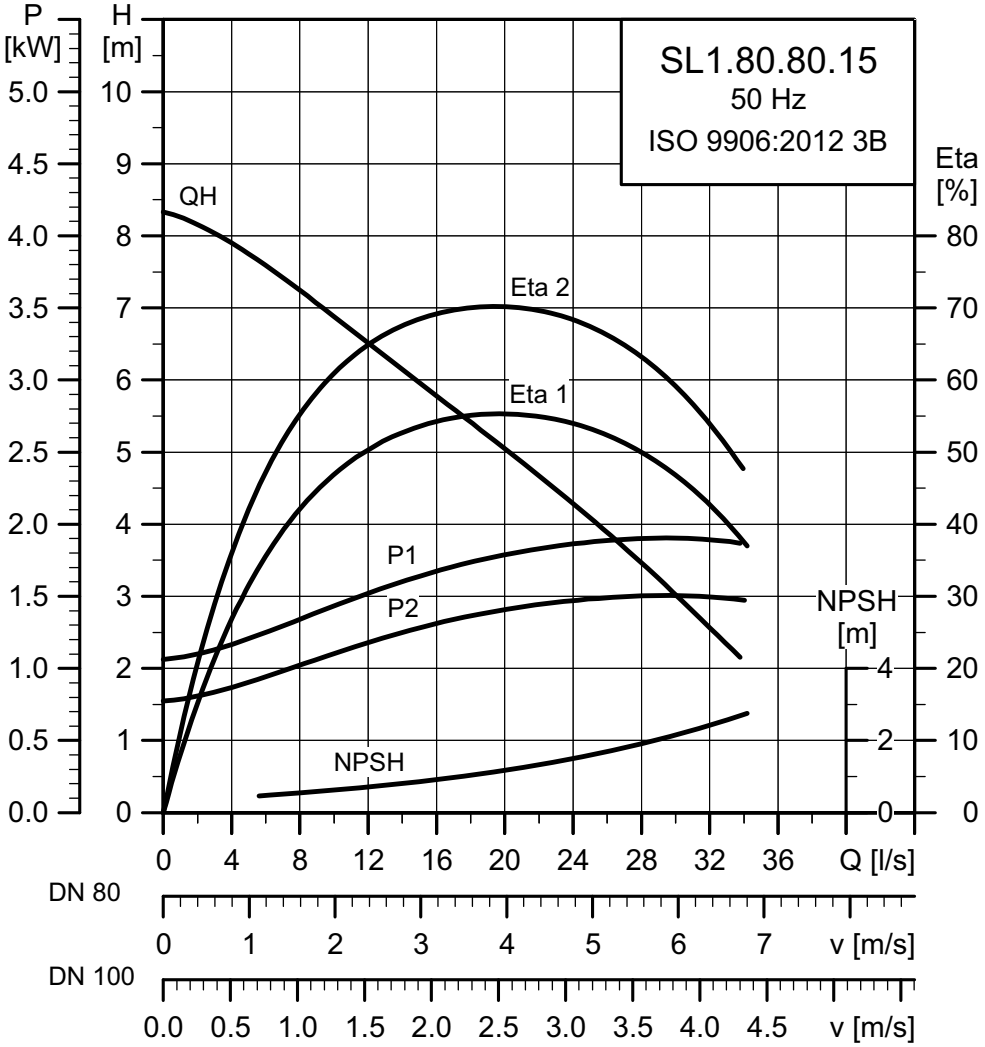
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	50	10	20	68	H	A	40	4-14

SL1.80.80

SL1.80.80.15.(A).(EX).4.--.C



TM04 3518 1314

Electrical data

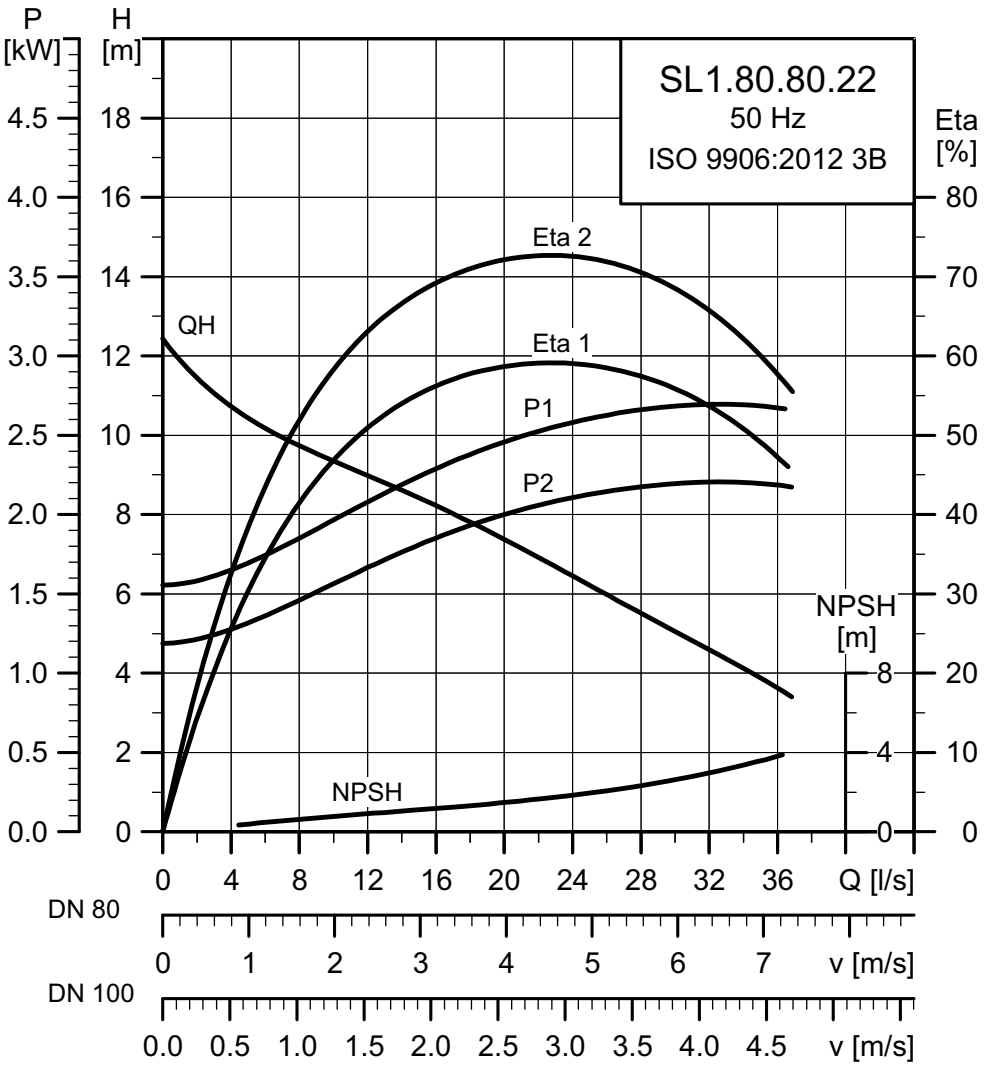
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	1.9	1.5	4	1452	DOL	7.1 - 7.2	49	81.8	83.9	84.3	0.48	0.61	0.70	0.0196	40
50B	3 x 400-415 V Y	1.9	1.5	4	1451	DOL	4.1 - 4.2	29	81.8	83.9	84.3	0.48	0.61	0.70	0.0196	40
50D	3 x 380-415 V Y	1.9	1.5	4	1452	DOL	4.1 - 4.2	29	81.8	83.9	84.3	0.48	0.61	0.70	0.0196	40

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	68	H	A	40	4-14

SL1.80.80.22.(A).(EX).4.--.C



TM04 3519 1314

Electrical data

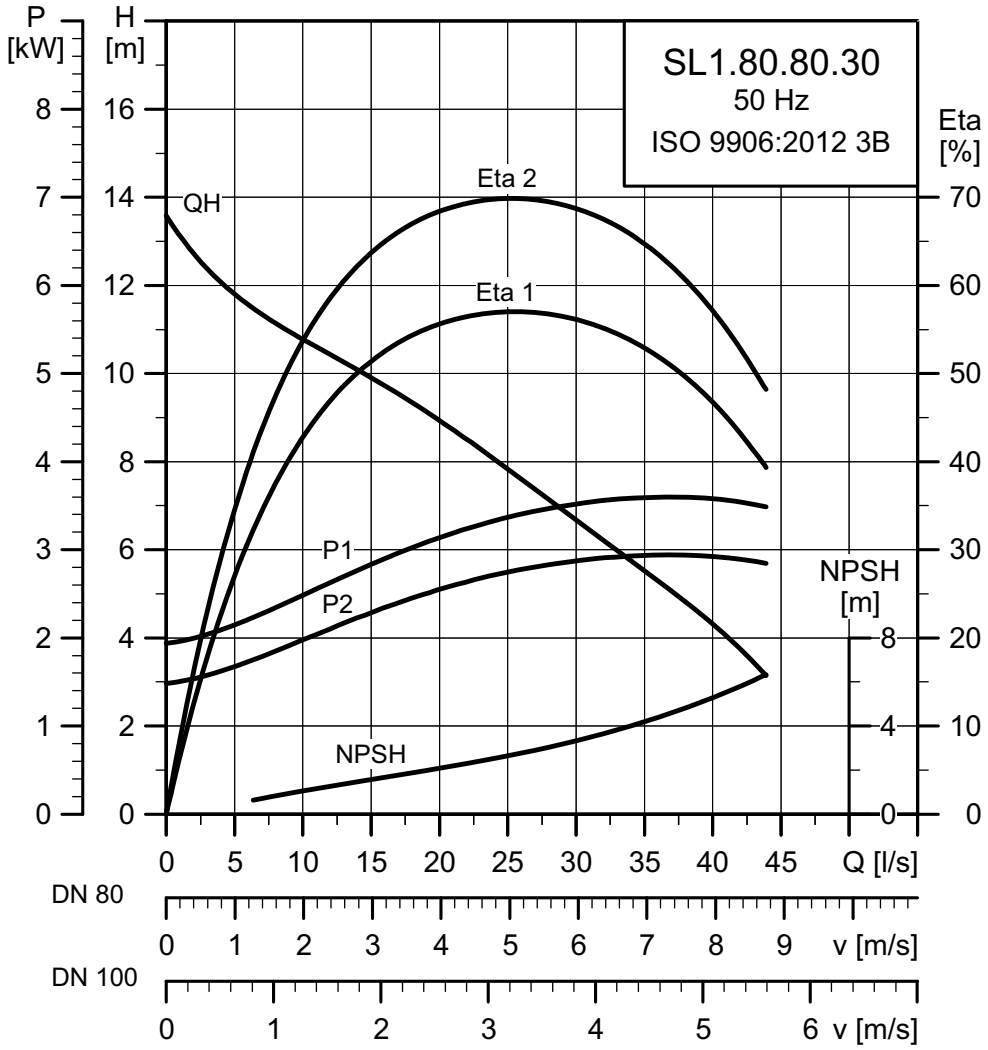
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	2.7	2.2	4	1462	DOL	9.7 - 9.9	66	82.9	85.4	85.7	0.52	0.65	0.73	0.0621	41
50B	3 x 400-415 V Y	2.7	2.2	4	1462	DOL	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0621	41
50D	3 x 380-415 V Y	2.7	2.2	4	1462	DOL	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0621	41
51D	3 x 380-415 V D	2.7	2.2	4	1462	Y/D	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0621	41

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	68	H	A	40	4-14

SL1.80.80.30.(A).(EX).4.--.C



Electrical data

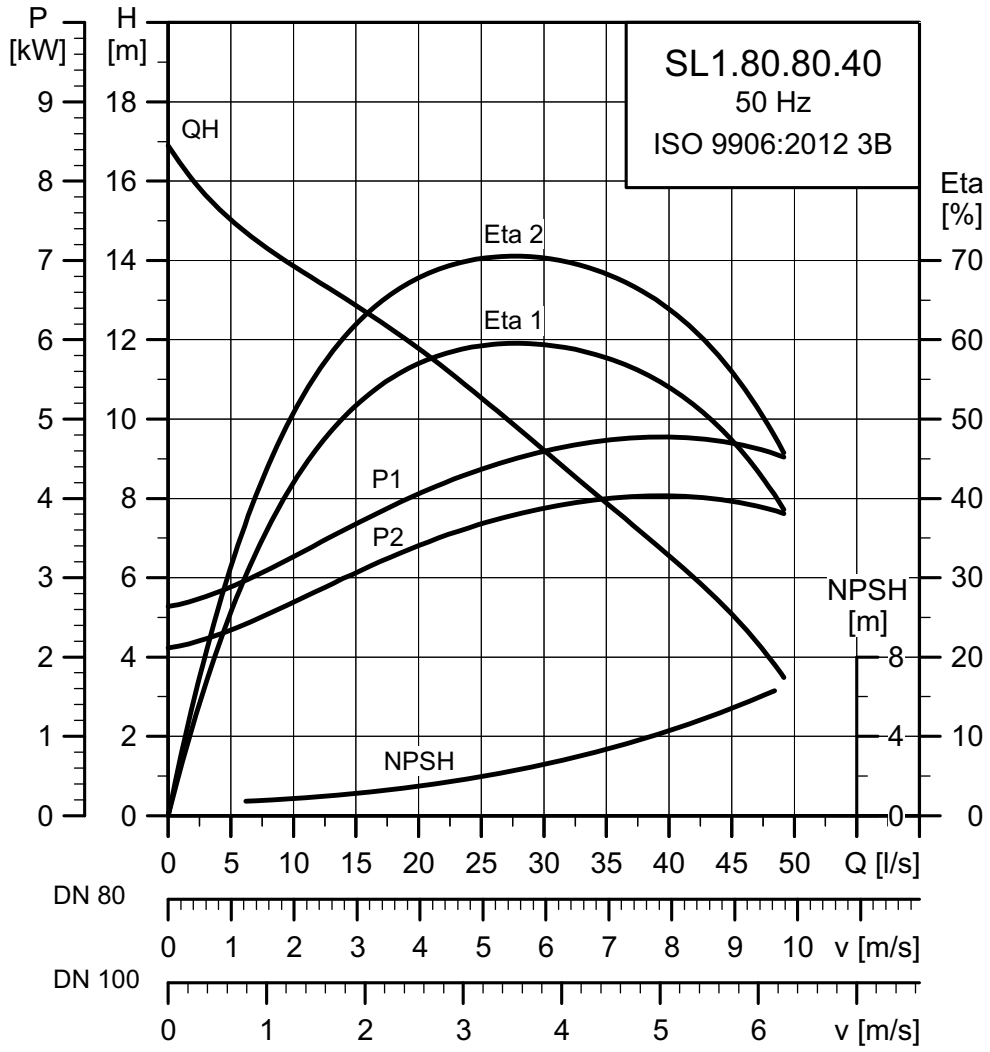
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N*	I_{start}	η_{motor} [%]			Cos φ			Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
							[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
50E	3 x 220-240 V D	3.7	3.0	4	1453	DOL	13.8 - 12.1	78	83.6	85.6	85.7	0.57	0.69	0.77	0.0775	64
50B	3 x 400-415 V Y	3.7	3.0	4	1453	DOL	8.0 - 7.0	45	83.6	85.6	85.7	0.57	0.69	0.77	0.0775	64
50D	3 x 380-415 V Y	3.7	3.0	4	1453	DOL	8.0 - 7.0	45	83.6	85.6	85.7	0.57	0.69	0.77	0.0775	64
51D	3 x 380-415 V D	3.7	3.0	4	1453	Y/D	8.0 - 7.0	45	83.6	85.6	85.7	0.57	0.69	0.77	0.0775	64

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size	Pump housing pressure	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature	pH
	[mm]	PN					[°C]	
S tube	80	10	20	68	H	A	40	4-14

SL1.80.80.40.(A).(EX).4.--.C



Electrical data

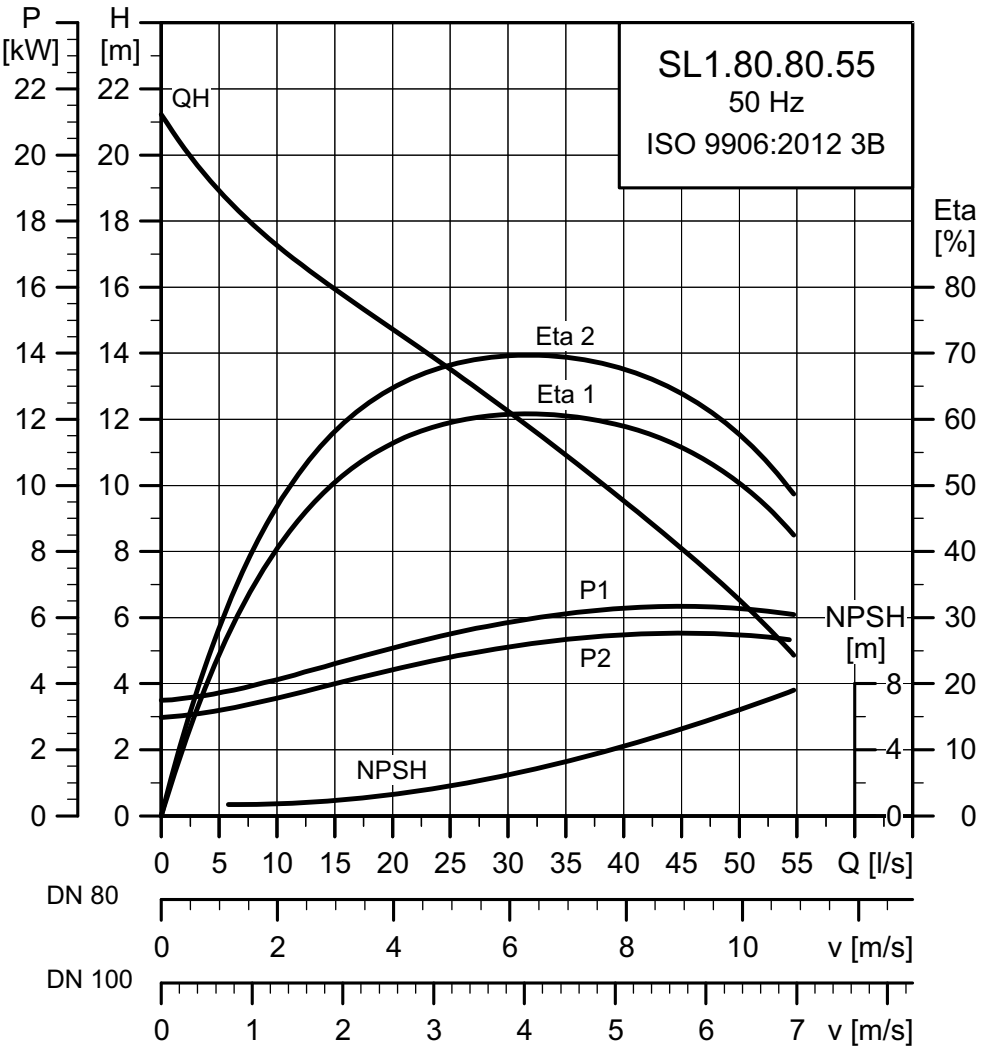
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.8	4.0	4	1464	Y/D	17.5 - 17.4	113	85.0	87.1	87.4	0.50	0.63	0.72	0.1167	98
50B	3 x 400-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1167	98
50D	3 x 380-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1167	98
51D	3 x 380-415 V D	4.8	4.0	4	1464	Y/D	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1167	98

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	68	H	A	40	4-14

SL1.80.80.55.(A).(EX).4.--.C



TM04 3522 1314

Electrical data

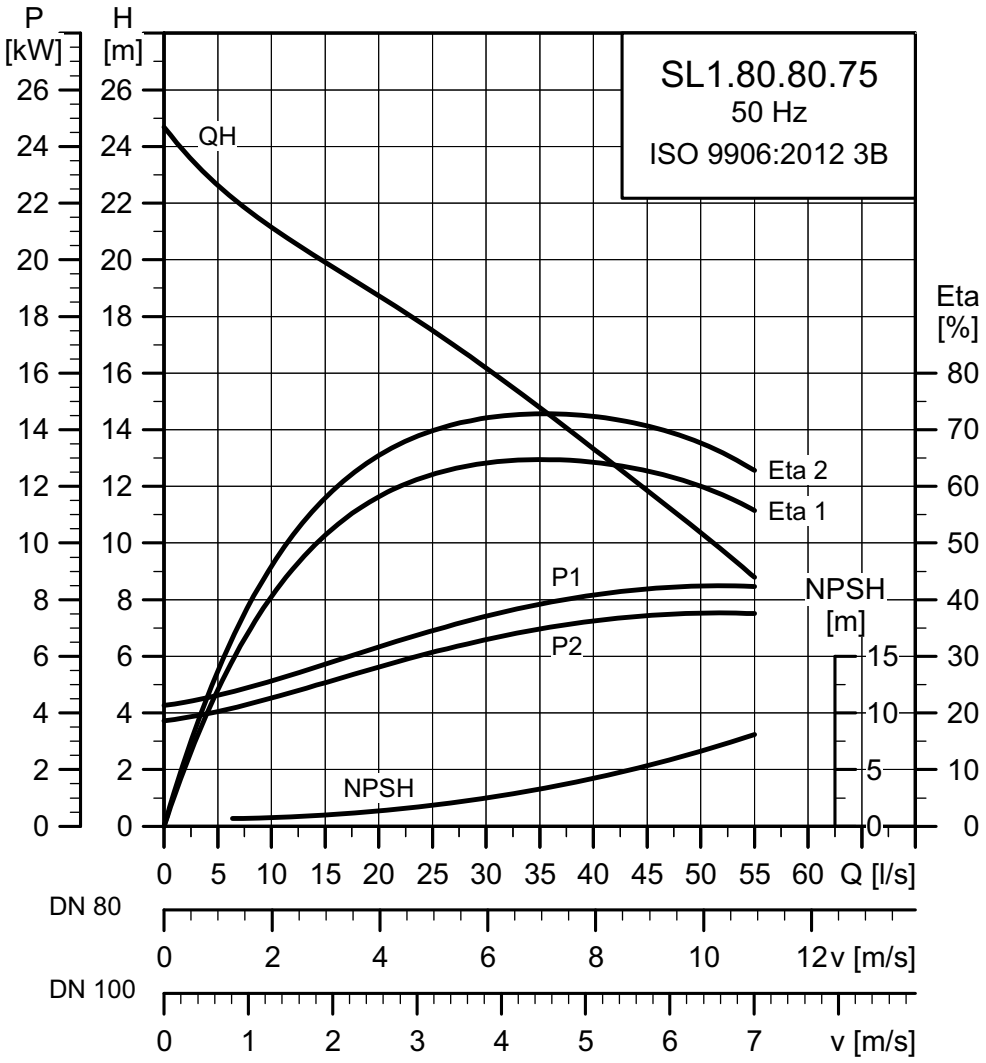
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	6.3	5.5	4	1463	Y/D	19.4 - 18.4	141	89.0	89.6	89.1	0.70	0.80	0.85	0.1509	120
50D	3 x 380-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1509	120
50B	3 x 400-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1509	120
51D	3 x 380-415 V D	6.3	5.5	4	1463	Y/D	11.2 - 10.6	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1509	120

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	68	H	A	40	4-14

SL1.80.80.75.(A).(EX).4.--.C



TM04 3523 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	8.4	7.5	4	1462	Y/D	26.1 - 25.0	192	90.7	91.1	90.5	0.68	0.78	0.83	0.2103	177
50B	3 x 400-415 V D	8.4	7.5	4	1462	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2103	177
50D	3 x 380-415 V D	8.4	7.5	4	1462	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2103	177
51D	3 x 380-415 V D	8.4	7.5	4	1462	Y/D	15.1 - 14.4	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2103	177

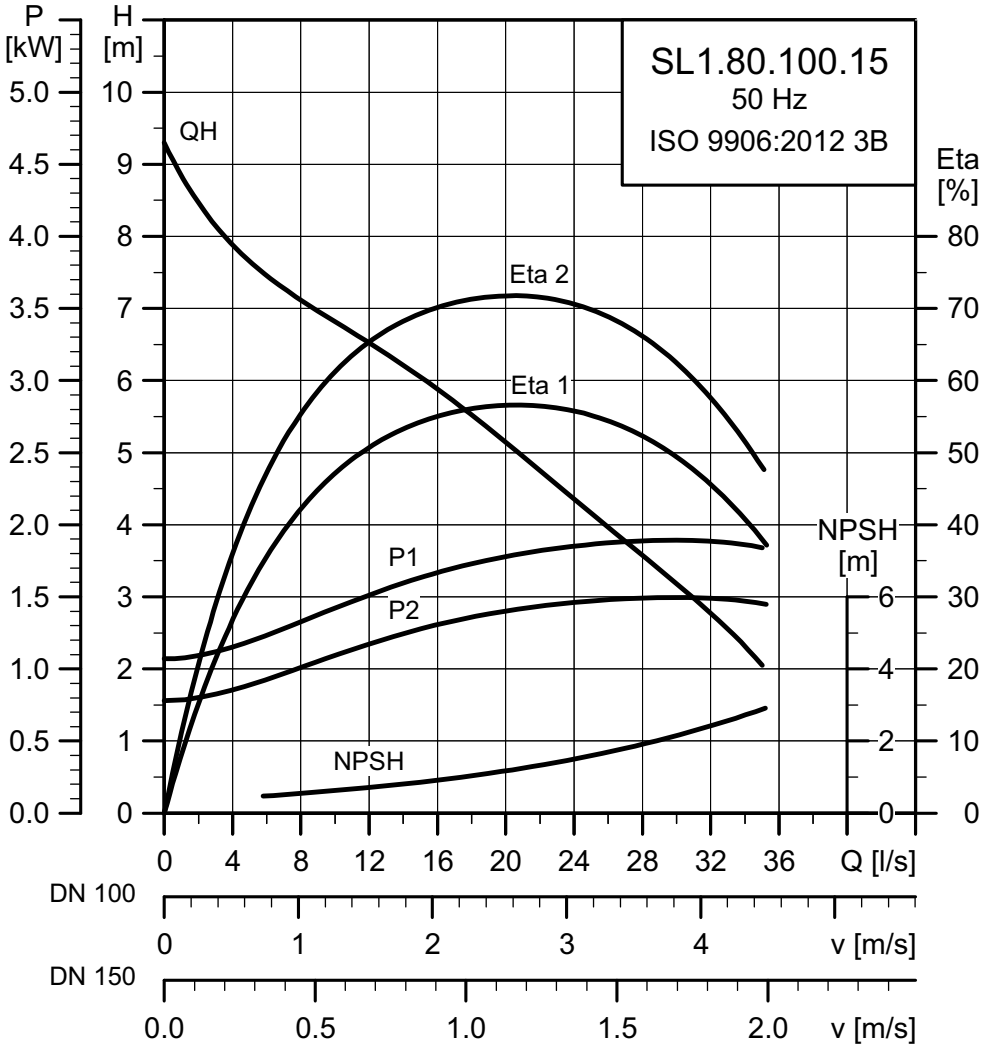
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	68	H	A	40	4-14

SL1.80.100

SL1.80.100.15.(A).(EX).4.--.C



Electrical data

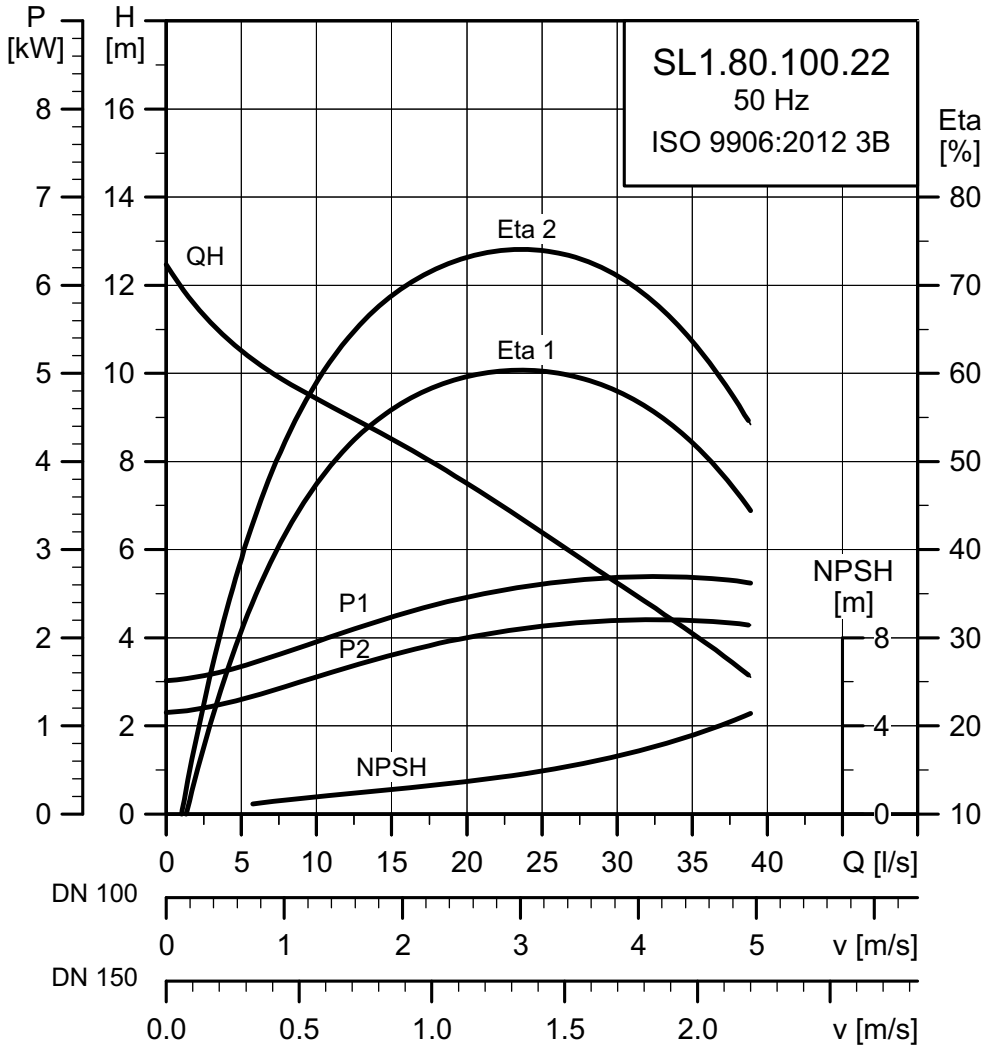
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	1.9	1.5	4	1452	DOL	7.1 - 7.2	49	81.8	83.9	84.3	0.48	0.61	0.70	0.0196	40
50B	3 x 400-415 V Y	1.9	1.5	4	1452	DOL	4.1 - 4.2	29	81.8	83.9	84.3	0.48	0.61	0.70	0.0196	40
50D	3 x 380-415 V Y	1.9	1.5	4	1452	DOL	4.1 - 4.2	29	81.8	83.9	84.3	0.48	0.61	0.70	0.0196	40

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	68	H	A	40	4-14

SL1.80.100.22.(A).(EX).4.--.C



TM04 3461 1314

Electrical data

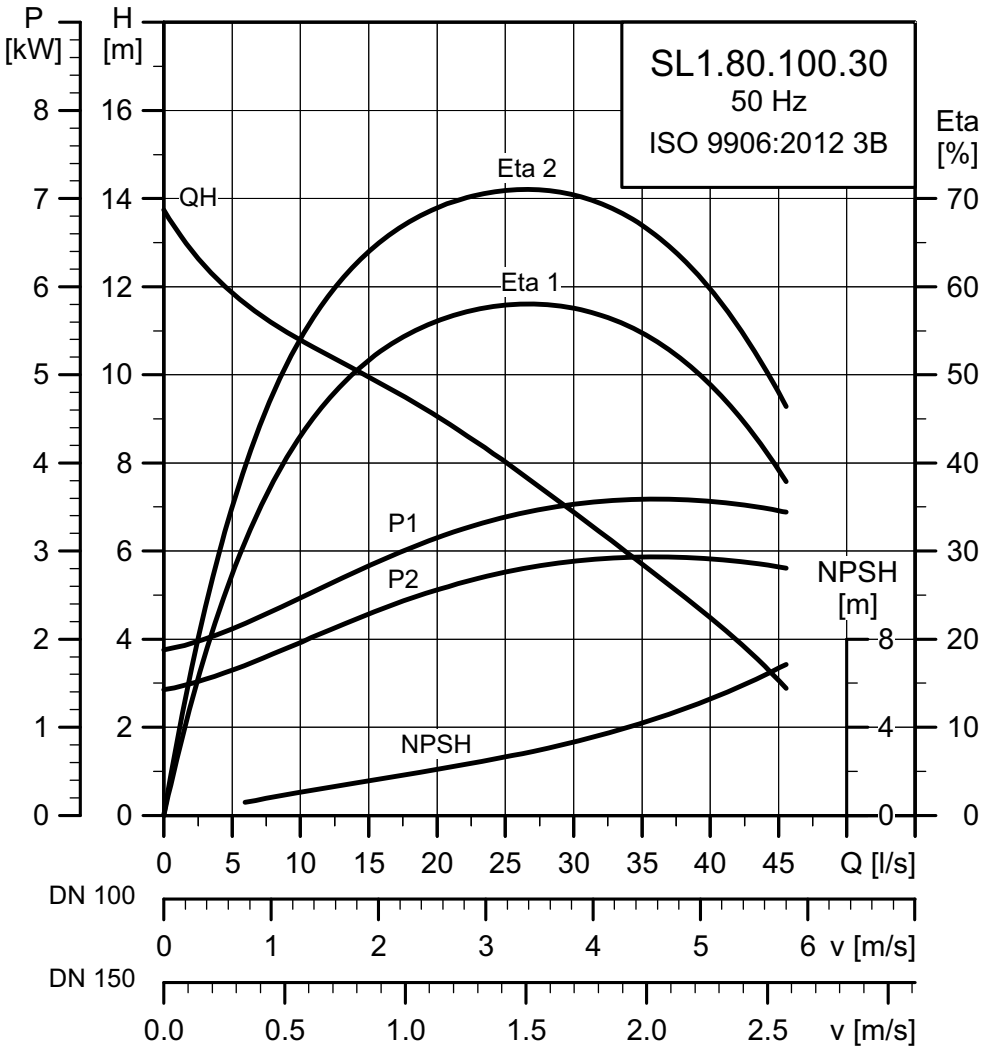
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	2.7	2.2	4	1462	DOL	9.7 - 9.9	66	82.9	85.4	85.7	0.52	0.65	0.73	0.0621	41
50B	3 x 400-415 V Y	2.7	2.2	4	1462	DOL	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0621	41
50D	3 x 380-415 V Y	2.7	2.2	4	1462	DOL	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0621	41
51D	3 x 380-415 V D	2.7	2.2	4	1462	Y/D	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0621	41

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	68	H	A	40	4-14

SL1.80.100.30.(A).(EX).4.--.C



Electrical data

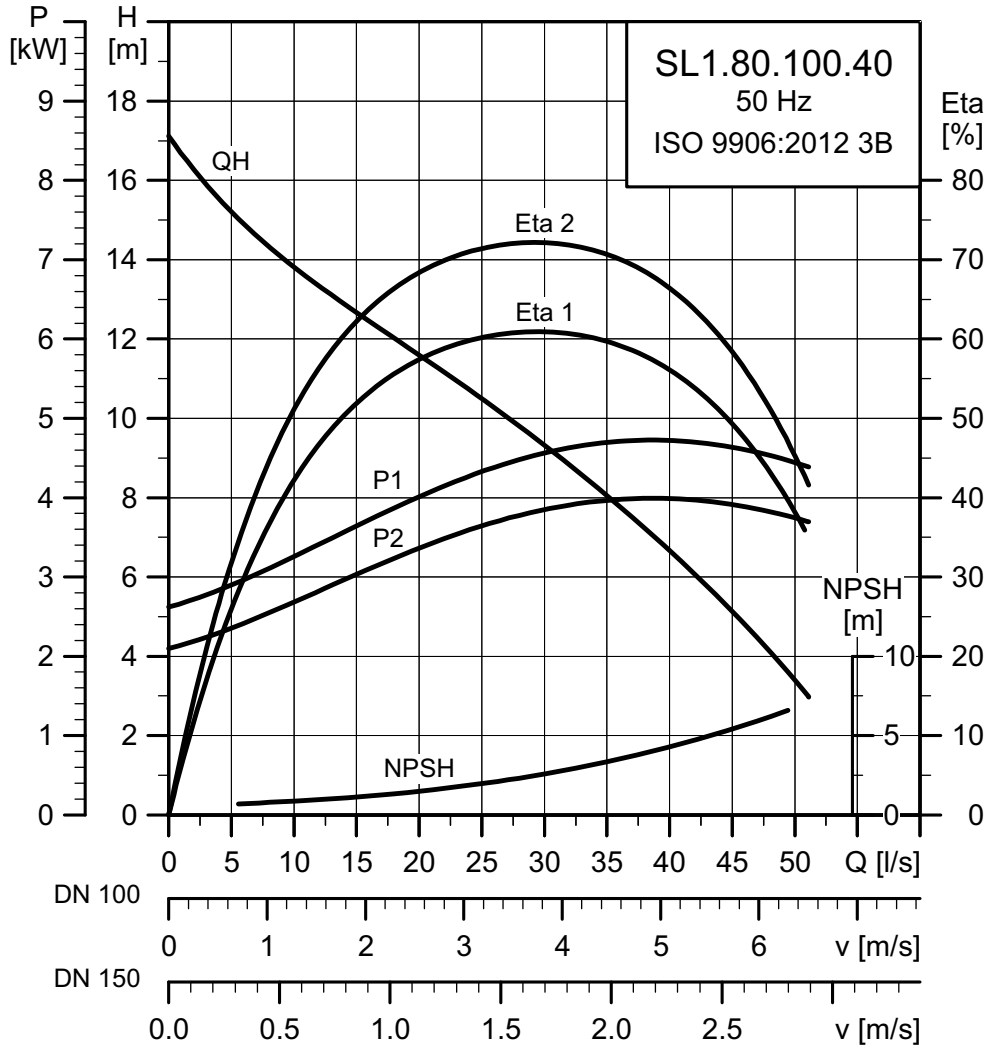
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	3.7	3.0	4	1453	DOL	13.9 - 12.1	78	83.6	85.6	85.7	0.57	0.69	0.77	0.0775	64
50B	3 x 400-415 V Y	3.7	3.0	4	1453	DOL	8.0 - 7.0	45	83.6	85.6	85.7	0.57	0.69	0.77	0.0775	64
50D	3 x 380-415 V Y	3.7	3.0	4	1453	DOL	8.0 - 7.0	45	83.6	85.6	85.7	0.57	0.69	0.77	0.0775	64
51D	3 x 380-415 V D	3.7	3.0	4	1453	Y/D	8.0 - 7.0	45	83.6	85.6	85.7	0.57	0.69	0.77	0.0775	64

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	68	H	A	40	4-14

SL1.80.100.40.(A).(EX).4.--.C



Electrical data

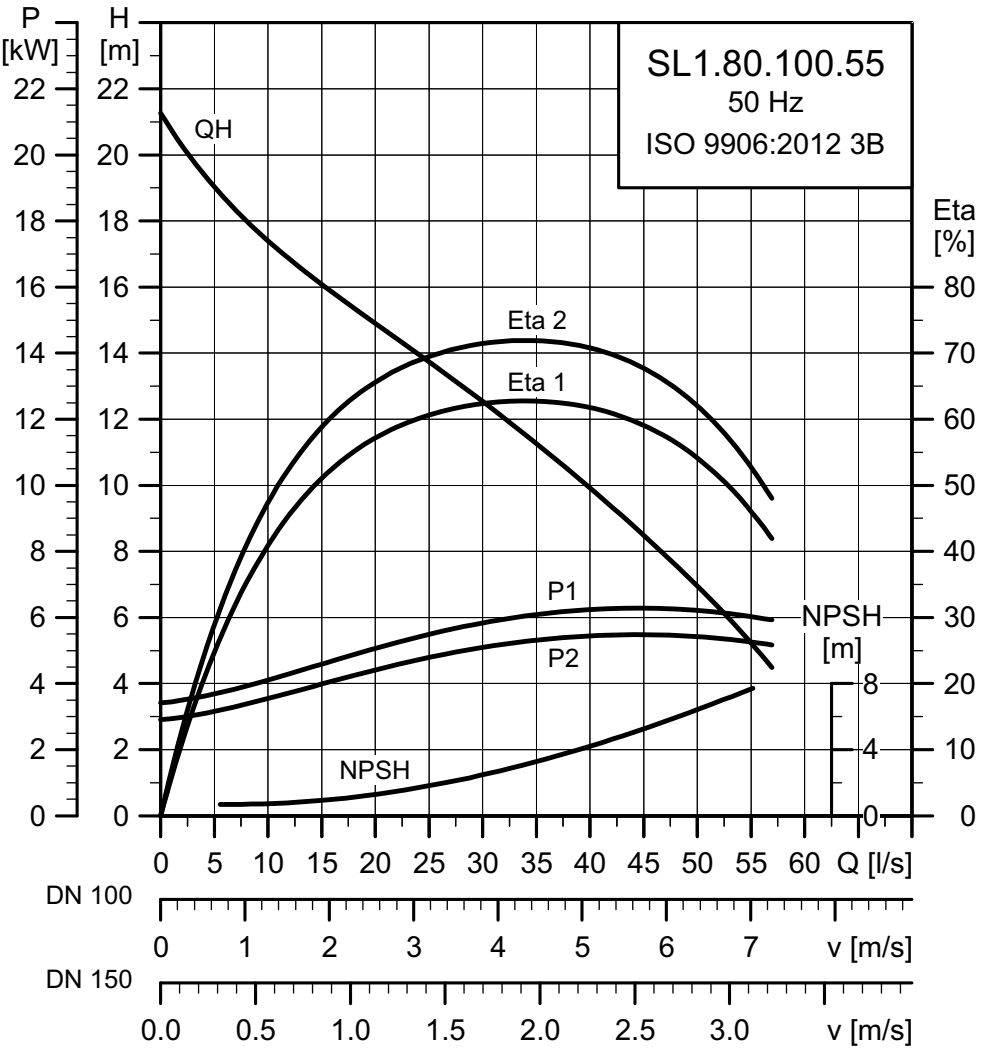
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.8	4.0	4	1464	Y/D	17.4 - 17.5	113	85.0	87.1	87.4	0.50	0.63	0.72	0.1167	98
50B	3 x 400-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1167	98
50D	3 x 380-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1167	98
51D	3 x 380-415 V D	4.8	4.0	4	1464	Y/D	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1167	98

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	68	H	A	40	4-14

SL1.80.100.55.(A).(EX).4.--.C



Electrical data

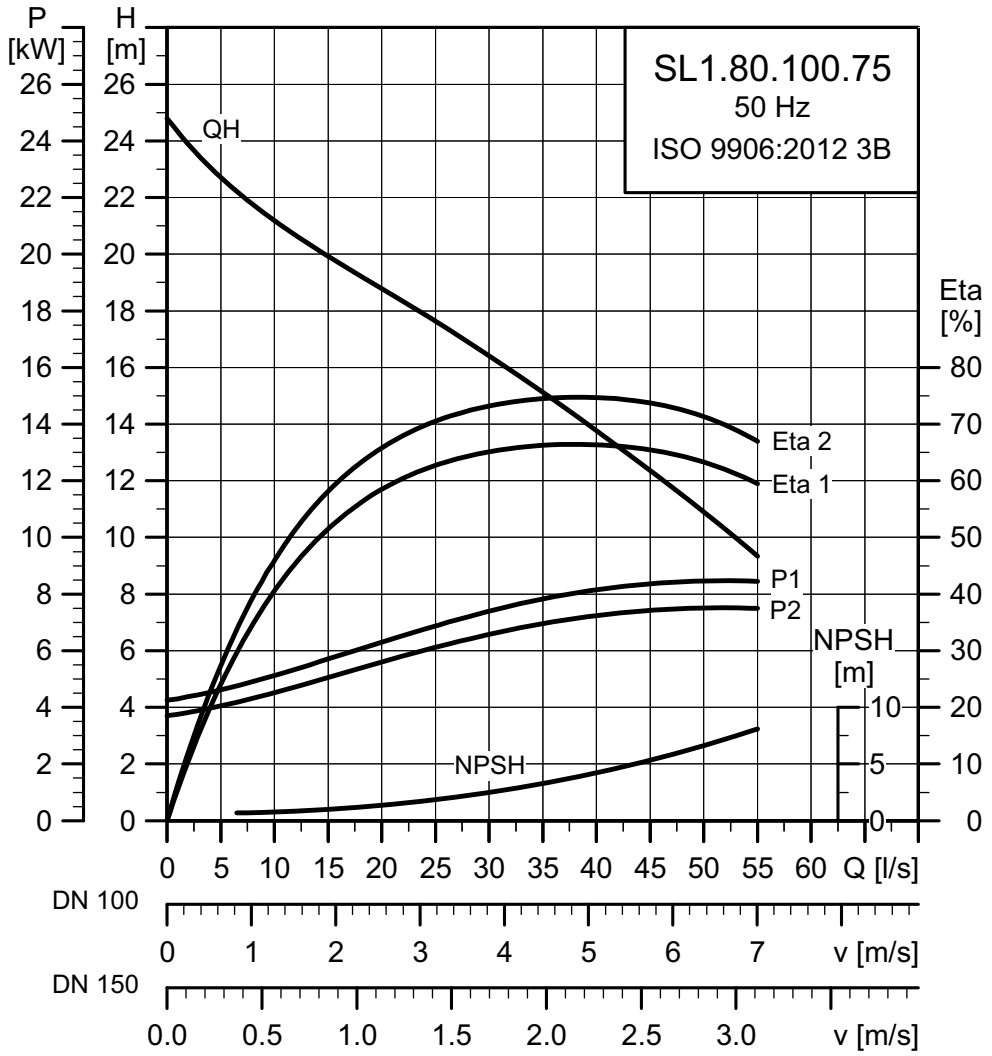
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	6.3	5.5	4	1463	Y/D	19.4 - 18.4	141	89.0	89.6	89.1	0.70	0.80	0.85	0.1509	120
50B	3 x 400-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1509	120
50D	3 x 380-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1509	120
51D	3 x 380-415 V D	6.3	5.5	4	1463	Y/D	11.2 - 10.6	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1509	120

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	IP68	H	A	40	4-14

SL1.80.100.75.(A).(EX).4.--.C



TM04 3459 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	8.4	7.5	4	1462	Y/D	26.1 - 25.0	192	90.7	91.1	90.5	0.68	0.78	0.83	0.2103	177
50B	3 x 400-415 V D	8.4	7.5	4	1462	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2103	177
50D	3 x 380-415 V D	8.4	7.5	4	1462	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2103	177
51D	3 x 380-415 V D	8.4	7.5	4	1462	Y/D	15.1 - 14.4	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2103	177

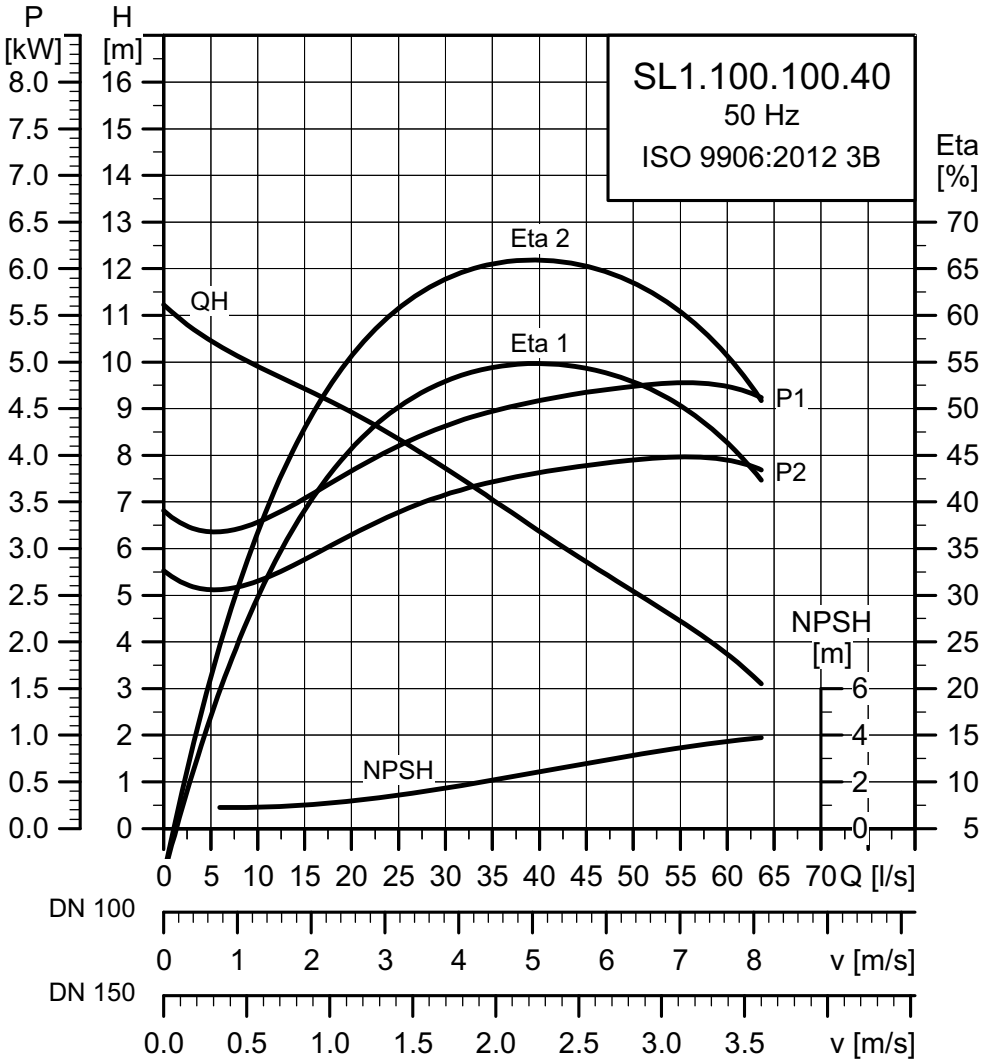
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	80	10	20	IP68	H	A	40	4-14

SL1.100.100

SL1.100.100.40.(A).(EX).4.--.C



TM04 3524 1314

Electrical data

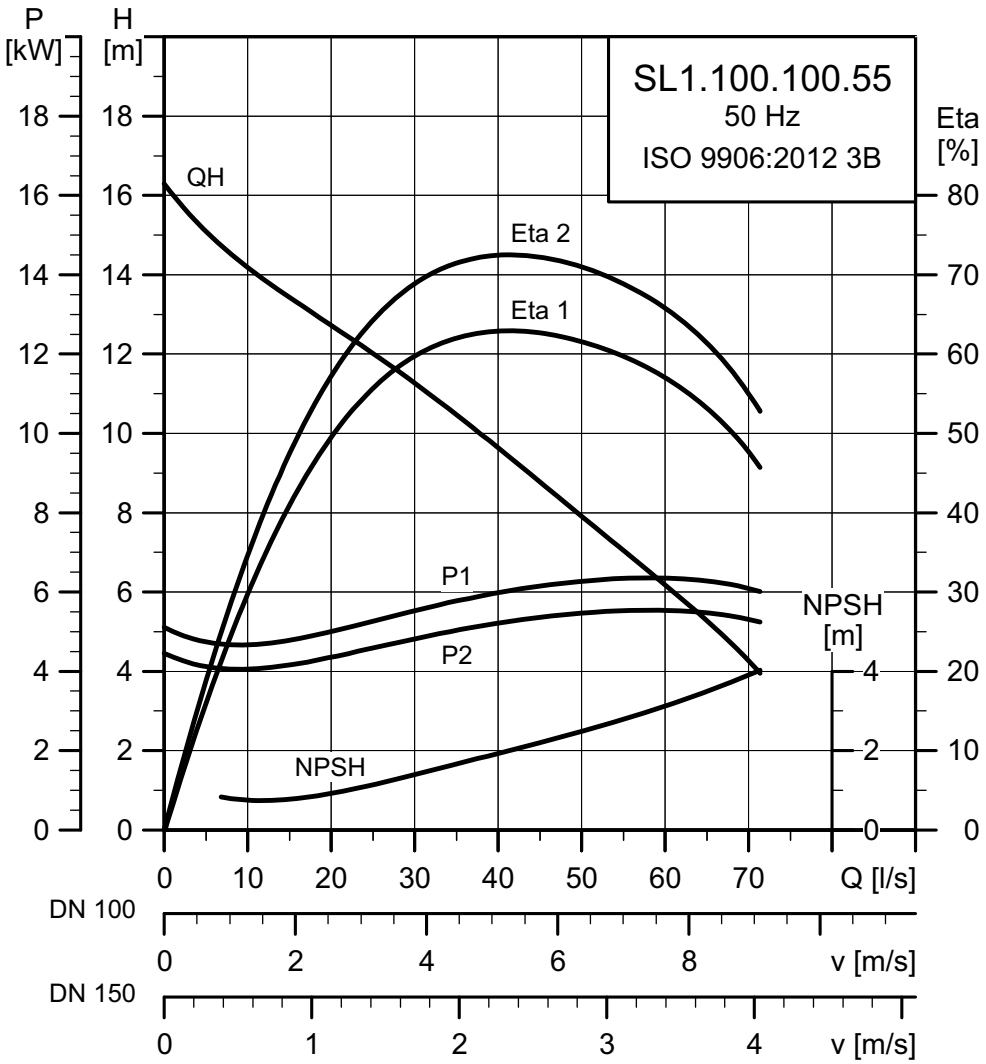
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N*	I_{start}	η_{motor} [%]			Cos φ			Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
							[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
51E	3 x 220-240 V D	4.8	4.0	4	1464	Y/D	17.5 - 17.4	113	85.0	87.1	87.4	0.50	0.63	0.72	0.1127	98
50B	3 x 400-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1127	98
50D	3 x 380-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1127	98
51D	3 x 380-415 V D	4.8	4.0	4	1464	Y/D	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1127	98

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size	Pump housing pressure	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature	pH
	[mm]	PN					[°C]	
S tube	100	10	20	IP68	H	A	40	4-14

SL1.100.100.55.(A).(EX).4.--.C



TM04 3525 1314

Electrical data

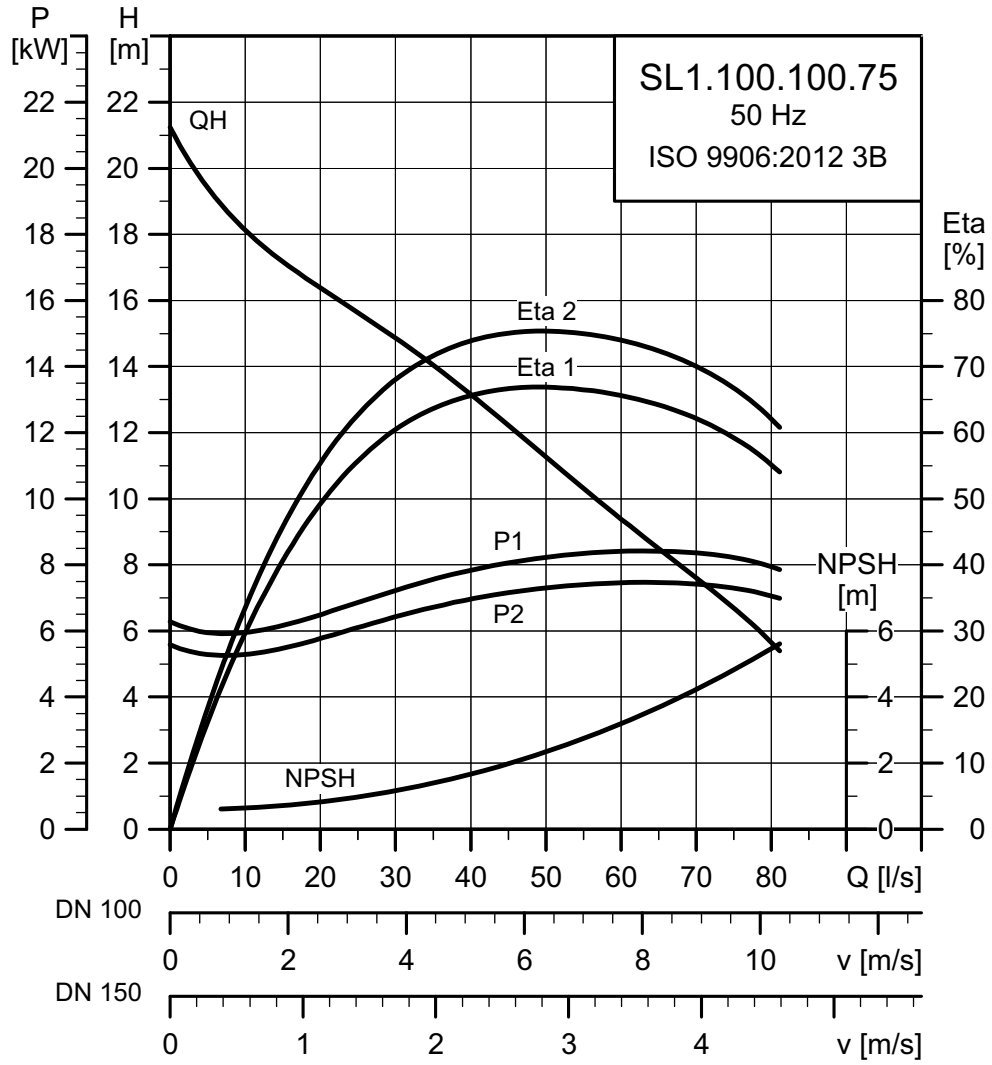
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	6.3	5.5	4	1463	Y/D	19.4 - 18.4	141	89.0	89.6	89.1	0.70	0.80	0.85	0.1616	120
50B	3 x 400-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1616	120
50D	3 x 380-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1616	120
51D	3 x 380-415 V D	6.3	5.5	4	1463	Y/D	11.2 - 10.6	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1616	120

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	100	10	20	IP68	H	A	40	4-14

SL1.100.100.75.(A).(EX).4.--.C



TM04 3526 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	8.4	7.5	4	1463	Y/D	26.1 - 25.0	192	90.7	91.1	90.5	0.68	0.78	0.83	0.2222	177
50B	3 x 400-415 V D	8.4	7.5	4	1463	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2222	177
50D	3 x 380-415 V D	8.4	7.5	4	1463	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2222	177
51D	3 x 380-415 V D	8.4	7.5	4	1463	Y/D	15.1 - 14.4	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2222	177

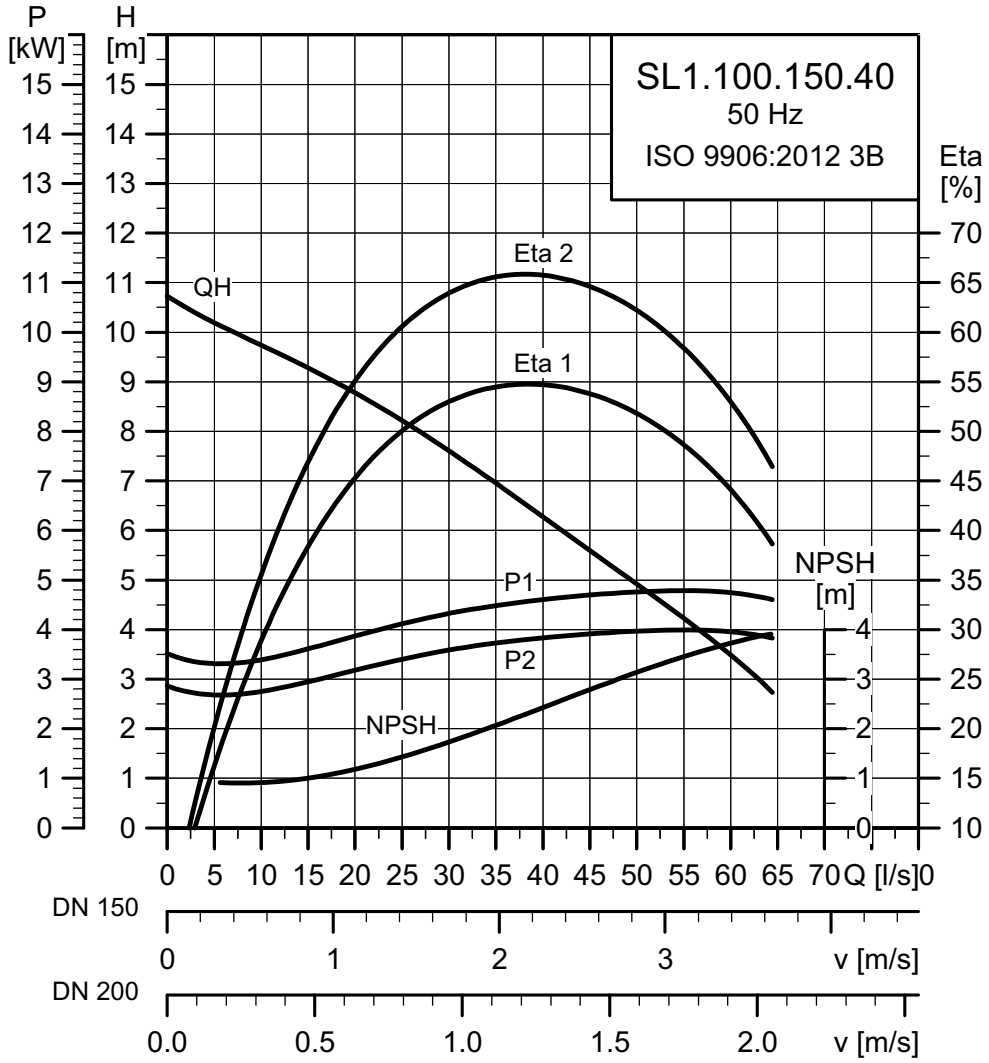
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	100	10	20	IP68	H	A	40	4-14

SL1.100.150

SL1.100.150.40.(A).(EX).4.--.C



TM04 3527 1314

Electrical data

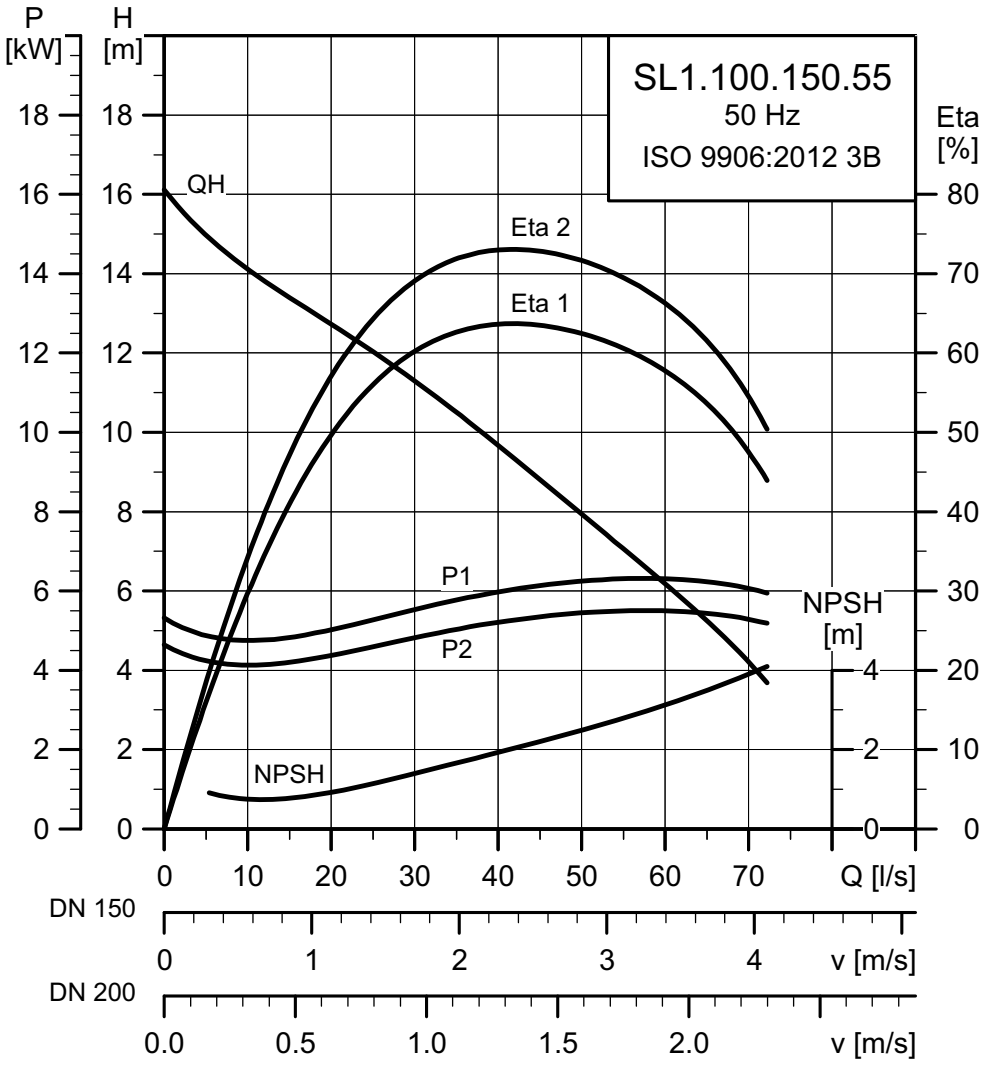
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.8	4.0	4	1465	Y/D	17.4 - 17.5	113	85.0	87.1	87.4	0.50	0.63	0.72	0.1127	98
50B	3 x 400-415 V D	4.8	4.0	4	1465	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1127	98
50D	3 x 380-415 V D	4.8	4.0	4	1465	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1127	98
51D	3 x 380-415 V D	4.8	4.0	4	1465	Y/D	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.1127	98

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	100	10	20	IP68	H	A	40	4-14

SL1.100.150.55.(A).(EX).4.--.C



TM04 3528 1314

Electrical data

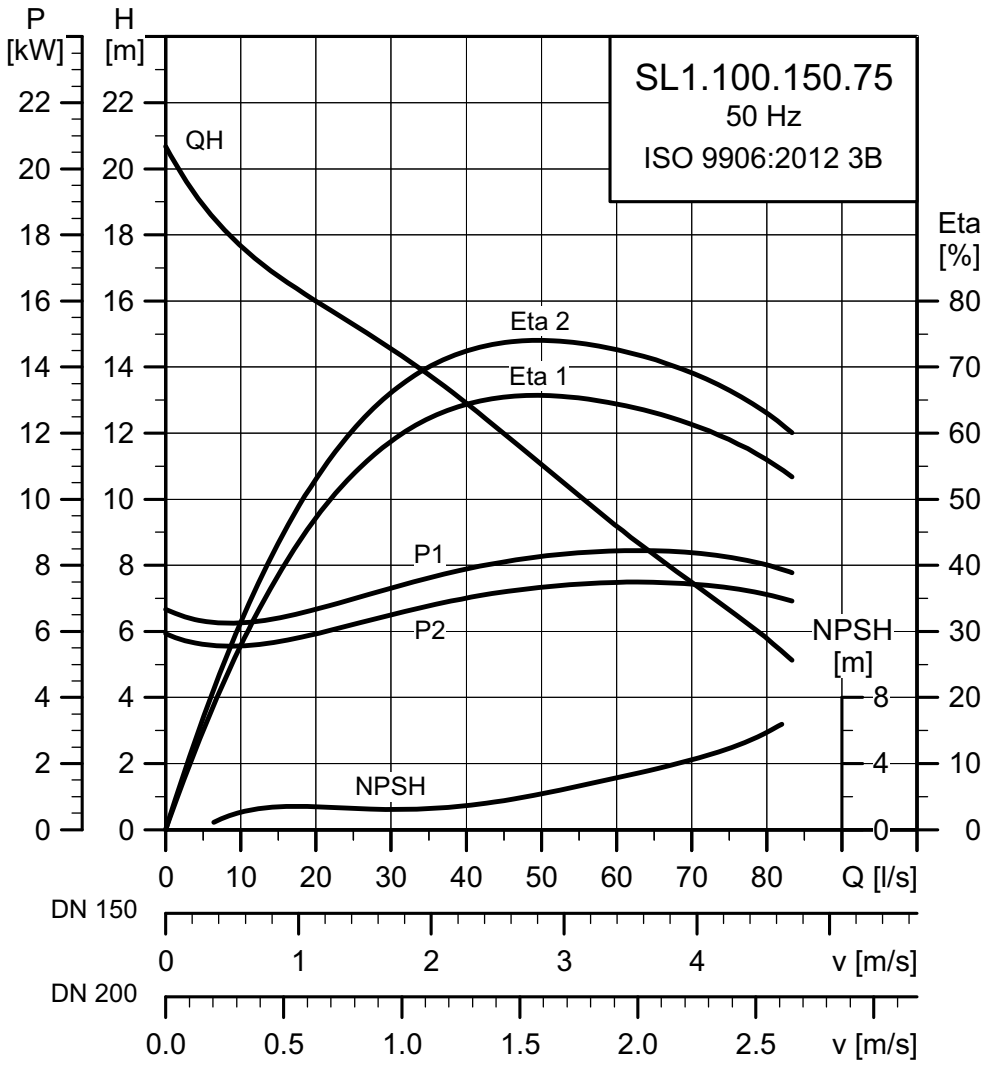
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	6.3	5.5	4	1463	Y/D	19.4 - 18.4	141	89.0	89.6	89.1	0.70	0.80	0.85	0.1616	120
50B	3 x 400-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1616	120
50D	3 x 380-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1616	120
51D	3 x 380-415 V D	6.3	5.5	4	1463	Y/D	11.2 - 10.6	81	89.0	89.6	89.1	0.70	0.80	0.85	0.1616	120

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	100	10	20	IP68	H	A	40	4-14

SL1.100.150.75.(A).(EX).4.--.C



TM04 3529 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	8.4	7.5	4	1462	Y/D	26.1 - 25.0	192	90.7	91.1	90.5	0.68	0.78	0.83	0.2222	177
50B	3 x 400-415 V D	8.4	7.5	4	1462	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2222	177
50D	3 x 380-415 V D	8.4	7.5	4	1462	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2222	177
51D	3 x 380-415 V D	8.4	7.5	4	1462	Y/D	15.1 - 14.4	111	90.7	91.1	90.5	0.68	0.78	0.83	0.2222	177

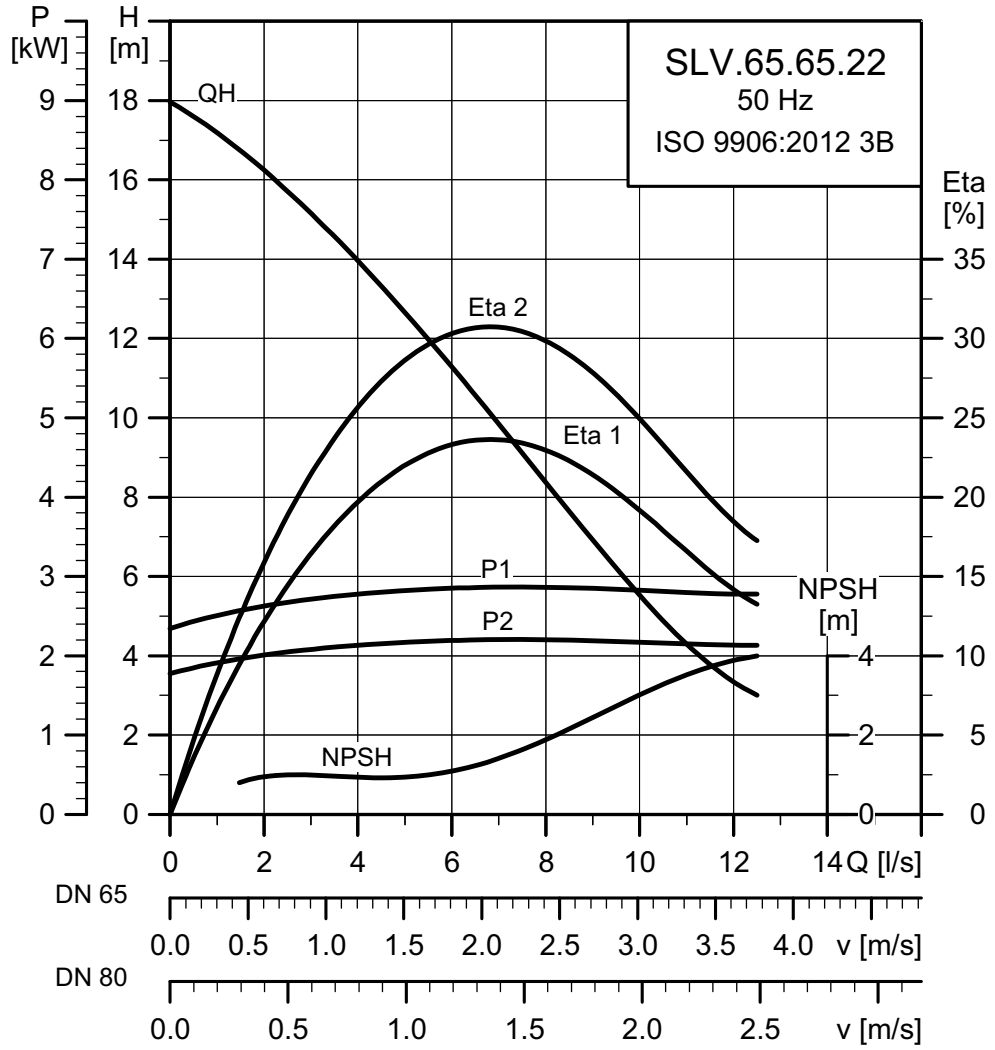
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
S tube	100	10	20	IP68	H	A	40	4-14

SLV.65.65

SLV.65.65.22.(A).(EX).2.--.C



TM04 3530 1314

Electrical data

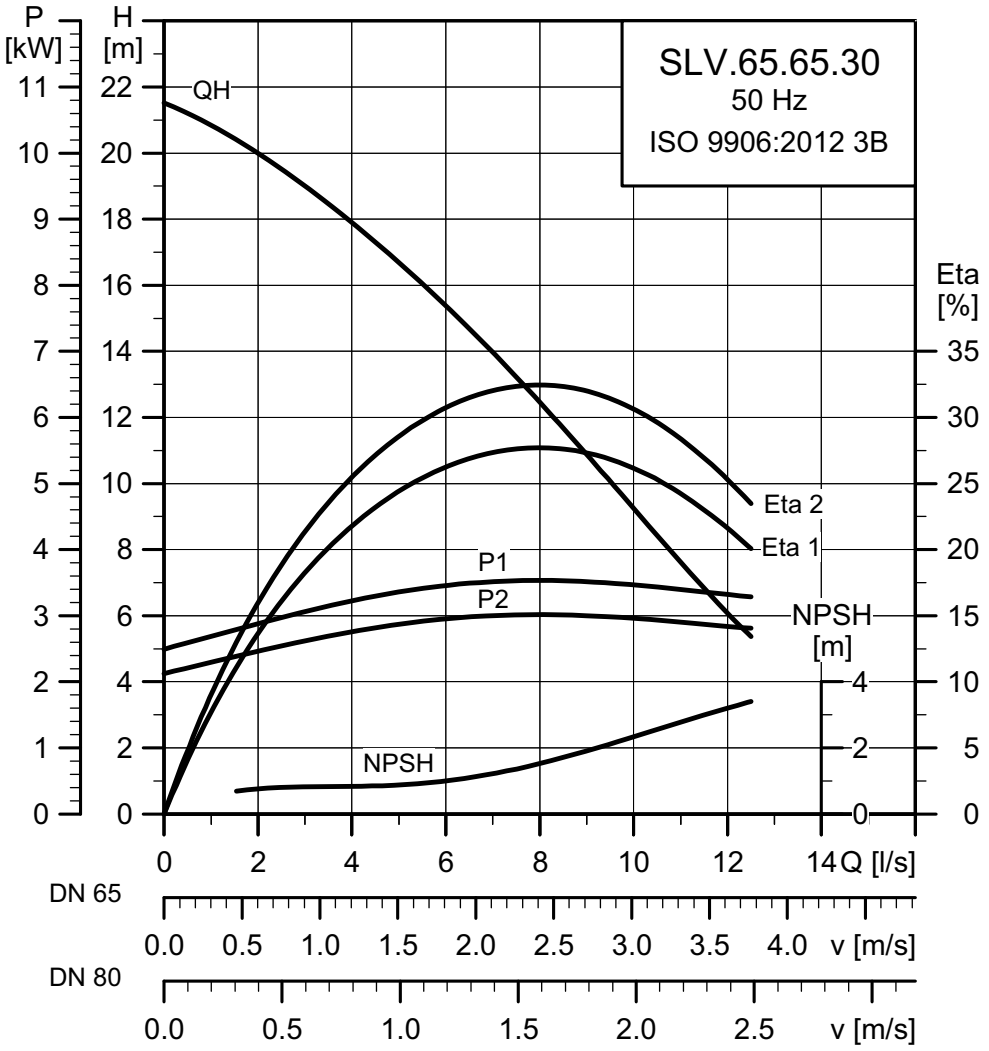
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	2.9	2.2	2	2900	DOL	8.8 - 8.4	61	83.9	85.6	85.1	0.74	0.83	0.88	0.0104	26
50B	3 x 400-415 V Y	2.9	2.2	2	2900	DOL	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0104	26
50D	3 x 380-415 V Y	2.9	2.2	2	2900	DOL	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0104	26
51D	3 x 380-415 V D	2.9	2.2	2	2900	Y/D	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0104	26

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	65	10	20	IP68	H	A	40	4-14

SLV.65.65.30.(A).(EX).2.--.C



TM04 3531 1314

Electrical data

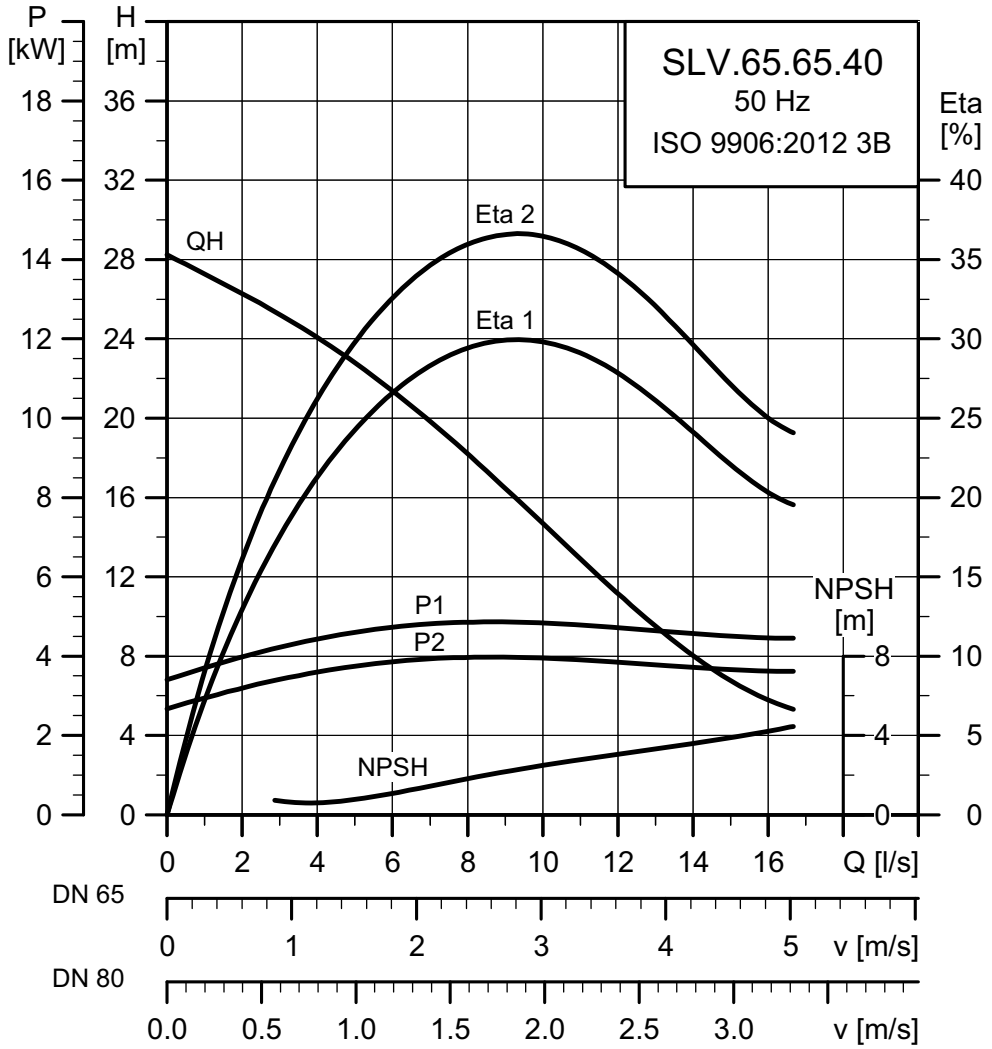
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	3.8	3.0	2	2909	DOL	12.0 - 11.6	78	84.0	85.6	85.6	0.67	0.79	0.85	0.0098	65
50B	3 x 400-415 V Y	3.8	3.0	2	2909	DOL	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0098	65
50D	3 x 380-415 V Y	3.8	3.0	2	2909	DOL	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0098	65
51D	3 x 380-415 V D	3.8	3.0	2	2909	Y/D	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0098	65

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	65	10	20	IP68	H	A	40	4-14

SLV.65.65.40.(A).(EX).2.--.C



TM04 3532 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.9	4.0	2	2930	Y/D	14.5 - 13.7	149	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68
50B	3 x 400-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68
50D	3 x 380-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68
51D	3 x 380-415 V D	4.9	4.0	2	2930	Y/D	8.4 - 7.9	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68

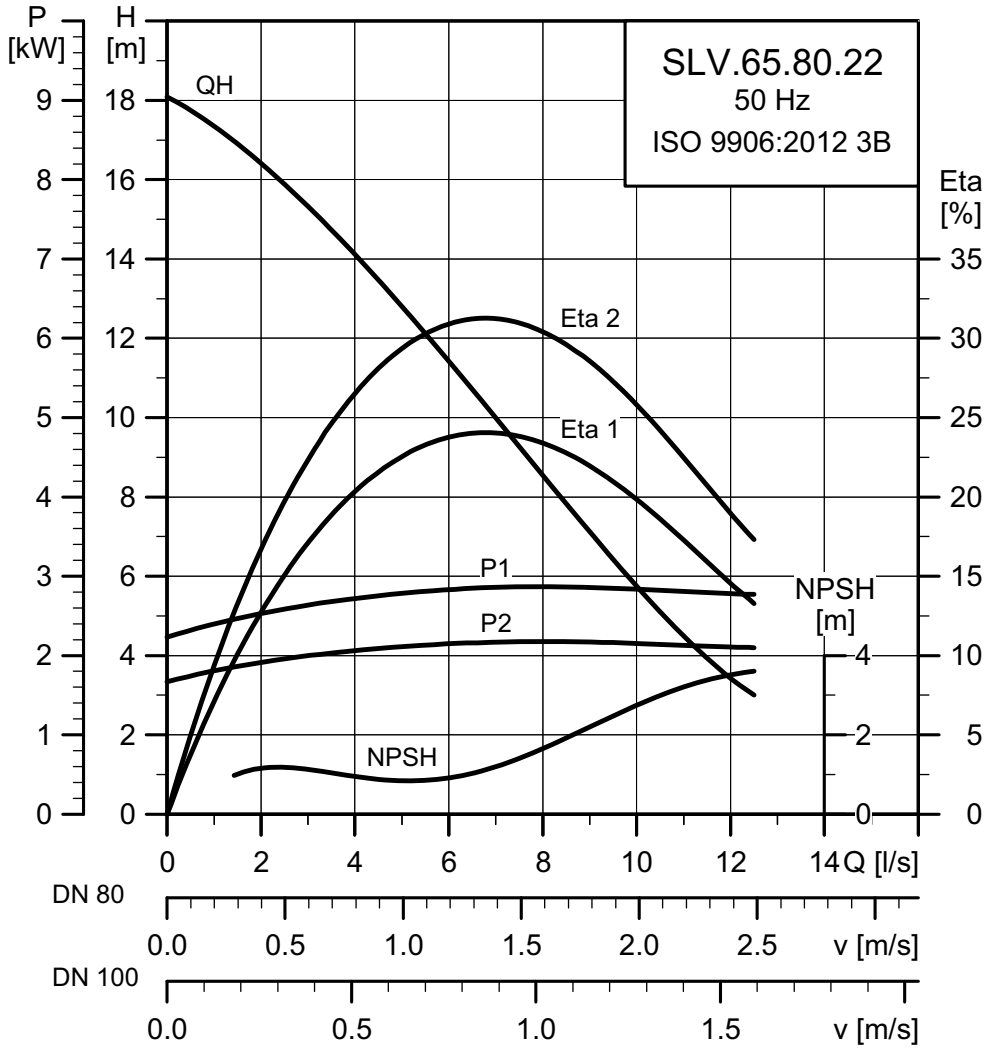
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	65	10	20	IP68	H	A	40	4-14

SLV.65.80

SLV.65.80.22.(A).(EX).2.--.C



TM04 3533 1314

Electrical data

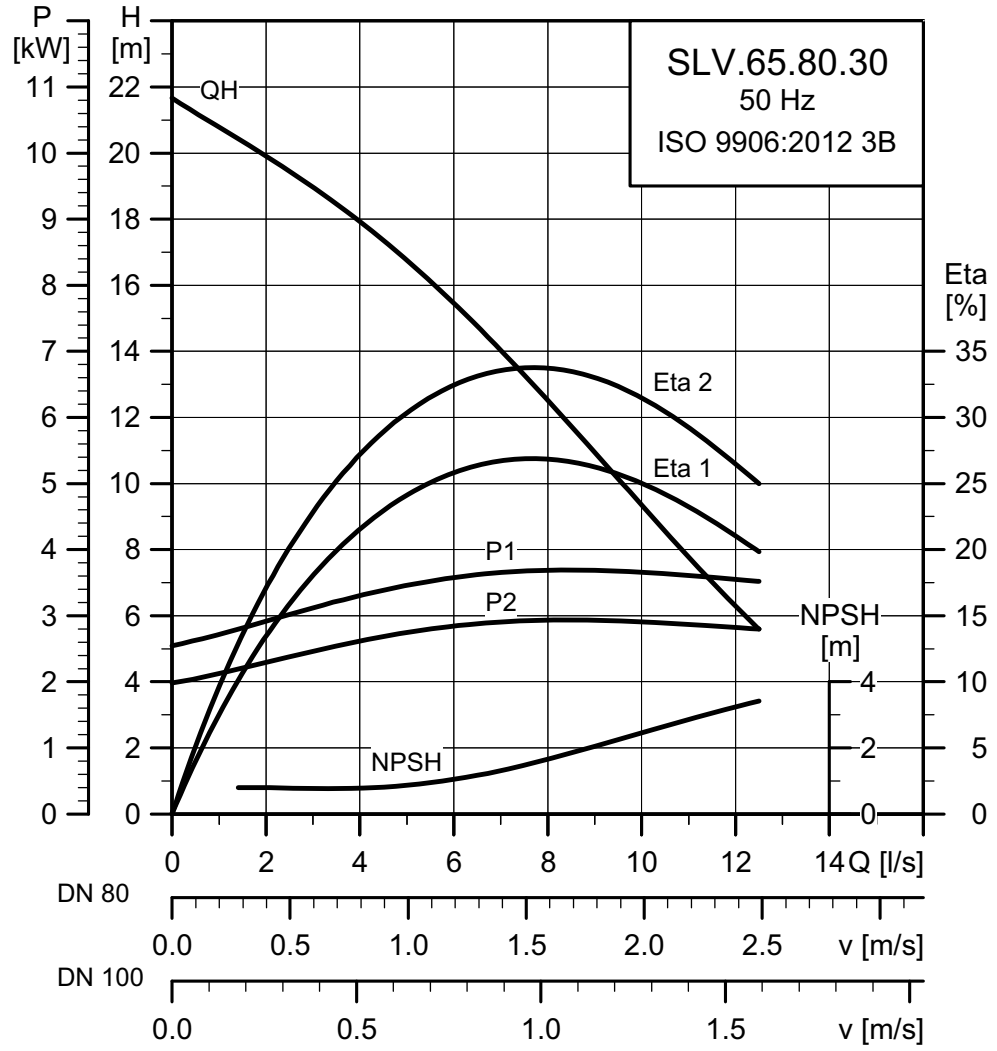
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	2.9	2.2	2	2900	DOL	8.8 - 8.4	61	83.9	85.6	85.1	0.74	0.83	0.88	0.0104	26
50B	3 x 400-415 V Y	2.9	2.2	2	2900	DOL	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0104	26
50D	3 x 380-415 V Y	2.9	2.2	2	2900	DOL	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.83	0.88	0.0104	26
51D	3 x 380-415 V D	2.9	2.2	2	2900	Y/D	5.1 - 4.8	35	83.9	85.6	85.1	0.74	0.86	0.88	0.0104	26

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	65	10	20	IP68	H	A	40	4-14

SLV.65.80.30.(A).(EX).2.--.C



TM04 3534 1314

Electrical data

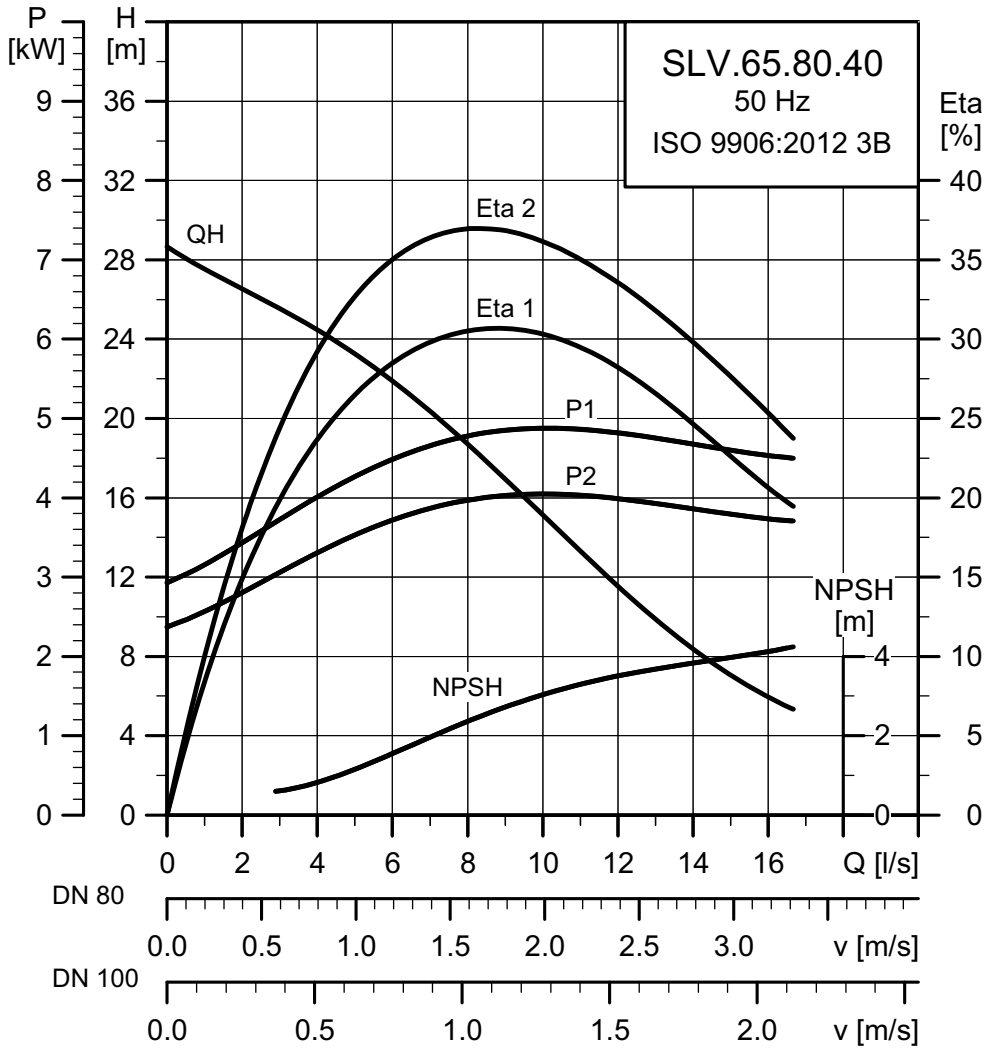
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	3.8	3.0	2	2909	DOL	12.0 - 11.6	78	84.0	85.6	85.6	0.67	0.79	0.85	0.0098	65
50B	3 x 400-415 V Y	3.8	3.0	2	2909	DOL	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0098	65
50D	3 x 380-415 V Y	3.8	3.0	2	2909	DOL	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0098	65
51D	3 x 380-415 V D	3.8	3.0	2	2909	Y/D	6.9 - 6.7	45	84.0	85.6	85.6	0.67	0.79	0.85	0.0098	65

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	65	10	20	IP68	H	A	40	4-14

SLV.65.80.40.(A).(EX).2.--.C



Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N	I_{start}	η_{motor} [%]			Cos φ			Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
							[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
51E	3 x 220-240 V D	4.9	4.0	2	2930	Y/D	14.5 - 13.7	149	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68
50B	3 x 400-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68
50D	3 x 380-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68
51D	3 x 380-415 V D	4.9	4.0	2	2930	Y/D	8.4 - 7.9	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68

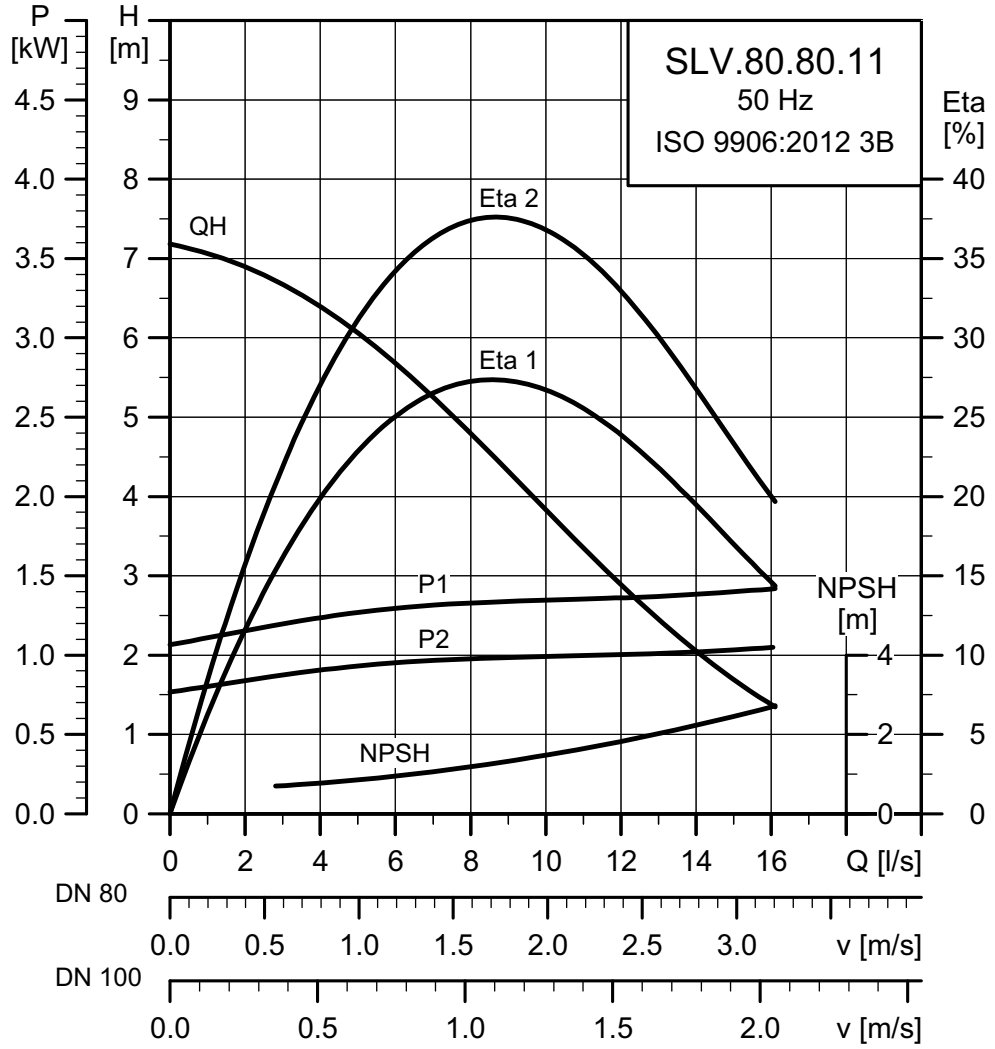
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	65	10	20	IP68	H	A	40	4-14

SLV.80.80

SLV.80.80.11.(A).(EX).4.--.C



Electrical data

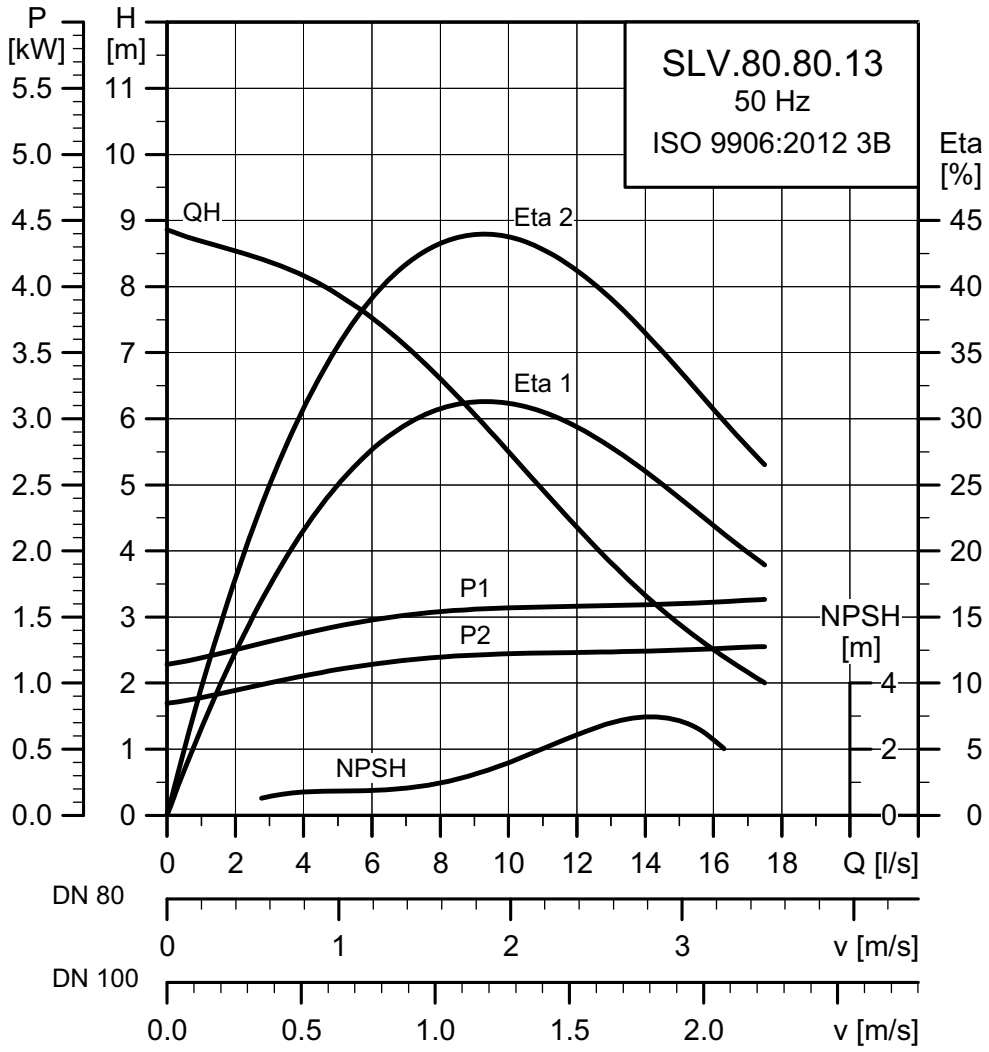
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	1.4	1.1	4	1452	DOL	5.4 - 5.3	33	80.2	82.8	83.3	0.49	0.62	0.71	0.0166	29
50B	3 x 400-415 V Y	1.4	1.1	4	1452	DOL	3.3 - 3.1	19	80.2	82.8	83.3	0.49	0.62	0.71	0.0166	29
50D	3 x 380-415 V Y	1.4	1.1	4	1452	DOL	3.3 - 3.1	19	80.2	82.8	83.3	0.49	0.62	0.71	0.0166	29

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.80.13.(A).(EX).4.--.C



Electrical data

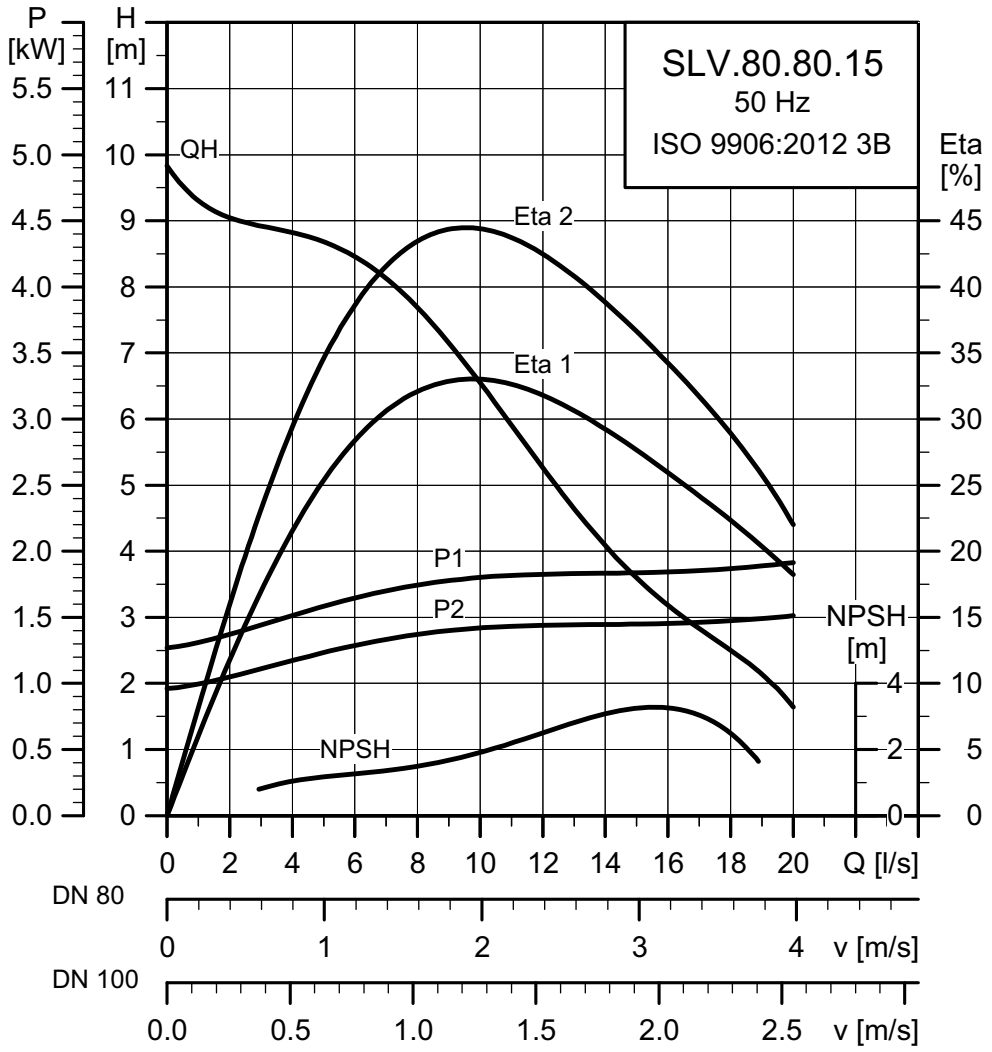
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	1.8	1.3	4	1452	DOL	6.9 - 6.8	49	81.1	83.8	84.2	0.45	0.59	0.68	0.035	40
50B	3 x 400-415 V Y	1.8	1.3	4	1452	DOL	4.0 - 3.9	29	81.1	83.8	84.2	0.45	0.59	0.68	0.035	40
50D	3 x 380-415 V Y	1.8	1.3	4	1452	DOL	4.0 - 3.9	29	81.1	83.8	84.2	0.45	0.59	0.68	0.035	40

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.80.15.(A).(EX).4.--.C



Electrical data

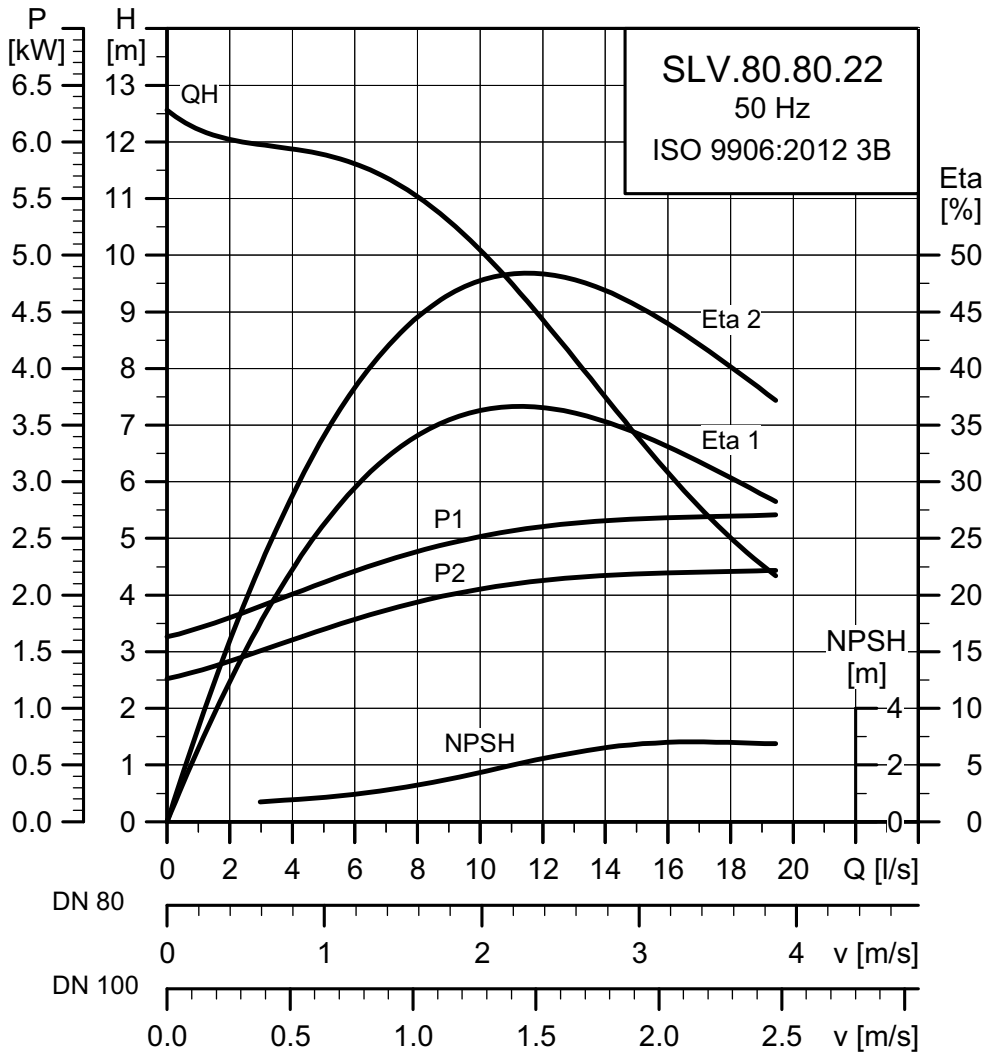
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	1.9	1.5	4	1452	DOL	7.1 - 7.2	49	81.8	83.9	84.3	0.48	0.61	0.70	0.035	26
50B	3 x 400-415 V Y	1.9	1.5	4	1452	DOL	4.1 - 4.2	29	81.8	83.9	84.3	0.48	0.61	0.70	0.035	26
50D	3 x 380-415 V Y	1.9	1.5	4	1452	DOL	4.1 - 4.2	29	81.8	83.9	84.3	0.48	0.61	0.70	0.035	26

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.80.22.(A).(EX).4.--.C



Electrical data

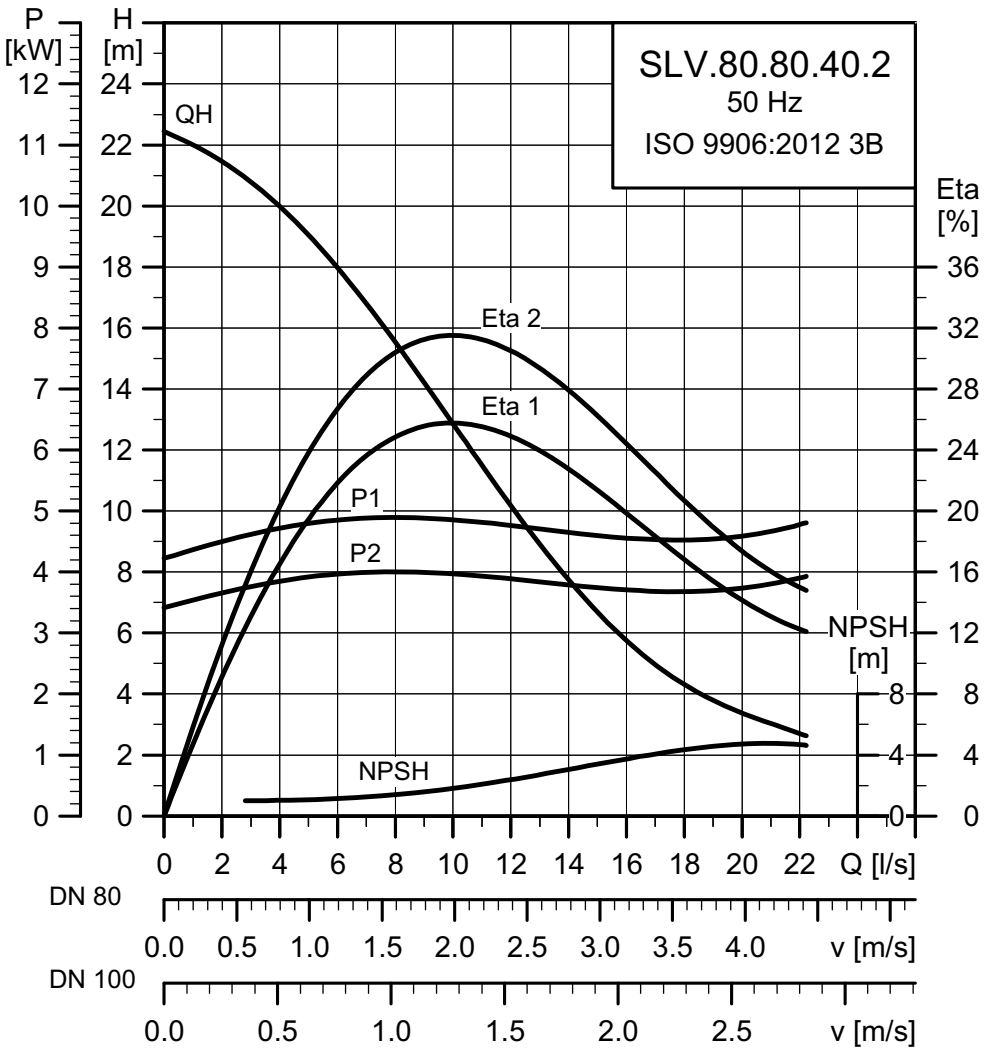
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	2.7	2.2	4	1462	DOL	9.7 - 9.9	66	82.9	85.4	85.7	0.52	0.65	0.73	0.0284	41
50B	3 x 400-415 V Y	2.7	2.2	4	1462	DOL	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0284	41
50D	3 x 380-415 V Y	2.7	2.2	4	1462	DOL	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0284	41
51D	3 x 380-415 V D	2.7	2.2	4	1462	Y/D	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0284	41

* For low-high voltage variants

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.80.40.(A).(EX).2.--.C



TM04 3541 1314

Electrical data

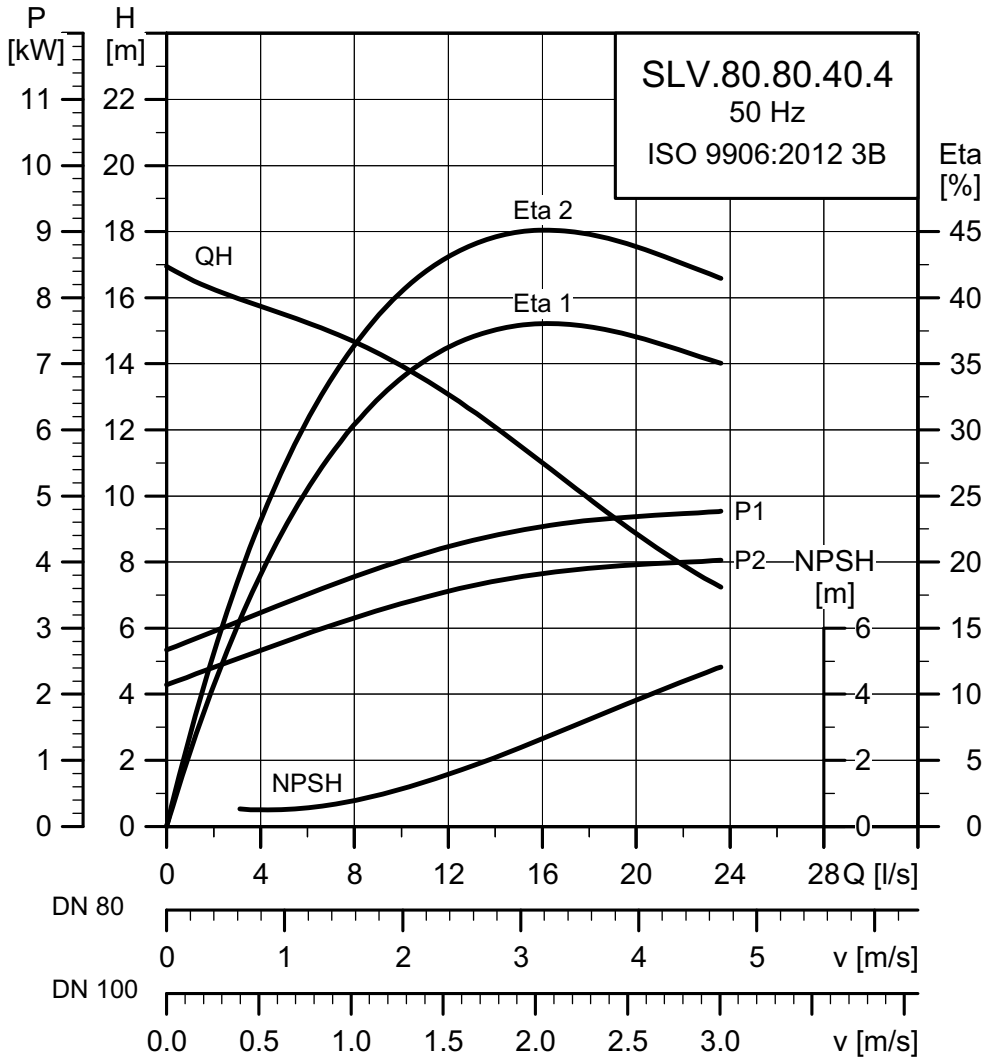
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.9	4.0	2	2930	Y/D	14.5 - 13.7	149	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68
50B	3 x 400-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68
50D	3 x 380-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68
51D	3 x 380-415 V D	4.9	4.0	2	2930	Y/D	8.4 - 7.9	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0135	68

* For low-high voltage variants

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.80.40.(A).(EX).4.--.C



TM04 3540 1314

Electrical data

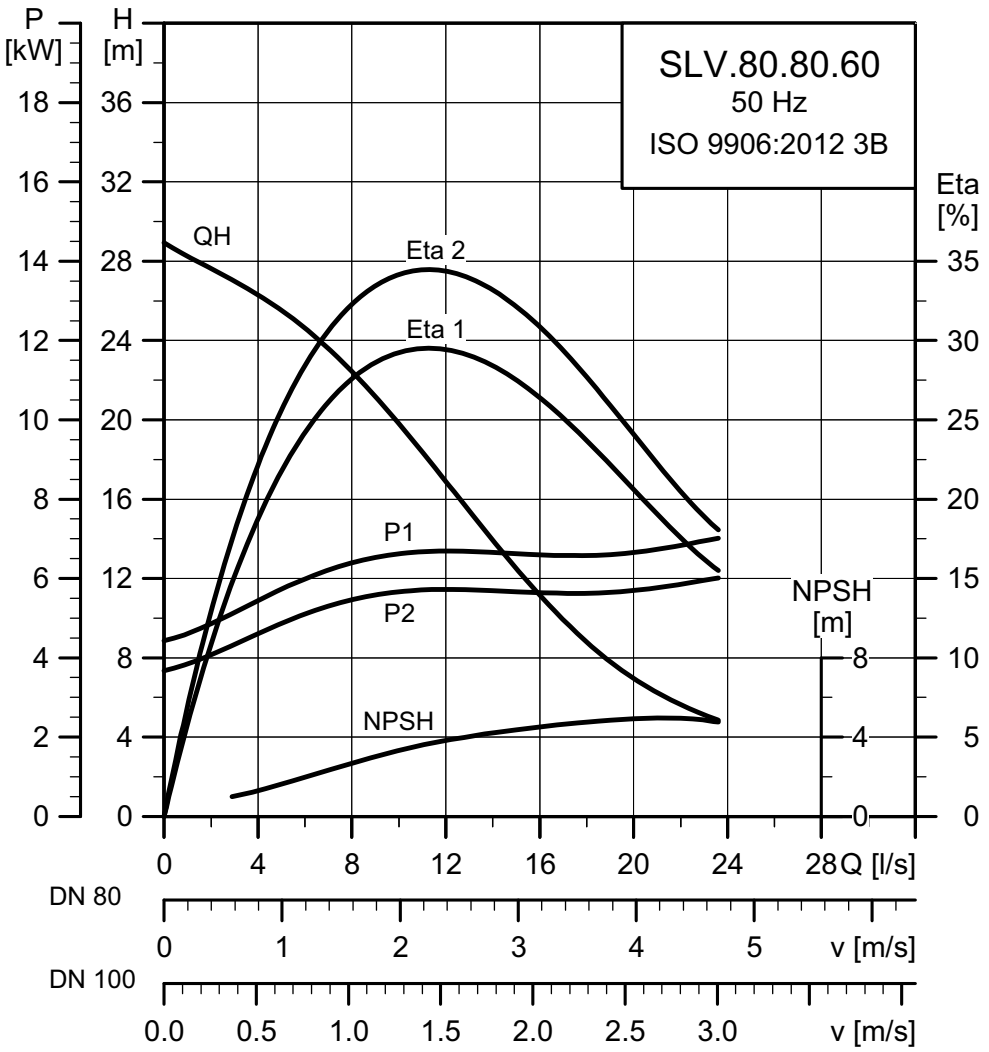
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.8	4.0	4	1464	Y/D	17.4 - 17.5	113	85.0	87.1	87.4	0.50	0.63	0.72	0.0551	98
50B	3 x 400-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.0551	98
50D	3 x 380-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.0551	98
51D	3 x 380-415 V D	4.8	4.0	4	1464	Y/D	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.0551	98

* For low-high voltage variants

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.80.60.(A).(EX).2.--.C



Electrical data

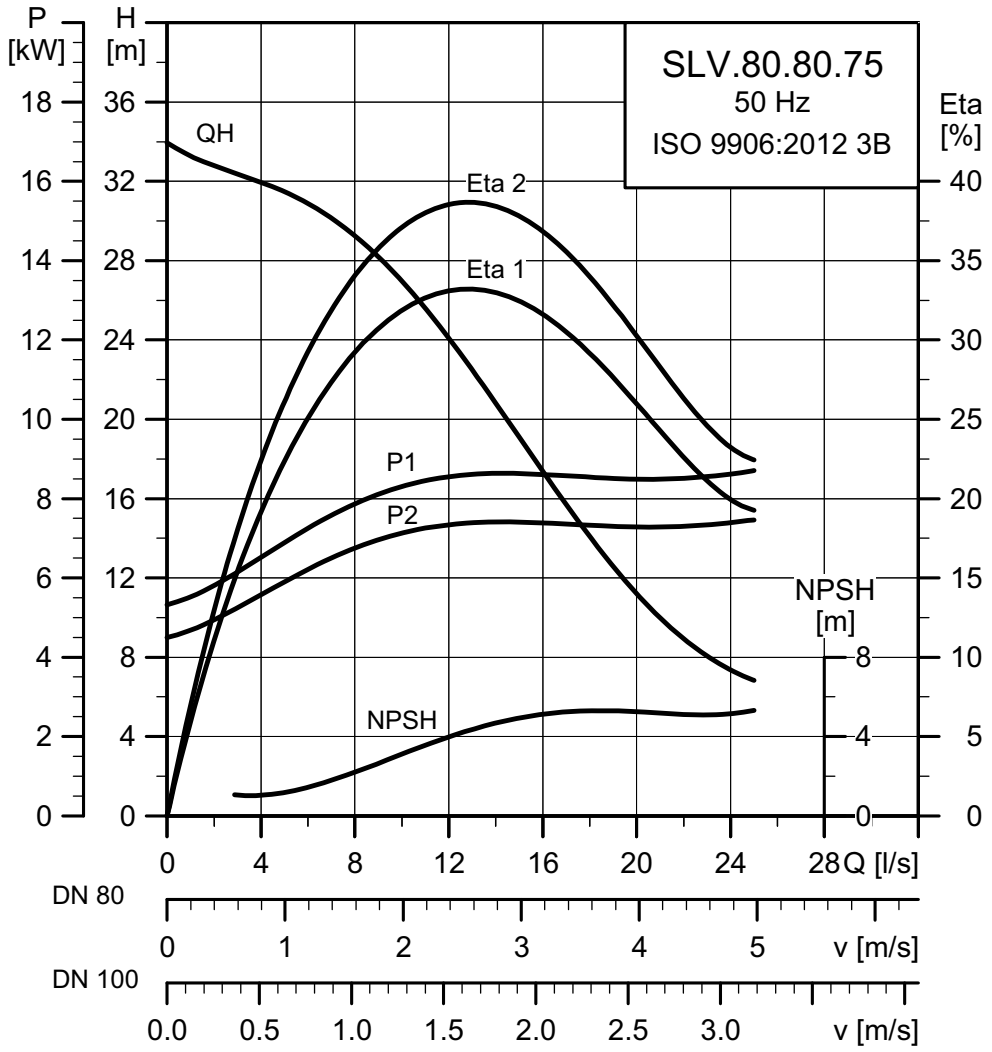
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	7.1	6.0	2	2940	Y/D	23.6 - 19.6	203	89.9	90.0	90.1	0.65	0.77	0.83	0.0179	97
50B	3 x 400-415 V D	7.1	6.0	2	2940	DOL	14.6 - 13.6	117	89.9	90.0	90.1	0.65	0.77	0.83	0.0179	97
50D	3 x 380-415 V D	7.1	6.0	2	2940	DOL	14.6 - 13.6	117	89.9	90.0	90.1	0.65	0.77	0.83	0.0179	97
51D	3 x 380-415 V D	7.1	6.0	2	2940	Y/D	13.6 - 11.3	117	89.9	90.0	90.1	0.65	0.77	0.83	0.0179	97

* For low-high voltage variants

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.80.75.(A).(EX).2.--.C



Electrical data

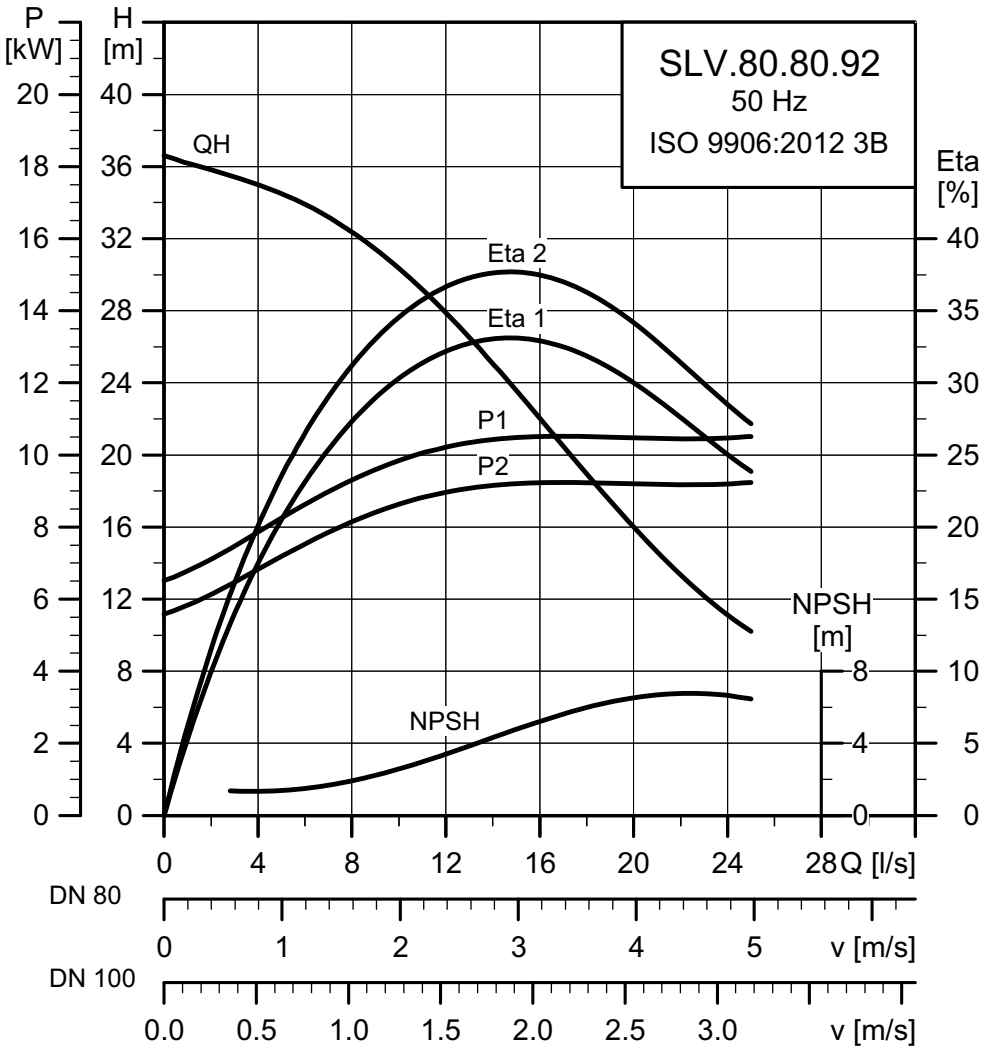
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	8.8	7.5	2	2921	Y/D	26.4 - 25.1	203	90.0	90.1	89.2	0.72	0.81	0.86	0.0179	97
50B	3 x 400-415 V D	8.8	7.5	2	2921	DOL	17.6 - 15.2	117	90.0	90.1	89.2	0.72	0.81	0.86	0.0179	97
50D	3 x 380-415 V D	8.8	7.5	2	2921	DOL	17.6 - 15.2	117	90.0	90.1	89.2	0.72	0.81	0.86	0.0179	97
51D	3 x 380-415 V D	8.8	7.5	2	2921	Y/D	15.2 - 14.5	117	90.0	90.1	89.2	0.72	0.81	0.86	0.0179	97

* For low-high voltage variants

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.80.92.(A).(EX).2.--.C



TM04 3544 1314

Electrical data

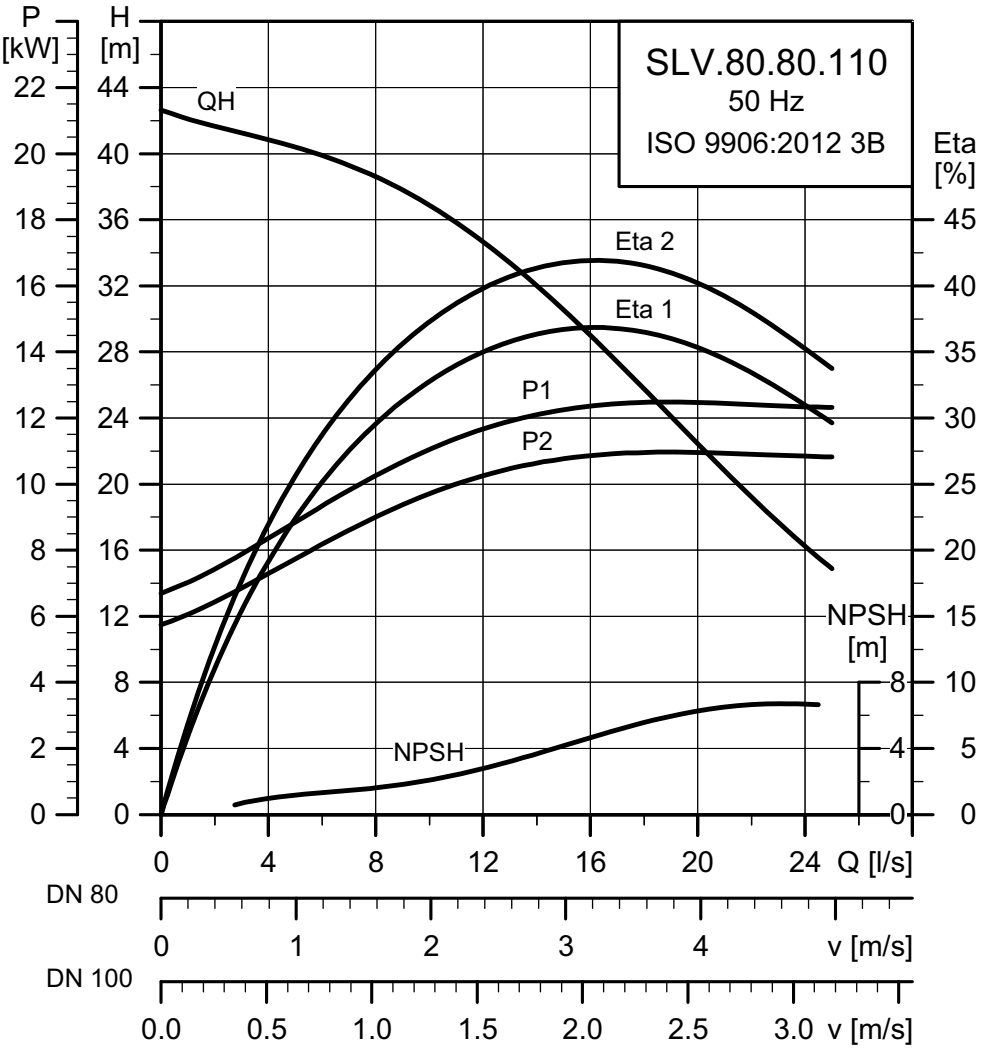
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	10.5	9.2	2	2960	Y/D	33.3 - 29.1	277	89.5	90.8	90.7	0.68	0.80	0.84	0.034	123
50B	3 x 400-415 V D	10.5	9.2	2	2960	DOL	21.0 - 19.2	160	89.5	90.8	90.7	0.68	0.80	0.84	0.034	123
50D	3 x 380-415 V D	10.5	9.2	2	2960	DOL	21.0 - 19.2	160	89.5	90.8	90.7	0.68	0.80	0.84	0.034	123
51D	3 x 380-415 V D	10.5	9.2	2	2960	Y/D	19.2 - 16.8	160	89.5	90.8	90.7	0.68	0.80	0.84	0.034	123

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.80.110.(A).(EX).2.--.C



TM04 3545 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	12.5	11.0	2	2947	Y/D	38.4 - 36.5	277	90.6	90.9	90.5	0.70	0.80	0.84	0.034	123
50B	3 x 400-415 V D	12.5	11.0	2	2947	DOL	25.6 - 22.2	160	90.6	90.9	90.5	0.70	0.80	0.84	0.034	123
50D	3 x 380-415 V D	12.5	11.0	2	2947	DOL	25.6 - 22.2	160	90.6	90.9	90.5	0.70	0.80	0.84	0.034	123
51D	3 x 380-415 V D	12.5	11.0	2	2947	Y/D	22.2 - 21.1	160	90.6	90.9	90.5	0.70	0.80	0.84	0.034	123

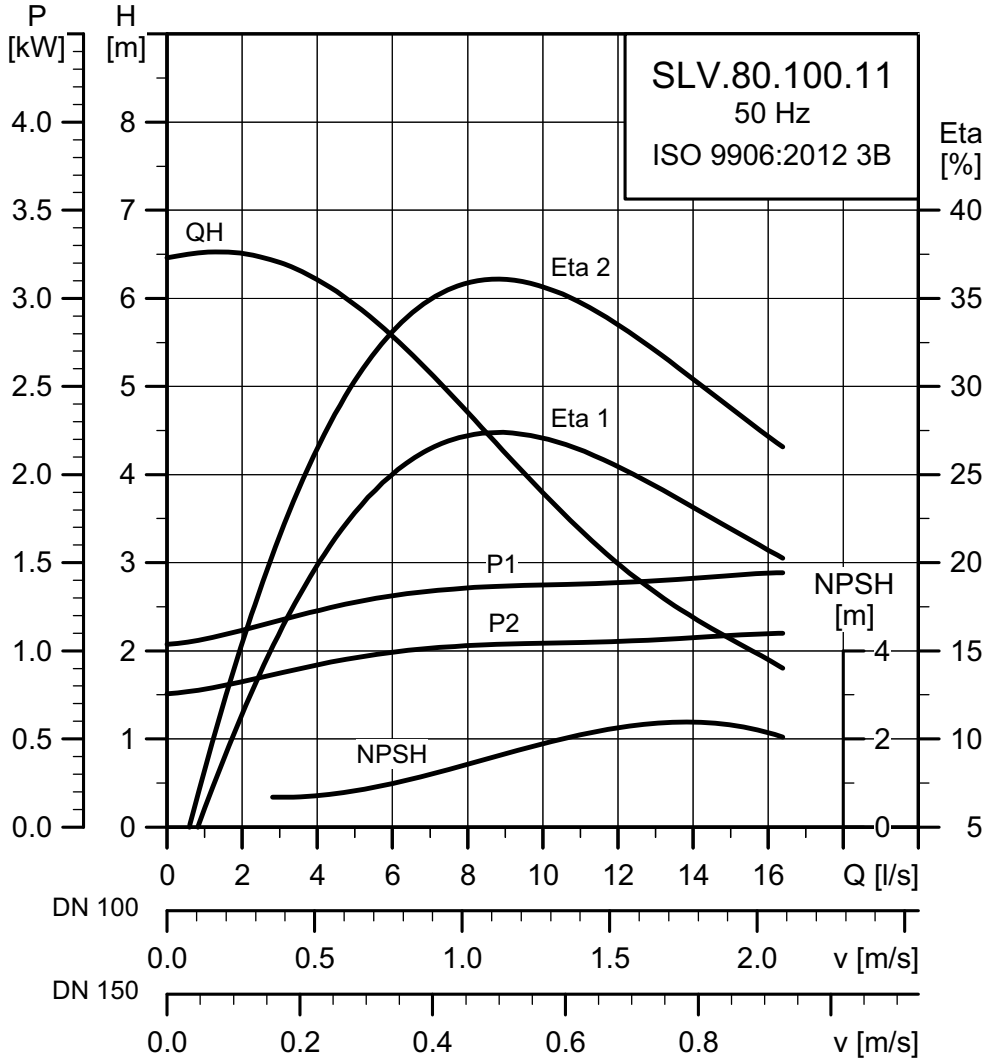
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100

SLV.80.100.11.(A).(EX).4.--.C



TM04 3550 1314

Electrical data

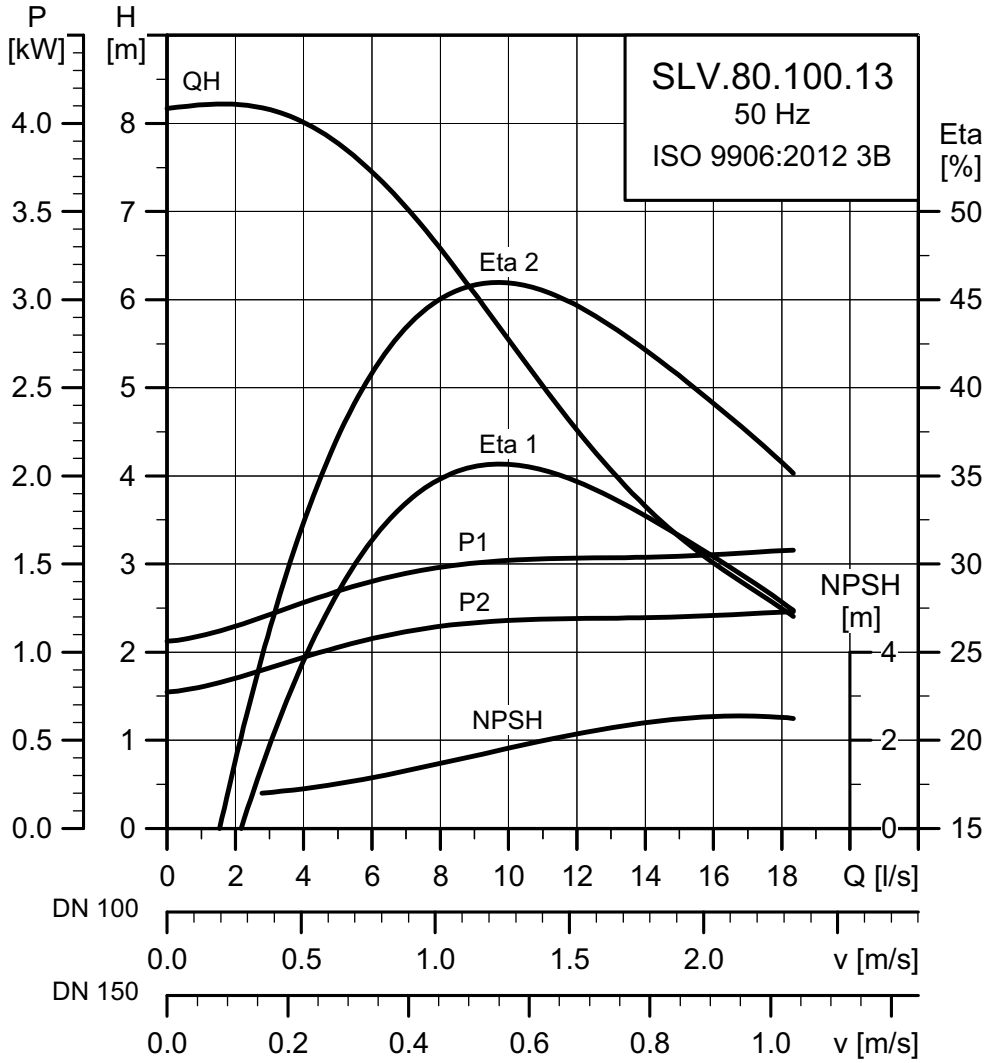
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	1.4	1.1	4	1452	DOL	5.4 - 5.3	33	80.2	82.8	83.3	0.49	0.62	0.71	0.016	29
50B	3 x 400-415 V Y	1.4	1.1	4	1452	DOL	3.3 - 3.1	19	80.2	82.8	83.3	0.49	0.62	0.71	0.016	29
50D	3 x 380-415 V Y	1.4	1.1	4	1452	DOL	3.3 - 3.1	19	80.2	82.8	83.3	0.49	0.62	0.71	0.016	29

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100.13.(A).(EX).4.--.C



TM04 3551 1314

Electrical data

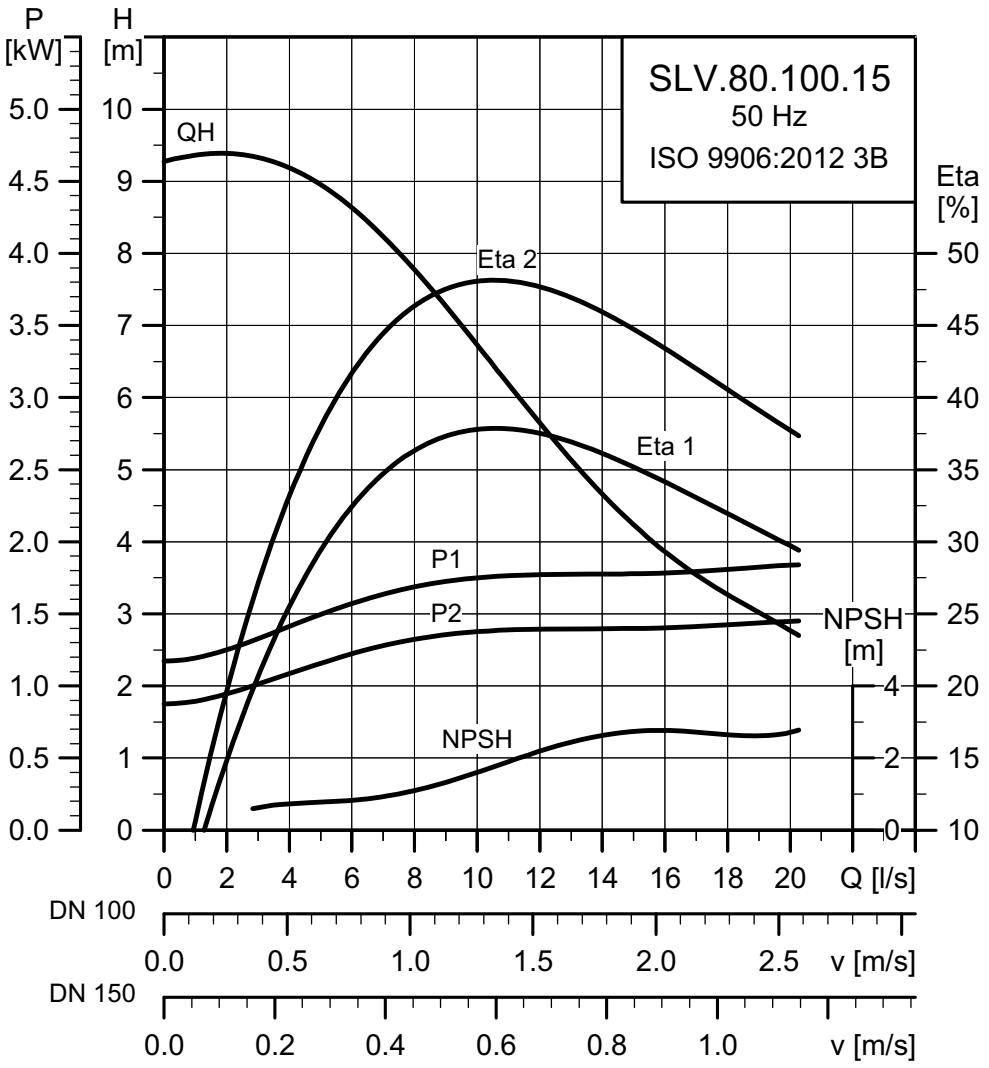
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N	I_{start}	η_{motor} [%]			Cos φ			Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
							[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
50E	3 x 220-240 V D	1.8	1.3	4	1460	DOL	6.9 - 6.8	49	81.1	83.8	84.2	0.45	0.59	0.68	0.0215	40
50B	3 x 400-415 V Y	1.8	1.3	4	1460	DOL	4.0 - 3.9	29	81.1	83.8	84.2	0.45	0.59	0.68	0.0215	40
50D	3 x 380-415 V Y	1.8	1.3	4	1460	DOL	4.0 - 3.9	29	81.1	83.8	84.2	0.45	0.59	0.68	0.0215	40

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100.15.(A).(EX).4.--.C



TM04 3552 1314

Electrical data

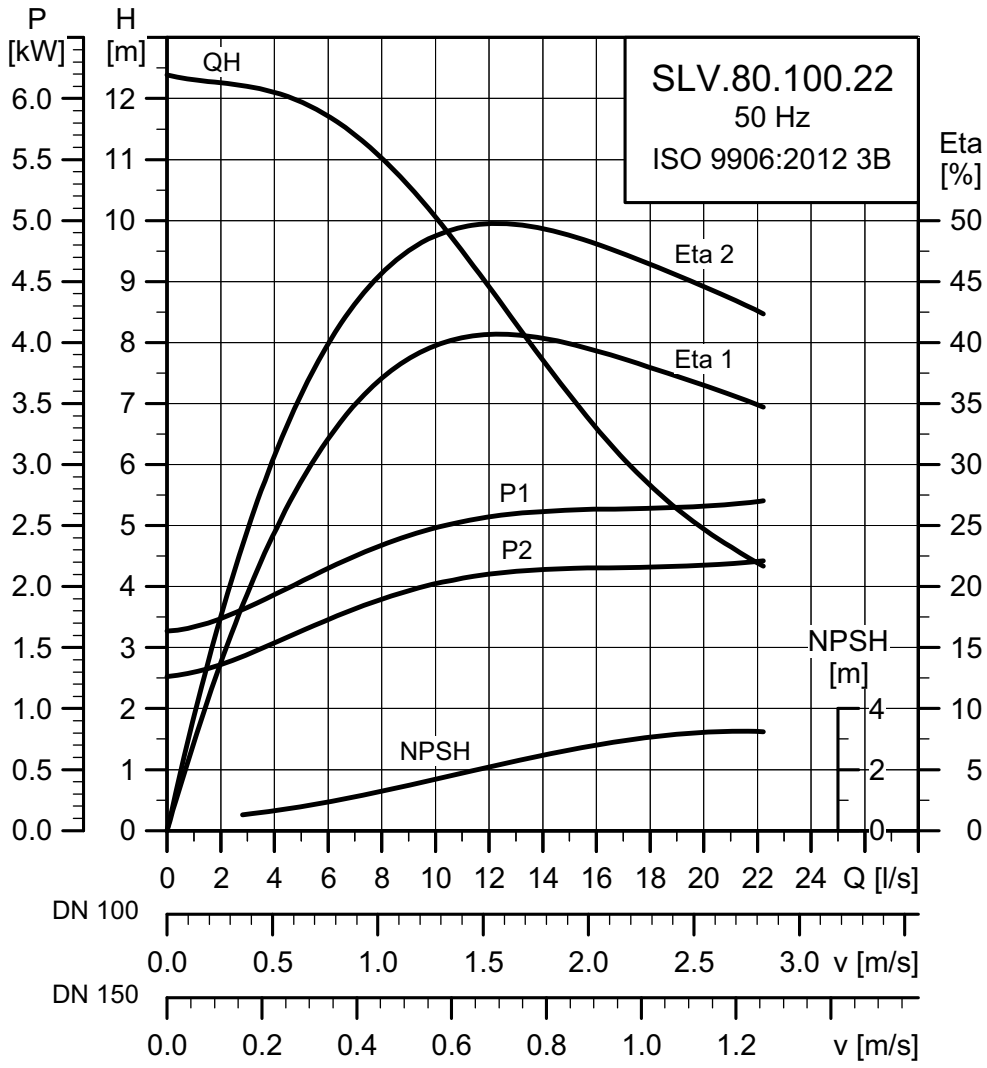
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	1.9	1.5	4	1452	DOL	7.1 - 7.2	49	81.8	83.9	84.3	0.48	0.61	0.70	0.0215	40
50B	3 x 400-415 V Y	1.9	1.5	4	1452	DOL	4.1 - 4.2	29	81.8	83.9	84.3	0.48	0.61	0.70	0.0215	40
50D	3 x 380-415 V Y	1.9	1.5	4	1452	DOL	4.1 - 4.2	29	81.8	83.9	84.3	0.48	0.61	0.70	0.0215	40

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100.22.(A).(EX).4.--.C



TM04 3553 1314

Electrical data

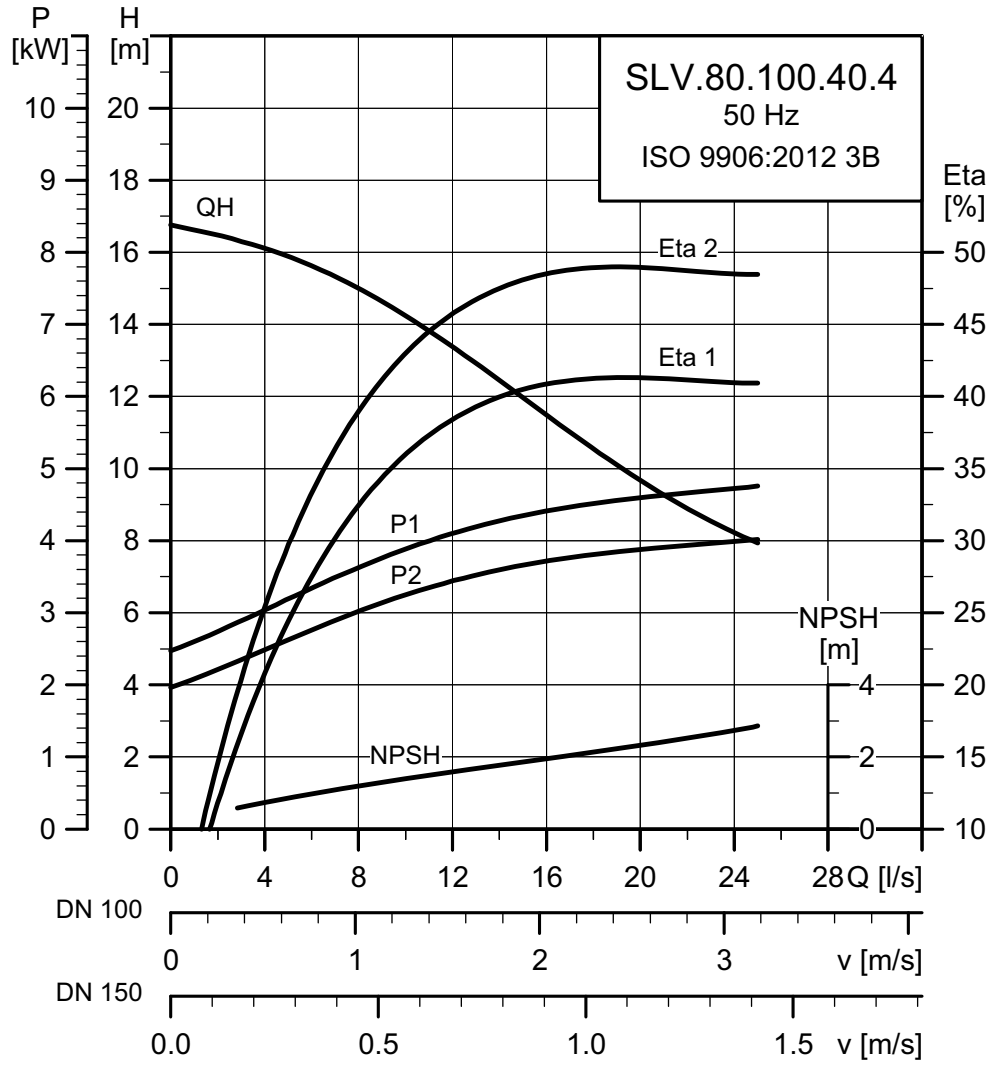
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	2.7	2.2	4	1462	DOL	9.7 - 9.9	66	82.9	85.4	85.7	0.52	0.65	0.73	0.0284	41
50B	3 x 400-415 V Y	2.7	2.2	4	1462	DOL	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0284	41
50D	3 x 380-415 V Y	2.7	2.2	4	1462	DOL	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0284	41
51D	3 x 380-415 V D	2.7	2.2	4	1462	Y/D	5.6 - 5.7	38	82.9	85.4	85.7	0.52	0.65	0.73	0.0284	41

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100.40.(A).(EX).2.--.C



TM04 3554 1314

Electrical data

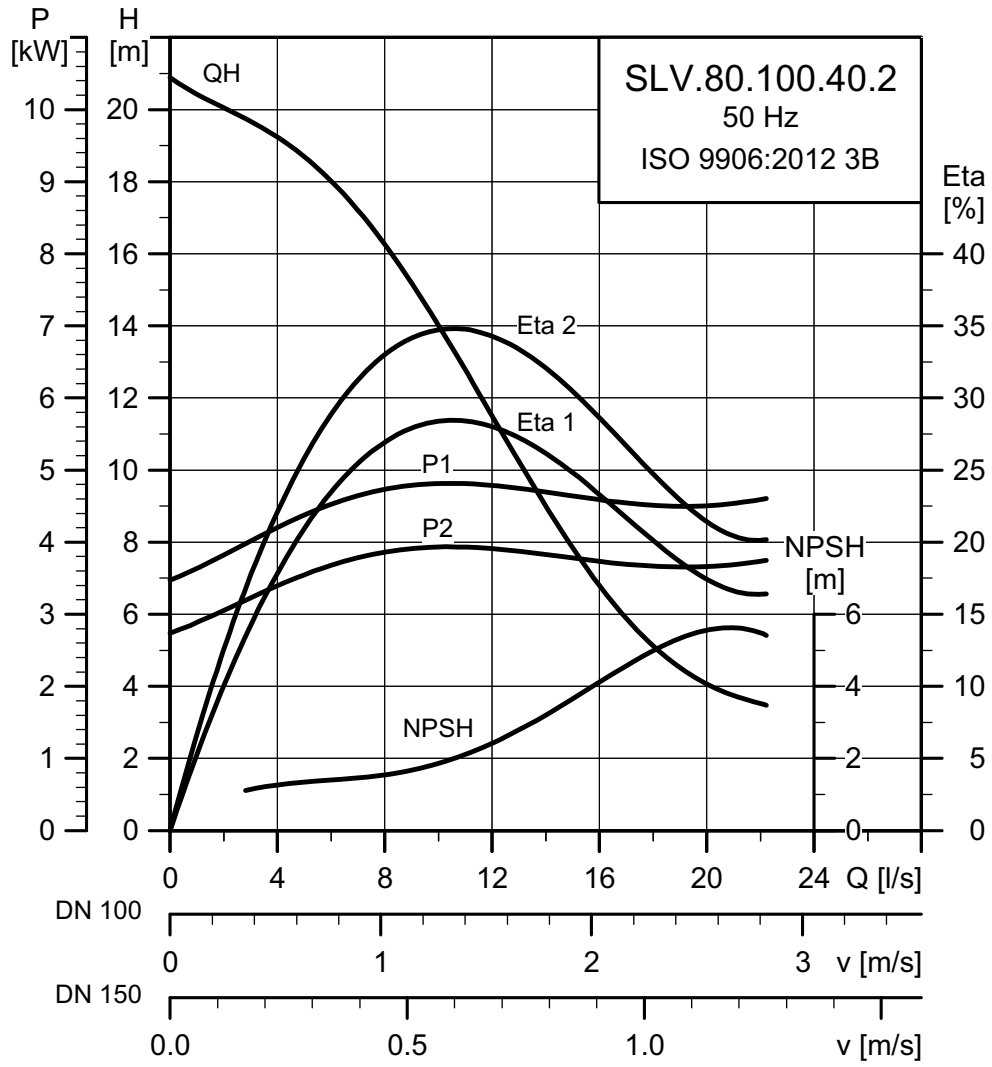
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.9	4.0	2	2930	Y/D	14.5 - 13.7	149	83.2	85.3	86.2	0.77	0.83	0.88	0.0138	68
50B	3 x 400-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0138	68
50D	3 x 380-415 V D	4.9	4.0	2	2930	DOL	9.5 - 8.4	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0138	68
51D	3 x 380-415 V D	4.9	4.0	2	2930	Y/D	8.4 - 7.9	86	83.2	85.3	86.2	0.77	0.83	0.88	0.0138	68

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100.40.(A).(EX).4.--.C



TM04 3555 1314

Electrical data

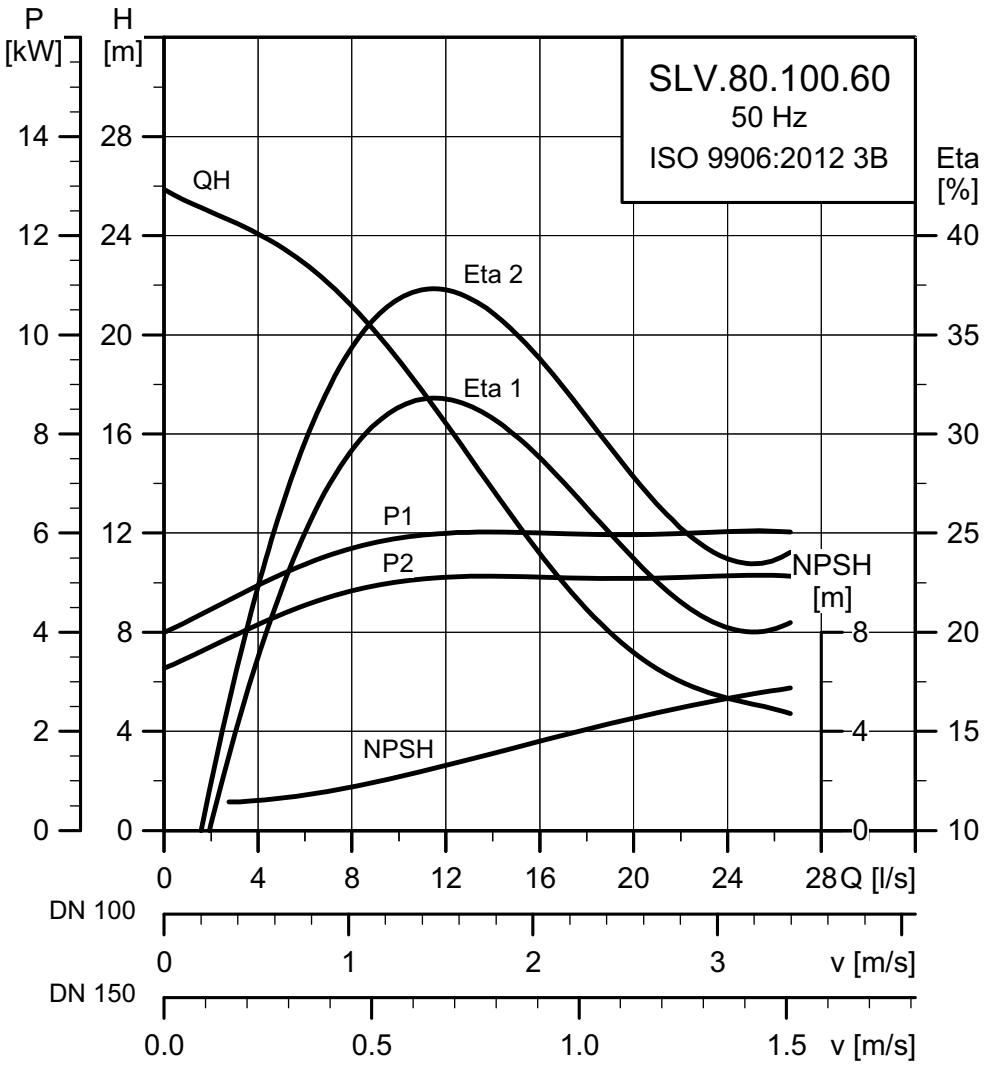
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.8	4.0	4	1464	Y/D	17.4 - 17.5	113	85.0	87.1	87.4	0.50	0.63	0.72	0.0586	98
50B	3 x 400-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.0586	98
50D	3 x 380-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.0586	98
51D	3 x 380-415 V D	4.8	4.0	4	1464	Y/D	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.0586	98

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100.60.(A).(EX).2.--.C



TM04 3556 1314

Electrical data

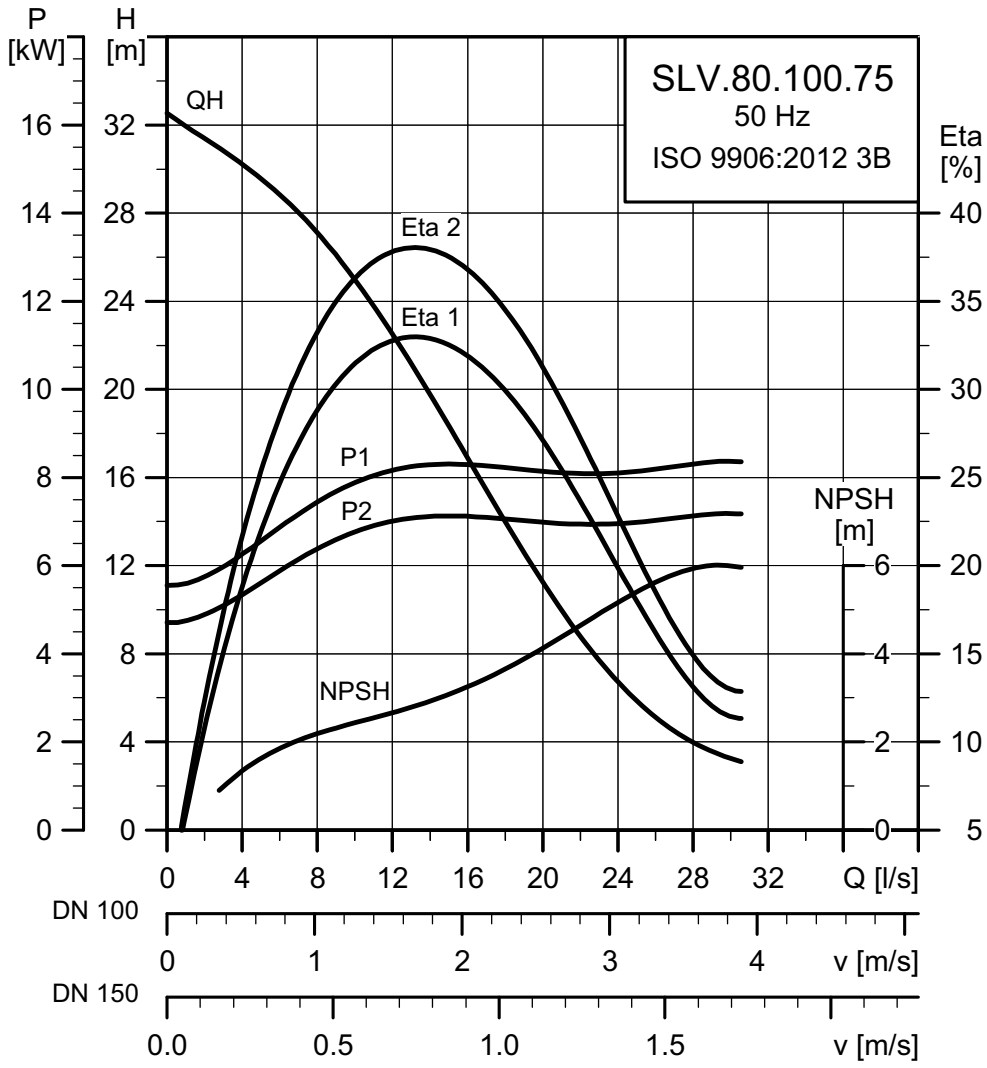
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	7.1	6.0	2	2940	Y/D	23.6 - 19.6	203	89.9	90.0	90.1	0.65	0.77	0.83	0.0204	97
50B	3 x 400-415 V D	7.1	6.0	2	2940	DOL	14.6 - 13.6	117	89.9	90.0	90.1	0.65	0.77	0.83	0.0204	97
50D	3 x 380-415 V D	7.1	6.0	2	2940	DOL	14.6 - 13.6	117	89.9	90.0	90.1	0.65	0.77	0.83	0.0204	97
51D	3 x 380-415 V D	7.1	6.0	2	2940	Y/D	13.6 - 11.3	117	89.9	90.0	90.1	0.65	0.77	0.83	0.0204	97

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100.75.(A).(EX).2.--.C



TM04 3557 1314

Electrical data

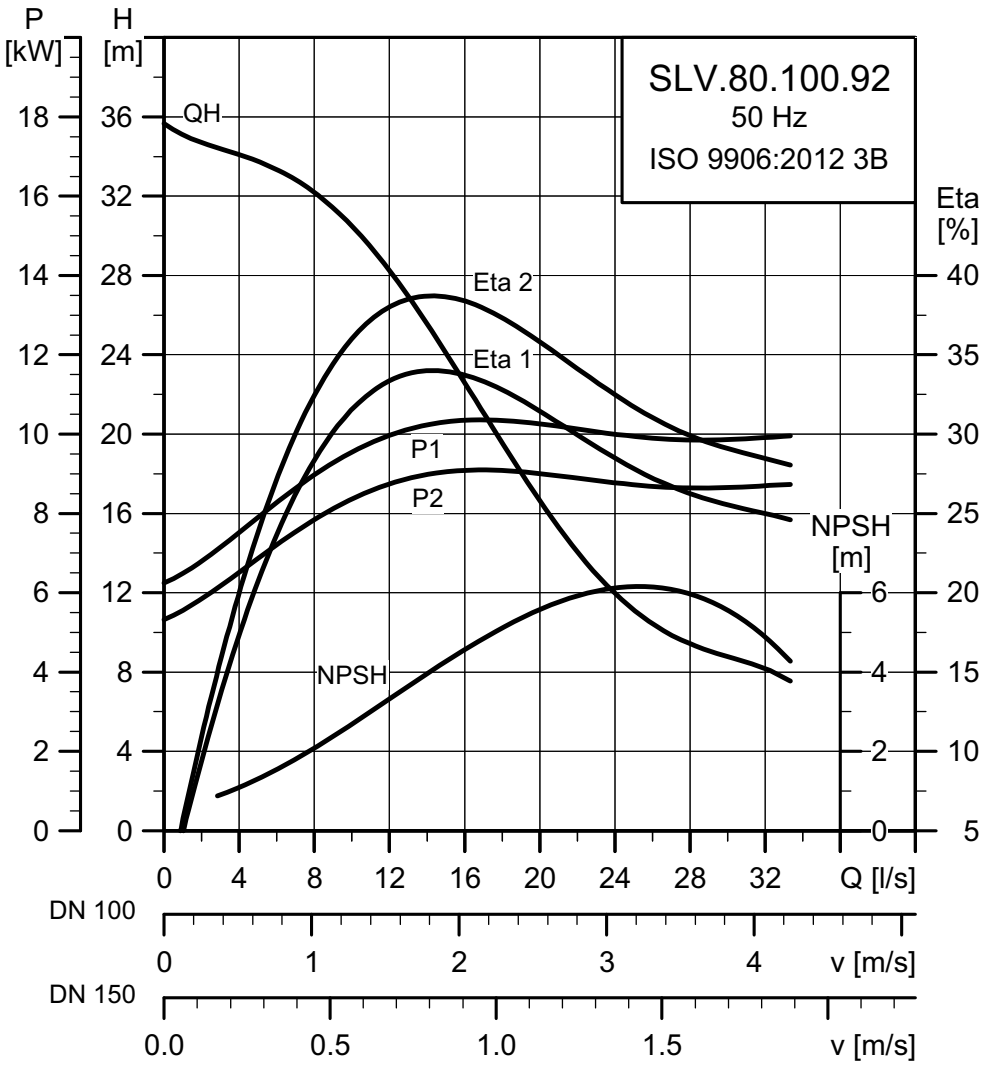
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	8.8	7.5	2	2921	Y/D	26.4 - 25.1	203	90.0	90.1	89.2	0.72	0.81	0.86	0.0204	97
50B	3 x 400-415 V D	8.8	7.5	2	2921	DOL	17.6 - 15.2	117	90.0	90.1	89.2	0.72	0.81	0.86	0.0204	97
50D	3 x 380-415 V D	8.8	7.5	2	2921	DOL	17.6 - 15.2	117	90.0	90.1	89.2	0.72	0.81	0.86	0.0204	97
51D	3 x 380-415 V D	8.8	7.5	2	2921	Y/D	15.2 - 14.5	117	90.0	90.1	89.2	0.72	0.81	0.86	0.0204	97

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100.92.(A).(EX).2.--.C



Electrical data

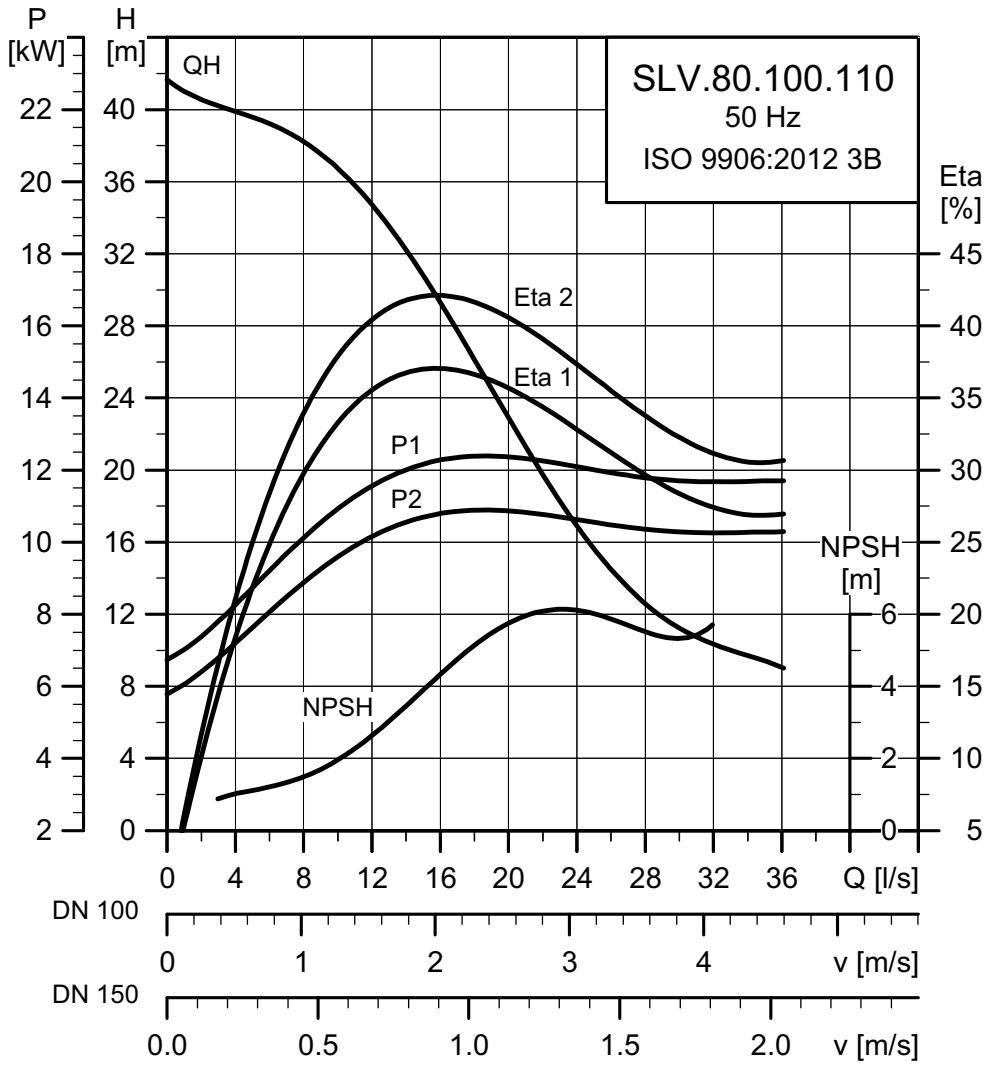
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	10.5	9.2	2	2960	Y/D	33.3 - 29.1	277	89.5	90.8	90.7	0.68	0.80	0.84	0.038	123
50B	3 x 400-415 V D	10.5	9.2	2	2960	DOL	21.0 - 19.2	160	89.5	90.8	90.7	0.68	0.80	0.84	0.038	123
50D	3 x 380-415 V D	10.5	9.2	2	2960	DOL	21.0 - 19.2	160	89.5	90.8	90.7	0.68	0.80	0.84	0.038	123
51D	3 x 380-415 V D	10.5	9.2	2	2960	Y/D	19.2 - 16.8	160	89.5	90.8	90.7	0.68	0.80	0.84	0.038	123

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.80.100.110.(A).(EX).2.--.C



TM04 3559 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	12.5	11.0	2	2947	Y/D	38.4 - 36.5	277	90.6	90.9	90.5	0.70	0.80	0.84	0.038	123
50B	3 x 400-415 V D	12.5	11.0	2	2947	DOL	25.6 - 22.2	160	90.6	90.9	90.5	0.70	0.80	0.84	0.038	123
50D	3 x 380-415 V D	12.5	11.0	2	2947	DOL	25.6 - 22.2	160	90.6	90.9	90.5	0.70	0.80	0.84	0.038	123
51D	3 x 380-415 V D	12.5	11.0	2	2947	Y/D	22.2 - 21.1	160	90.6	90.9	90.5	0.70	0.80	0.84	0.038	123

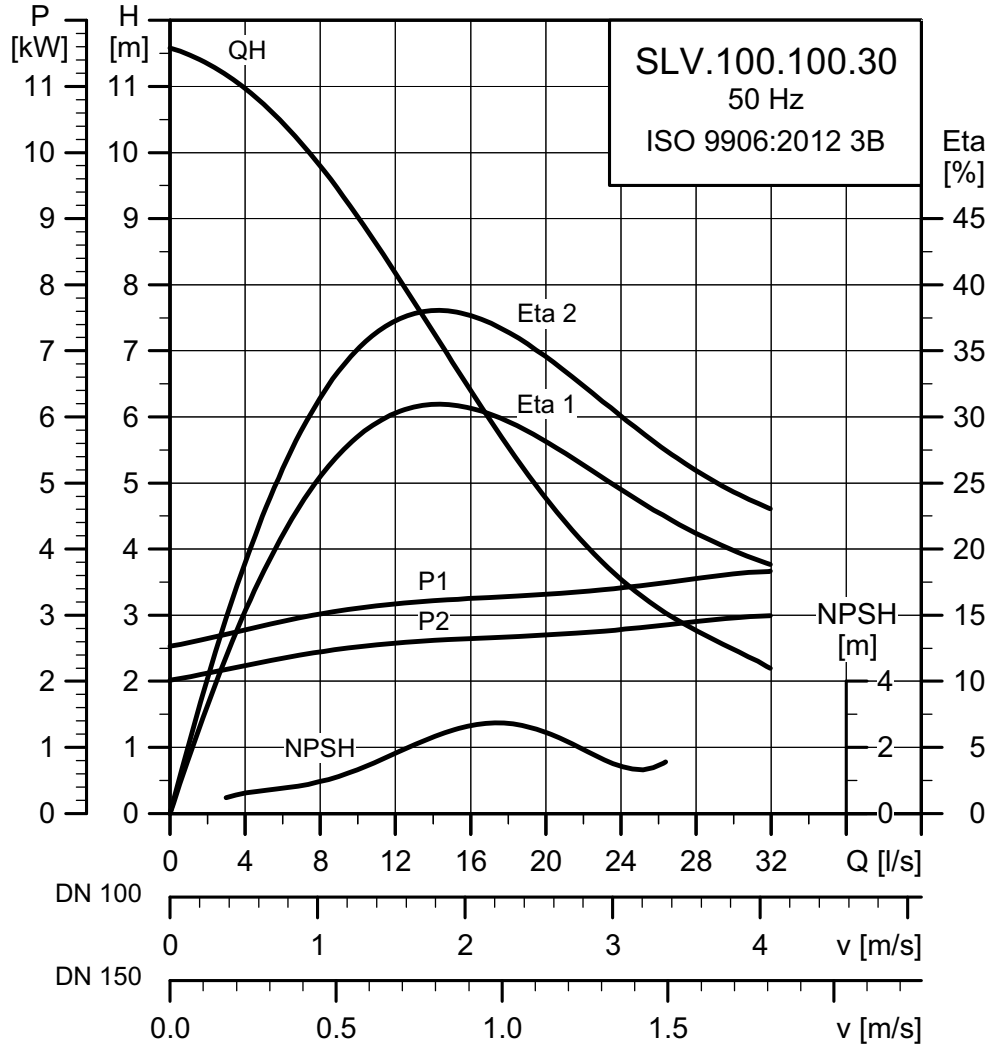
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	80	10	20	IP68	H	A	40	4-14

SLV.100.100

SLV.100.100.30.(A).(EX).4.--.C



Electrical data

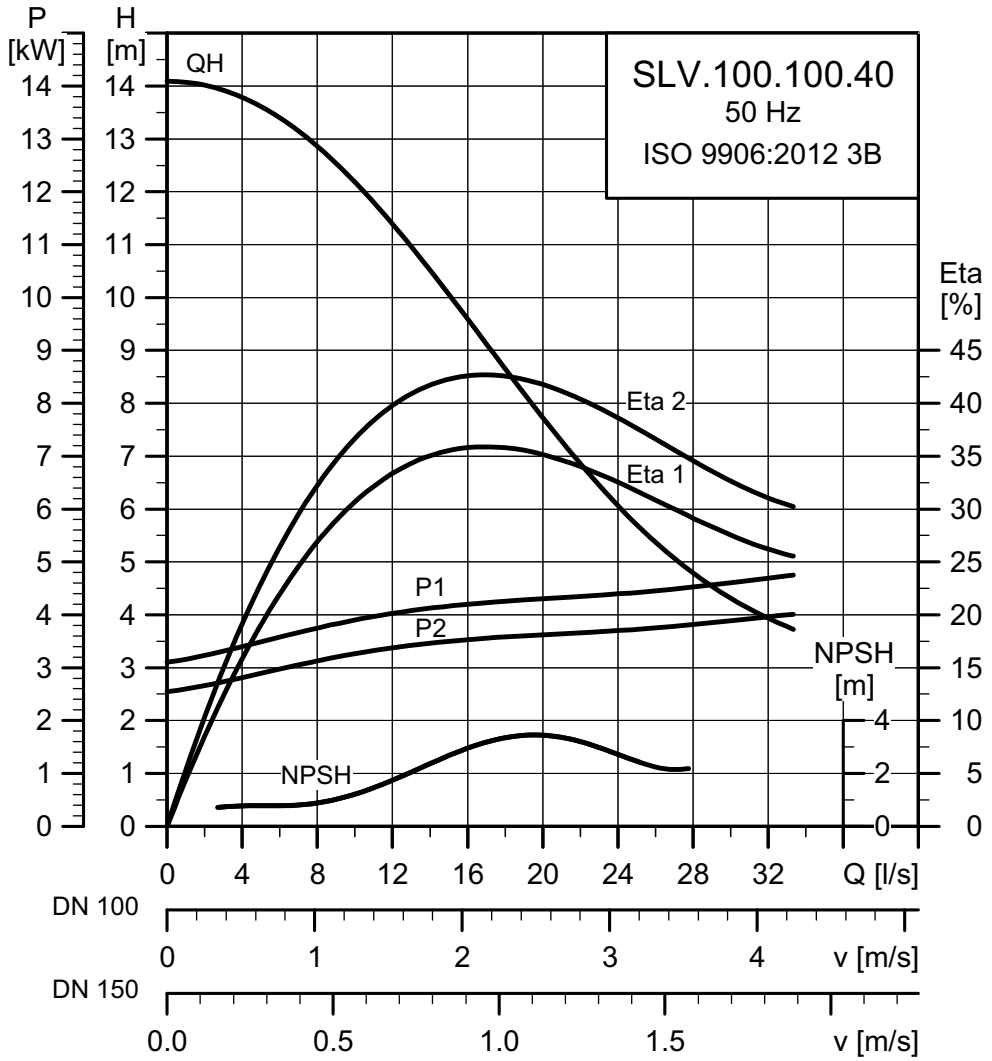
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
50E	3 x 220-240 V D	3.7	3.0	4	1453	DOL	13.8 - 12.1	78	83.6	85.6	85.7	0.57	0.69	0.77	0.0527	64
50D	3 x 380-415 V Y	3.7	3.0	4	1453	DOL	8.0 - 7.0	45	83.6	85.6	85.7	0.57	0.69	0.77	0.0527	64
50B	3 x 400-415 V Y	3.7	3.0	4	1453	DOL	8.0 - 7.0	45	83.6	85.6	85.7	0.57	0.69	0.77	0.0527	64
51D	3 x 380-415 V D	3.7	3.0	4	1453	Y/D	8.0 - 7.0	45	83.6	85.6	85.7	0.57	0.69	0.77	0.0527	64

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	100	10	20	IP68	H	A	40	4-14

SLV.100.100.40.(A).(EX).4.--.C



TM04 3547 1314

Electrical data

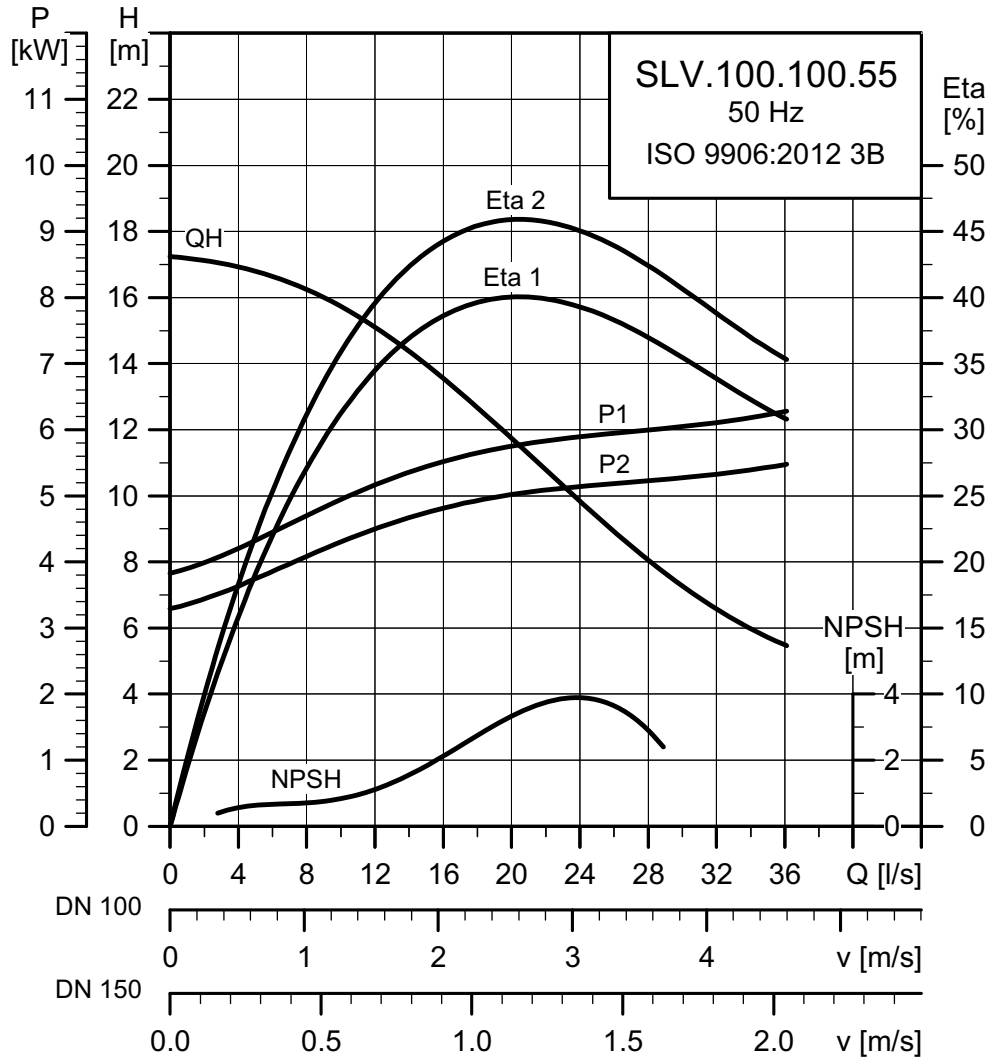
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	4.8	4.0	4	1464	Y/D	17.4 - 17.5	113	85.0	87.1	87.4	0.50	0.63	0.72	0.0551	98
50B	3 x 400-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.0551	98
50D	3 x 380-415 V D	4.8	4.0	4	1464	DOL	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.0551	98
51D	3 x 380-415 V D	4.8	4.0	4	1464	Y/D	10.7 - 10.1	65	85.0	87.1	87.4	0.50	0.63	0.72	0.0551	98

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	100	10	20	IP68	H	A	40	4-14

SLV.100.100.55.(A).(EX).4.--.C



TM04 3548 1314

Electrical data

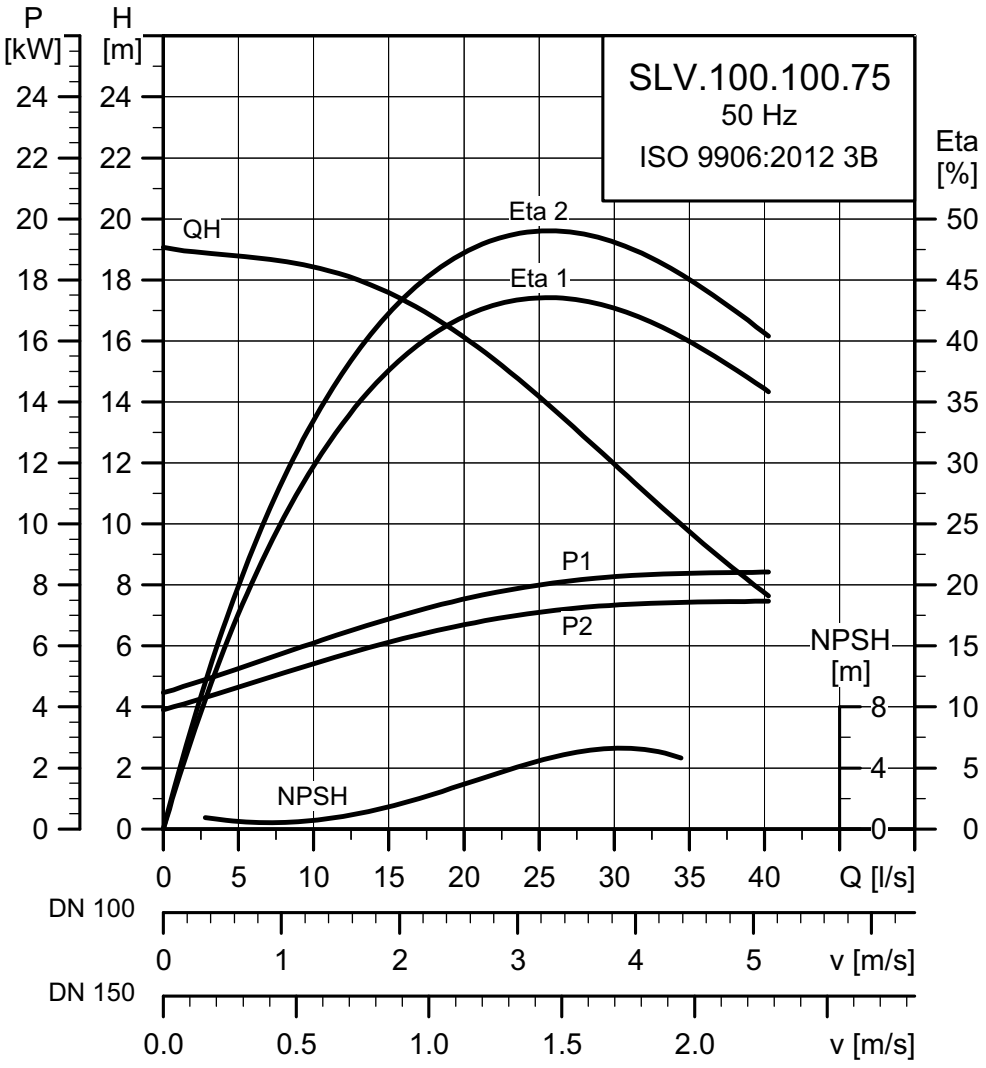
Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	6.3	5.5	4	1463	Y/D	19.4 - 18.4	141	89.0	89.6	89.1	0.70	0.80	0.85	0.0625	120
50B	3 x 400-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.0625	120
50D	3 x 380-415 V D	6.3	5.5	4	1463	DOL	12.8 - 11.2	81	89.0	89.6	89.1	0.70	0.80	0.85	0.0625	120
51D	3 x 380-415 V D	6.3	5.5	4	1463	Y/D	11.2 - 10.6	81	89.0	89.6	89.1	0.70	0.80	0.85	0.0625	120

* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	100	10	20	IP68	H	A	40	4-14

SLV.100.100.75.(A).(EX).4.--.C



TM04 3549 1314

Electrical data

Voltage code	Voltage [V]	P1 [kW]	P2 [kW]	Number of poles	Rpm	Starting method	I_N* [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm^2]	Breakdown torque M_{max} [Nm]
51E	3 x 220-240 V D	8.4	7.5	4	1462	Y/D	26.1 - 25.0	192	90.7	91.1	90.5	0.68	0.78	0.83	0.0924	177
50B	3 x 400-415 V D	8.4	7.5	4	1462	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.0924	177
50D	3 x 380-415 V D	8.4	7.5	4	1462	DOL	17.2 - 15.1	111	90.7	91.1	90.5	0.68	0.78	0.83	0.0924	177
51D	3 x 380-415 V D	8.4	7.5	4	1462	Y/D	15.1 - 14.4	111	90.7	91.1	90.5	0.68	0.78	0.83	0.0924	177

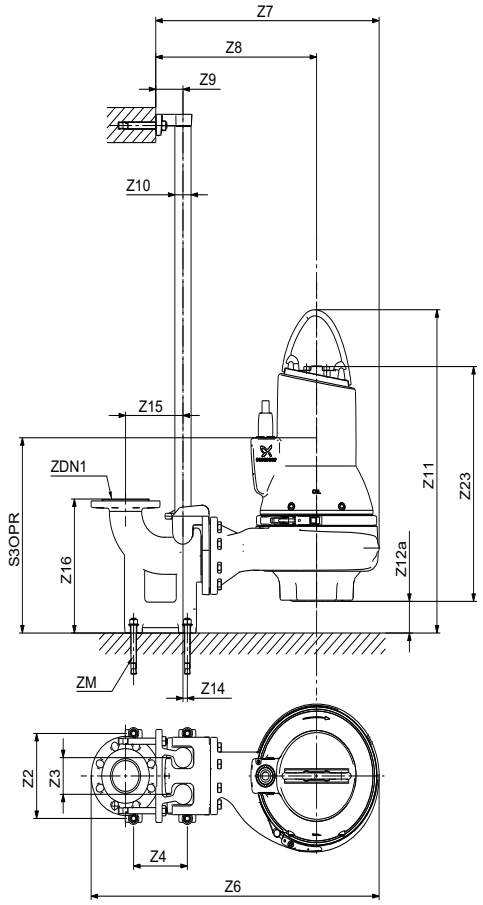
* For low-high voltage variants.

Pump data

Impeller type	Max. solids size [mm]	Pump housing pressure PN	Max. number of starts per hour	Enclosure class	Insulation class	Temperature rise class	Max. liquid temperature [°C]	pH
SuperVortex	100	10	20	IP68	H	A	40	4-14

11. Dimensions and weights

Auto-coupling installation



TM04 2794 0917

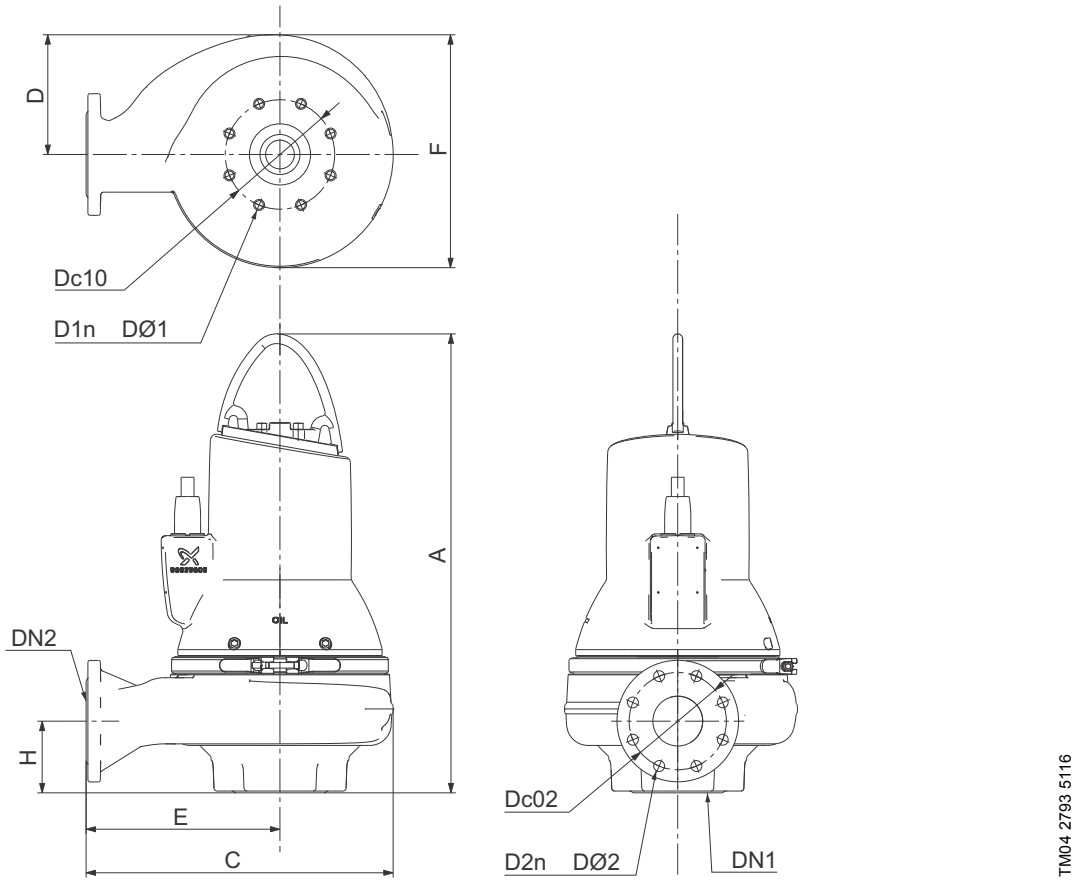
SL1 pumps

Pump type	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12a	Z14	Z15	Z16	Z23	ZDN1	S3OPR	ZM
SL1.50.65.22.2.--.C	210	95	140	701	514	364	81	1 1/2"	738	97	1	175	266	516	DN 65	463	4 x M16
SL1.50.65.30.2.--.C	210	95	140	701	514	364	81	1 1/2"	738	97	1	175	266	516	DN 65	468	4 x M16
SL1.50.65.40.2.--.C	210	95	140	742	555	375	81	1 1/2"	774	97	1	175	266	552	DN 65	460	4 x M16
SL1.50.80.22.2.--.C	220	95	160	719	526	376	81	1 1/2"	772	131	13	171	345	516	DN 80	495	4 x M16
SL1.50.80.30.2.--.C	220	95	160	719	526	376	81	1 1/2"	772	131	13	171	345	516	DN 80	500	4 x M16
SL1.50.80.40.2.--.C	220	95	160	760	567	387	81	1 1/2"	808	131	13	171	345	552	DN 80	495	4 x M16
SL1.80.80.15.4.--.C	220	95	160	788	595	432	81	1 1/2"	793	111	13	171	345	557	DN 80	513	4 x M16
SL1.80.80.22.4.--.C	220	95	160	788	595	432	81	1 1/2"	793	111	13	171	345	557	DN 80	518	4 x M16
SL1.80.80.30.4.--.C	220	95	160	858	665	479	81	1 1/2"	793	82	13	171	345	586	DN 80	512	4 x M16
SL1.80.80.40.4.--.C	220	95	160	858	665	479	81	1 1/2"	830	82	13	171	345	623	DN 80	517	4 x M16
SL1.80.80.55.4.--.C	220	95	160	858	665	479	81	1 1/2"	837	82	13	171	345	595	DN 80	507	4 x M16
SL1.80.80.75.4.--.C	220	95	160	883	690	488	81	1 1/2"	900	82	13	171	345	658	DN 80	528	4 x M16
SL1.80.100.15.4.--.C	260	110	220	878	652	489	110	2"	832	150	0	220	413	557	DN 100	553	4 x M16
SL1.80.100.22.4.--.C	260	110	220	878	652	489	110	2"	832	150	0	220	413	557	DN 100	558	4 x M16
SL1.80.100.30.4.--.C	260	110	220	948	722	536	110	2"	851	125	0	220	413	601	DN 100	555	4 x M16
SL1.80.100.40.4.--.C	260	110	220	948	722	536	110	2"	873	125	0	220	413	623	DN 100	560	4 x M16
SL1.80.100.55.4.--.C	260	110	220	948	722	536	110	2"	880	125	0	220	413	595	DN 100	550	4 x M16
SL1.80.100.75.4.--.C	260	110	220	973	747	545	110	2"	942	124	0	220	413	658	DN 100	565	4 x M16
SL1.100.100.40.4.--.C	260	110	220	984	758	537	110	2"	880	125	0	220	413	630	DN 100	572	4 x M16
SL1.100.100.55.4.--.C	260	110	220	984	758	537	110	2"	887	125	0	220	413	602	DN 100	562	4 x M16
SL1.100.100.75.4.--.C	260	110	220	984	758	529	110	2"	952	125	0	220	413	667	DN 100	576	4 x M16
SL1.100.150.40.4.--.C	300	110	280	1093	780	559	110	2"	919	164	0	280	450	630	DN 150	611	4 x M16
SL1.100.150.55.4.--.C	300	110	280	1093	780	559	110	2"	926	164	0	280	450	602	DN 150	601	4 x M16
SL1.100.150.75.4.--.C	300	110	280	1093	780	545	110	2"	991	164	0	280	450	667	DN 150	615	4 x M16

SLV pumps

Pump type	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12a	Z14	Z15	Z16	Z23	ZDN1	S3OPR	ZM
SLV.65.65.22.2.--.C	210	95	140	731	544	394	81	1 1/2"	748	64	1	175	266	559	DN 65	479	4 x M16
SLV.65.65.30.2.--.C	210	95	140	731	544	394	81	1 1/2"	748	64	1	175	266	559	DN 65	485	4 x M16
SLV.65.65.40.2.--.C	210	95	140	791	604	424	81	1 1/2"	778	60	1	175	266	593	DN 65	476	4 x M16
SLV.65.80.22.2.--.C	220	95	160	750	557	407	81	1 1/2"	782	97	13	171	345	560	DN 80	513	4 x M16
SLV.65.80.30.2.--.C	220	95	160	750	557	407	81	1 1/2"	782	97	13	171	345	560	DN 80	518	4 x M16
SLV.65.80.40.2.--.C	220	95	160	808	615	436	81	1 1/2"	812	94	13	171	345	593	DN 80	510	4 x M16
SLV.80.80.11.4.--.C	220	95	160	762	569	401	81	1 1/2"	802	91	13	171	345	586	DN 80	526	4 x M16
SLV.80.80.13.4.--.C	220	95	160	762	569	401	81	1 1/2"	802	91	13	171	345	586	DN 80	526	4 x M16
SLV.80.80.15.4.--.C	220	95	160	762	569	401	81	1 1/2"	802	91	13	171	345	586	DN 80	526	4 x M16
SLV.80.80.22.4.--.C	220	95	160	762	569	401	81	1 1/2"	802	91	13	171	345	586	DN 80	531	4 x M16
SLV.80.80.40.2.--.C	220	95	160	809	616	436	81	1 1/2"	840	96	13	171	345	619	DN 80	537	4 x M16
SLV.80.80.40.4.--.C	220	95	160	813	620	427	81	1 1/2"	839	91	13	171	345	623	DN 80	537	4 x M16
SLV.80.80.60.2.--.C	220	95	160	809	616	436	81	1 1/2"	847	96	13	171	345	591	DN 80	537	4 x M16
SLV.80.80.75.2.--.C	220	95	160	809	616	436	81	1 1/2"	847	86	13	171	345	601	DN 80	527	4 x M16
SLV.80.80.92.2.--.C	220	95	160	842	649	453	81	1 1/2"	859	77	13	171	345	622	DN 80	535	4 x M16
SLV.80.80.110.2.--.C	220	95	160	842	649	453	81	1 1/2"	859	77	13	171	345	622	DN 80	535	4 x M16
SLV.80.100.11.4.--.C	260	110	220	850	624	458	110	2"	842	131	0	220	413	586	DN 100	569	4 x M16
SLV.80.100.13.4.--.C	260	110	220	850	624	458	110	2"	842	131	0	220	413	586	DN 100	569	4 x M16
SLV.80.100.15.4.--.C	260	110	220	850	624	458	110	2"	842	131	0	220	413	586	DN 100	569	4 x M16
SLV.80.100.22.4.--.C	260	110	220	850	624	458	110	2"	842	131	0	220	413	586	DN 100	574	4 x M16
SLV.80.100.40.2.--.C	260	110	220	909	683	503	110	2"	880	136	0	220	413	619	DN 100	570	4 x M16
SLV.80.100.40.4.--.C	260	110	220	901	675	484	110	2"	879	131	0	220	413	623	DN 100	570	4 x M16
SLV.80.100.60.2.--.C	260	110	220	909	683	503	110	2"	887	136	0	220	413	591	DN 100	560	4 x M16
SLV.80.100.75.2.--.C	260	110	220	909	683	503	110	2"	887	136	0	220	413	591	DN 100	560	4 x M16
SLV.80.100.92.2.--.C	260	110	220	942	716	520	110	2"	899	117	0	220	413	622	DN 100	571	4 x M16
SLV.80.100.110.2.--.C	260	110	220	942	716	520	110	2"	899	117	0	220	413	622	DN 100	571	4 x M16
SLV.100.100.30.4.--.C	260	110	220	900	674	494	110	2"	843	106	0	220	413	612	DN 100	552	4 x M16
SLV.100.100.40.4.--.C	260	110	220	900	674	494	110	2"	865	106	0	220	413	634	DN 100	557	4 x M16
SLV.100.100.55.4.--.C	260	110	220	900	674	494	110	2"	872	106	0	220	413	606	DN 100	547	4 x M16
SLV.100.100.75.4.--.C	260	110	220	933	707	511	110	2"	937	95	0	220	413	682	DN 100	555	4 x M16

Free standing installation (without ring stand)



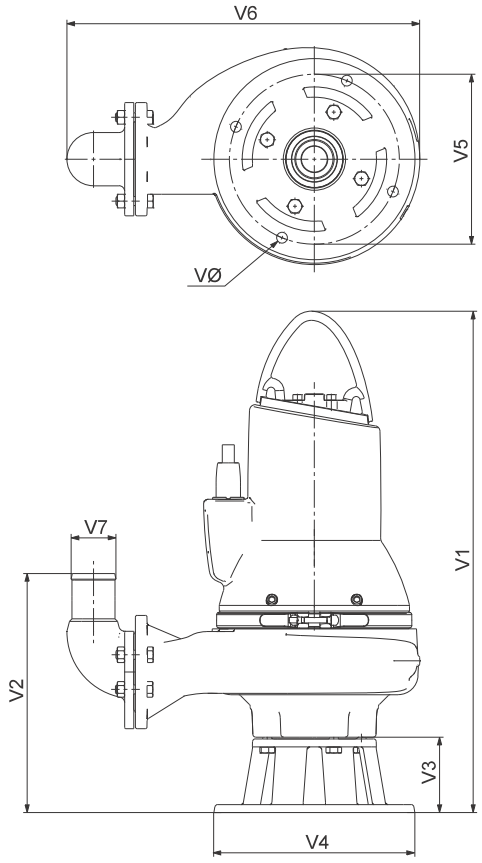
SL1 pumps

Pump type	A	C	D	E	F	H	DN1	Dc10	D1n DØ1	DN2	Dc02	D2n DØ2
SL1.50.65.22.2.--.C	641	366	171	216	321	69	DN 65	145	4 x M16	DN 65	145	4 x 18
SL1.50.65.30.2.--.C	641	366	171	216	321	69	DN 65	145	4 x M16	DN 65	145	4 x 18
SL1.50.65.40.2.--.C	677	407	200	227	379	69	DN 65	145	4 x M16	DN 65	145	4 x 18
SL1.50.80.22.2.--.C	641	366	171	216	321	69	DN 65	145	4 x M16	DN 80	160	8 x 18
SL1.50.80.30.2.--.C	641	366	171	216	321	69	DN 65	145	4 x M16	DN 80	160	8 x 18
SL1.50.80.40.2.--.C	677	407	200	227	379	69	DN 65	145	4 x M16	DN 80	160	8 x 18
SL1.80.80.15.4.--.C	682	435	171	272	347	89	DN 100	180	8 x M16	DN 80	160	8 x 18
SL1.80.80.22.4.--.C	682	435	176	272	347	89	DN 100	180	8 x M16	DN 80	160	8 x 18
SL1.80.80.30.4.--.C	711	505	200	319	397	118	DN 100	180	8 x M16	DN 80	160	8 x 18
SL1.80.80.40.4.--.C	748	505	200	319	397	118	DN 100	180	8 x M16	DN 80	160	8 x 18
SL1.80.80.55.4.--.C	755	505	200	319	397	118	DN 100	180	8 x M16	DN 80	160	8 x 18
SL1.80.80.75.4.--.C	818	530	217	328	423	118	DN 100	180	8 x M16	DN 80	160	8 x 18
SL1.80.100.15.4.--.C	682	435	176	272	347	90	DN 100	180	8 x M16	DN 100	180	8 x 18
SL1.80.100.22.4.--.C	682	435	176	272	347	90	DN 100	180	8 x M16	DN 100	180	8 x 18
SL1.80.100.30.4.--.C	726	505	200	319	397	115	DN 100	180	8 x M16	DN 100	180	8 x 18
SL1.80.100.40.4.--.C	748	505	200	319	397	115	DN 100	180	8 x M16	DN 100	180	8 x 18
SL1.80.100.55.4.--.C	755	505	200	319	397	115	DN 100	180	8 x M16	DN 100	180	8 x 18
SL1.80.100.75.4.--.C	818	530	217	328	423	116	DN 100	180	8 x M16	DN 100	180	8 x 18
SL1.100.100.40.4.--.C	755	541	238	320	438	115	DN 150	240	8 x M20	DN 100	180	8 x 18
SL1.100.100.55.4.--.C	762	541	238	320	438	115	DN 150	240	8 x M20	DN 100	180	8 x 18
SL1.100.100.75.4.--.C	827	541	245	312	462	115	DN 150	240	8 x M20	DN 100	180	8 x 18
SL1.100.150.40.4.--.C	755	541	240	320	440	111	DN 150	240	8 x M20	DN 150	240	8 x 22
SL1.100.150.55.4.--.C	762	541	240	320	440	111	DN 150	240	8 x M20	DN 150	240	8 x 22
SL1.100.150.75.4.--.C	827	541	255	306	472	111	DN 150	240	8 x M20	DN 150	240	8 x 22

SLV pumps

Pump type	A	C	D	E	F	H	DN1	Dc1	DØ1 D1n	DN2	Dc2	DØ2 D2n
SLV.65.65.22.2.--.C	684	396	171	246	321	102	DN 80	160	8 x M16	DN 65	145	4 x 18
SLV.65.65.30.2.--.C	684	396	171	246	321	102	DN 80	160	8 x M16	DN 65	145	4 x 18
SLV.65.65.40.2.--.C	718	456	200	276	380	106	DN 80	160	8 x M16	DN 65	145	4 x 18
SLV.65.80.22.2.--.C	685	397	171	247	321	103	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.65.80.30.2.--.C	685	397	171	247	321	103	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.65.80.40.2.--.C	718	455	200	276	379	106	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.11.4.--.C	711	409	171	241	339	109	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.13.4.--.C	711	409	171	241	339	109	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.15.4.--.C	711	409	171	241	339	109	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.22.4.--.C	711	409	171	241	339	109	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.40.2.--.C	744	456	200	276	380	104	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.40.4.--.C	748	460	200	267	393	109	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.60.2.--.C	751	456	200	276	380	104	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.75.2.--.C	751	456	200	276	380	104	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.92.2.--.C	782	489	217	293	413	123	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.80.110.2.--.C	782	489	217	293	413	123	DN 80	160	8 x M16	DN 80	160	8 x 18
SLV.80.100.11.4.--.C	711	407	171	241	337	109	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.80.100.13.4.--.C	711	407	171	241	337	109	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.80.100.15.4.--.C	711	407	171	241	337	109	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.80.100.22.4.--.C	711	407	171	241	337	109	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.80.100.40.2.--.C	744	466	200	286	380	104	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.80.100.40.4.--.C	748	458	200	267	391	109	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.80.100.60.2.--.C	751	466	200	286	380	104	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.80.100.75.2.--.C	751	466	200	286	380	104	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.80.100.92.2.--.C	782	499	217	303	413	123	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.80.100.110.2.--.C	782	499	217	303	413	123	DN 80	160	8 x M16	DN 100	180	8 x 18
SLV.100.100.30.4.--.C	737	457	200	277	380	134	DN 100	180	8 x M16	DN 100	180	8 x 18
SLV.100.100.40.4.--.C	759	457	200	277	380	134	DN 100	180	8 x M16	DN 100	180	8 x 18
SLV.100.100.55.4.--.C	766	457	200	277	380	134	DN 100	180	8 x M16	DN 100	180	8 x 18
SLV.100.100.75.4.--.C	842	490	217	294	413	145	DN 100	180	8 x M16	DN 100	180	8 x 18

Free standing installation (with ring stand)



TM04 2795 3008

SL1 pumps

Pump type	V1	V2	V3	V4	V5	V6	V7	VØ
SL1.50.65.22.2.--.C	771	358	130	325	270	479	65	19
SL1.50.65.30.2.--.C	771	358	130	325	270	479	65	19
SL1.50.65.40.2.--.C	807	358	130	325	270	520	65	18
SL1.50.80.22.2.--.C	771	373	130	325	270	482	80	19
SL1.50.80.30.2.--.C	771	373	130	325	270	482	80	19
SL1.50.80.40.2.--.C	807	373	130	325	270	523	80	19
SL1.80.80.15.4.--.C	812	393	130	355	300	551	80	19
SL1.80.80.22.4.--.C	812	393	130	355	300	551	80	19
SL1.80.80.30.4.--.C	841	422	130	355	300	621	80	19
SL1.80.80.40.4.--.C	878	422	130	355	300	621	80	19
SL1.80.80.55.4.--.C	885	422	130	355	300	621	80	19
SL1.80.80.75.4.--.C	948	422	130	355	300	646	80	19
SL1.80.100.15.4.--.C	812	364	130	355	300	598	100	19
SL1.80.100.22.4.--.C	812	364	130	355	300	598	100	19
SL1.80.100.30.4.--.C	856	389	130	355	300	668	100	19
SL1.80.100.40.4.--.C	878	389	130	355	300	668	100	19
SL1.80.100.55.4.--.C	885	389	130	355	300	668	100	19
SL1.80.100.75.4.--.C	948	390	130	355	300	693	100	19
SL1.100.100.40.4.--.C	941	445	186	450	400	704	100	22
SL1.100.100.55.4.--.C	948	445	186	450	400	704	100	22
SL1.100.100.75.4.--.C	1013	445	186	450	400	704	100	22
SL1.100.150.40.4.--.C	941	570	186	450	400	803	150	22
SL1.100.150.55.4.--.C	948	570	186	450	400	803	150	22
SL1.100.150.75.4.--.C	1013	570	186	450	400	803	150	22

SLV pumps

Pump type	V1	V2	V3	V4	V5	V6	V7	VØ
SLV.65.65.22.2.--.C	812	389	128	330	280	509	65	18
SLV.65.65.30.2.--.C	812	389	128	330	280	509	65	18
SLV.65.65.40.2.--.C	846	393	128	330	280	569	65	18
SLV.65.80.22.2.--.C	813	373	128	330	280	530	80	18
SLV.65.80.30.2.--.C	813	405	128	330	280	513	80	18
SLV.65.80.40.2.--.C	846	408	128	330	280	571	80	18
SLV.80.80.11.4.--.C	839	411	128	330	280	525	80	18
SLV.80.80.13.4.--.C	839	411	128	330	280	525	80	18
SLV.80.80.15.4.--.C	839	411	128	330	280	525	80	18
SLV.80.80.22.4.--.C	839	411	128	330	280	525	80	18
SLV.80.80.40.2.--.C	872	406	128	330	280	572	80	18
SLV.80.80.40.4.--.C	876	411	128	330	280	576	80	18
SLV.80.80.60.2.--.C	879	406	128	330	280	572	80	18
SLV.80.80.75.2.--.C	879	406	128	330	280	572	80	18
SLV.80.80.92.2.--.C	910	425	128	330	280	605	80	18
SLV.80.80.110.2.--.C	910	425	128	330	280	605	80	18
SLV.80.100.11.4.--.C	839	381	128	330	280	570	100	18
SLV.80.100.13.4.--.C	839	381	128	330	280	570	100	18
SLV.80.100.15.4.--.C	839	381	128	330	280	570	100	18
SLV.80.100.22.4.--.C	839	381	128	330	280	570	100	18
SLV.80.100.40.2.--.C	872	376	128	330	280	629	100	18
SLV.80.100.40.4.--.C	876	381	128	330	280	621	100	18
SLV.80.100.60.2.--.C	879	376	128	330	280	629	100	18
SLV.80.100.75.2.--.C	879	376	128	330	280	629	100	18
SLV.80.100.92.2.--.C	910	395	128	330	280	662	100	18
SLV.80.100.110.2.--.C	910	395	128	330	280	662	100	18
SLV.100.100.30.4.--.C	867	408	130	355	300	620	100	19
SLV.100.100.40.4.--.C	889	408	130	355	300	620	100	19
SLV.100.100.55.4.--.C	896	408	130	355	300	620	100	19
SLV.100.100.75.4.--.C	972	419	130	355	300	653	100	19

Weights

SL1 pumps

Type	Pump	Weight [kg]
SL1.50.65	SL1.50.65.22.(A).(EX).2.--.C	63.8
	SL1.50.65.30.(A).(EX).2.--.C	92.1
	SL1.50.65.40.(A).(EX).2.--.C	116.0
SL1.50.80	SL1.50.80.22.(A).(EX).2.--.C	64.5
	SL1.50.80.30.(A).(EX).2.--.C	92.8
	SL1.50.80.40.(A).(EX).2.--.C	116.8
SL1.80.80	SL1.80.80.15.(A).(EX).4.--.C	100.5
	SL1.80.80.22.(A).(EX).4.--.C	108.1
	SL1.80.80.30.(A).(EX).4.--.C	130.6
	SL1.80.80.40.(A).(EX).4.--.C	146.9
	SL1.80.80.55.(A).(EX).4.--.C	159.0
	SL1.80.80.75.(A).(EX).4.--.C	195.5
SL1.80.100	SL1.80.100.15.(A).(EX).4.--.C	100.8
	SL1.80.100.22.(A).(EX).4.--.C	108.3
	SL1.80.100.30.(A).(EX).4.--.C	131.5
	SL1.80.100.40.(A).(EX).4.--.C	147.8
	SL1.80.100.55.(A).(EX).4.--.C	159.9
	SL1.80.100.75.(A).(EX).4.--.C	196.5
SL1.100.100	SL1.100.100.40.(A).(EX).4.--.C	149.8
	SL1.100.100.55.(A).(EX).4.--.C	162.9
	SL1.100.100.75.(A).(EX).4.--.C	195.2
SL1.100.150	SL1.100.150.40.(A).(EX).4.--.C	152.9
	SL1.100.150.55.(A).(EX).4.--.C	166.0
	SL1.100.150.75.(A).(EX).4.--.C	200.1

SLV pumps

Type	Pump	Weight [kg]
SLV.65.65	SLV.65.65.22.(A).(EX).2.--.C	64.0
	SLV.65.65.30.2.--.C	92.6
	SLV.65.65.40.2.--.C	116.5
SLV.65.80	SLV.65.80.22.2.--.C	65.1
	SLV.65.80.30.2.--.C	93.7
	SLV.65.80.40.2.--.C	117.0
SLV.80.80	SLV.80.80.11.4.--.C	90.9
	SLV.80.80.13.4.--.C	94.3
	SLV.80.80.15.4.--.C	94.6
	SLV.80.80.22.4.--.C	102.0
	SLV.80.80.40.2.--.C	121.2
	SLV.80.80.40.4.--.C	133.2
	SLV.80.80.60.2.--.C	137.3
	SLV.80.80.75.2.--.C	137.7
	SLV.80.80.92.2.--.C	176.8
	SLV.80.80.110.2.--.C	177.2
SLV.80.100	SLV.80.100.11.4.--.C	89.1
	SLV.80.100.13.4.--.C	92.5
	SLV.80.100.15.4.--.C	92.8
	SLV.80.100.22.4.--.C	100.2
	SLV.80.100.40.2.--.C	123.3
	SLV.80.100.40.4.--.C	130.8
	SLV.80.100.60.2.--.C	139.4
	SLV.80.100.75.2.--.C	139.8
	SLV.80.100.92.2.--.C	176.3
	SLV.80.100.110.2.--.C	176.7
SLV.100.100	SLV.100.100.30.4.--.C	113.2
	SLV.100.100.40.4.--.C	128.5
	SLV.100.100.55.4.--.C	138.8
	SLV.100.100.75.4.--.C	169.6

12. Accessories

Installation systems

Picture	Description	Dimensions	SL1.50.65	SL1.50.80	SL1.80.80	SL1.80.100	SL1.100.100	SL1.100.150	SLV.65.65	SLV.65.80	SLV.80.80	SLV.80.100	SLV.100.100	Product number
 TM04 4490 1409	Complete auto-coupling system, including guide claw, base plate and upper guide rail bracket. Cast iron, epoxy-coated. With bolts, nuts and gaskets. **Note**: If your guide rails exceed 4 m, please consider the use of intermediate guide rail brackets to support your system.	DN 65	•						•					96090992
		DN 80		•	•					•	•			96090993
		DN 80 / DN 65	•						•					96102238
		DN 100				•	•					•	•	96090994
		DN 100 / DN 80		•	•					•	•			96102240
		DN 150						•						96090995
		DN 150 / DN 100				•	•					•	•	96102241
 TM06 0755 0814	Upper guide rail brackets of stainless steel (EN/DIN 1.4408)	DN 65/80 / guiderail 1 1/2"												97904180
		DN 100/150 / guiderail 1 1/2"												97904181
		DN 150/125 / guiderail 3"												97904182
 TM05 4253 2112	Intermediate guide rail brackets of stainless steel (EN 1.4308/AISI 304)	DN 65 / 2 1/2"	•						•					96825119
		DN 80 / 3"		•	•					•	•			96825142
		DN 100 / 4"				•	•					•	•	96825161
		DN 150 / 6"						•						96887674
 TM04 6086 4809	Ring stand with flanged 90 ° elbow and hose connection. Cast iron, epoxy-coated. With bolts, nuts, gaskets and anchor bolts.	DN 65 / DN 65 / 2 1/2"	•											96102253
		DN 65 / DN 80 / 3"		•										96102378
		DN 80 / DN 65 / 2 1/2"							•					96102439
		DN 80 / DN 80 / 3"								•	•			96102254
		DN 80 / DN 100 / 4"										•		96943236
		DN 100 / DN 80 / 3"			•									96102313
		DN 100 / DN 100 / 4"				•							•	96102255
		DN 150 / DN 100 / 4", galvanised steel					•							96102314
		DN 150 / DN 150 / 6", galvanised steel						•						96102256
	Ring stand with flanged 90 ° elbow and outside thread connection. Cast iron, epoxy-coated. With bolts, nuts, gaskets and anchor bolts.	DN 65 / DN 65 / R 2 1/2	•											96102379
		DN 65 / DN 80 / R 3		•										96102380
		DN 80 / DN 65 / R 2 1/2"							•					96102440
		DN 80 / DN 80 / R 3								•	•			96102381
		DN 80 / DN 100 / R 4										•		96943237
		DN 100 / DN 80 / R 3			•									96102382
		DN 100 / DN 100 / R 4				•							•	96102383
		DN 150 / DN 100 / R 4, galvanised steel					•							96102384
		DN 150 / DN 150 / R 6, galvanised steel						•						96102385

Other accessories

Picture	Description	Max. load [kg]	SL1.50.65	SL1.50.80	SL1.80.80	SL1.80.100	SL1.100.100	SL1.100.150	SLV.65.65	SLV.65.80	SLV.80.80	SLV.100.100	Product number
 TM02 6126 5102	2 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.	500	•	•	•	•	•	•	•	•	•	•	98540141
	3 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595457
	4 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595458
	6 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595459
	8 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595460
	10 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595471
	2 m stainless steel lifting chain (according to EN/DIN 1.4401) with lifting link and safety hook. With certificates.	500	•	•	•	•	•	•	•	•	•	•	98540142
	3 m stainless steel lifting chain (according to EN/DIN 1.4401) with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595472
	4 m stainless steel lifting chain (according to EN/DIN 1.4401) with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595474
	6 m stainless steel lifting chain (according to EN/DIN 1.4401) with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595475
	8 m stainless steel lifting chain (according to EN/DIN 1.4401) with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595476
	10 m stainless steel lifting chain (according to EN/DIN 1.4401) with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	98595478

13. Grundfos Product Center

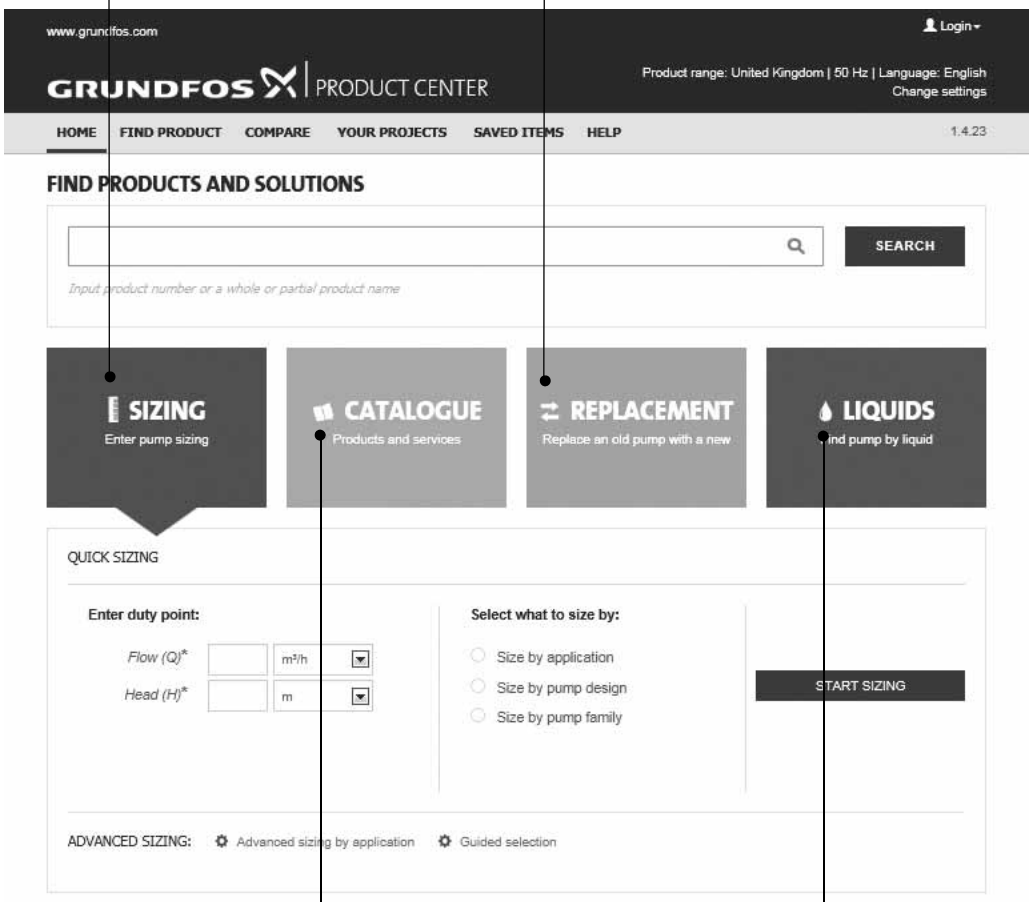
Online search and sizing tool to help you make the right choice.

http://product-selection.grundfos.com

SIZING enables you to size a pump based on entered data and selection choices.

REPLACEMENT enables you to find a replacement product.
Search results will include information on

- the lowest purchase price
- the lowest energy consumption
- the lowest total life cycle cost.



CATALOGUE gives you access to the Grundfos product catalogue.

LIQUIDS enables you to find pumps designed for aggressive, flammable or other special liquids.

All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.

Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc. in PDF format.

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