

S pumps, range 70

65 to 160 kW

50 Hz



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1. Introduction

Introduction

This data booklet deals with Grundfos heavy-duty sewage pumps type S, range 70.



TM07 0831 0718

Fig. 1 S pump, range 70

S pumps, range 70, are a range of free-flow channel impeller pumps specifically designed for pumping sewage and wastewater in a wide range of municipal, private and industrial applications.

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

The pumps are fitted with motors from 65 to 160 kW. The motors are either 4-, 6- or 8-pole motors, depending on the motor size.

The free passage in the pumps is 90 to 120 mm.

The pumps are available for these types of installation:

- submerged installation on auto-coupling system
- submerged installation, free-standing
- dry installation, vertical
- dry installation, horizontal.

Applications

S pumps are designed for applications, such as these:

- raw-water intake
- wastewater treatment plants
- municipal pumping stations
- public buildings
- blocks of flats
- industries
- garages
- underground car parks
- car-wash areas
- restaurants and hotels.

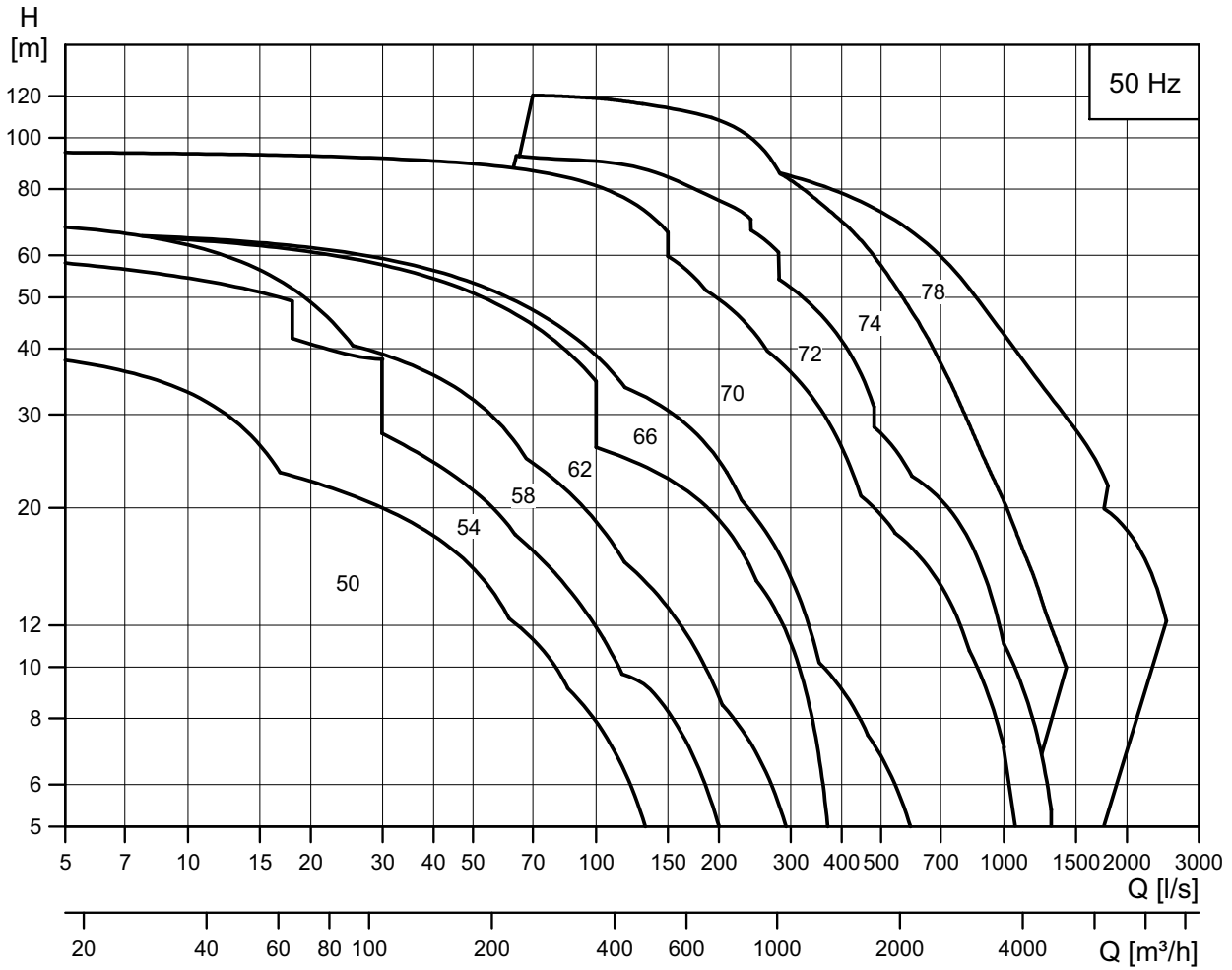
The pumps are suitable for both temporary and permanent installation. The lifting bracket fitted on the pumps facilitates easy transportation as well as installation at the installation site.

Main constructional features

- Leak-proof connection on auto coupling via the Grundfos SmartSeal sealing system
- double mechanical shaft seal system for reliable sealing between pumped liquid and motor
- watertight cable entry of corrosion-resistant polyamide
- moisture switch for continuous monitoring of motor housing and terminal box ensuring automatic cut-off of power in case of ingress of liquid
- self-cleaning channel impeller with long vanes reducing the risk of jamming or clogging, or SuperVortex impeller with high pumping efficiency and less downtime
- SmartTrim system allowing easy adjustment of impeller clearance and maintaining maximum pump efficiency over pump lifetime
- motor in insulation class F (155 °C), enclosure class IP68 with three thermal sensors in stator windings
- shaft seal condition monitoring via water-in-oil sensor (optional)
- explosion-proof motors for applications involving potential risk of explosion
- three stainless steel versions for use in corrosive or aggressive liquids:
 - stainless steel impeller, cast iron pump and motor housing
 - stainless steel pump housing, flange and impeller, cast iron motor housing made entirely of corrosion-resistant stainless steel.

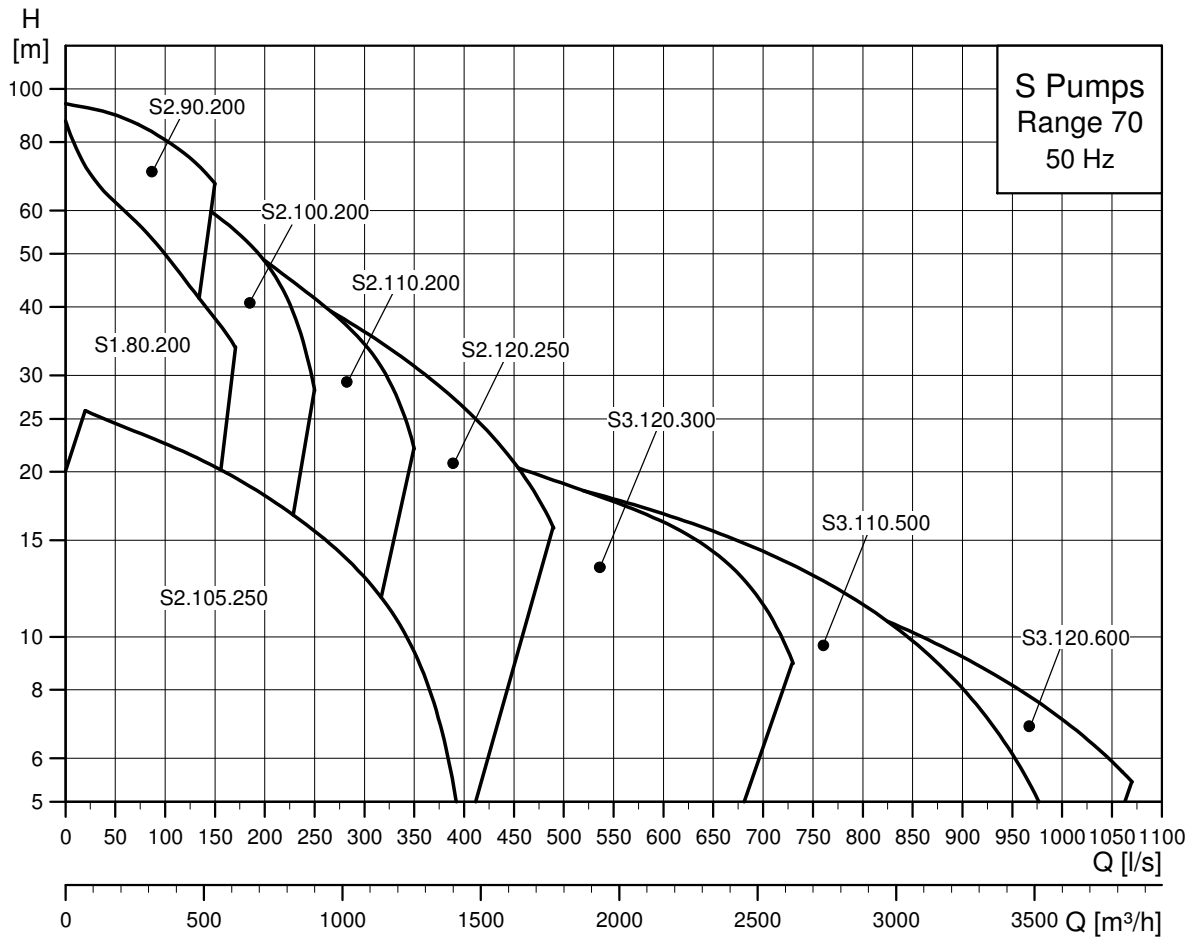
2. Performance range

Performance range overview, S pumps



TM05 5469 3712

Performance range, S pumps, range 70



TM04 1878 4818

List of pump curves

3 x 400/690 V

Pump type	Pressure range	Curve chart on page
S3.120.600.650.8.70E	Extra low	50
S3.120.600.1000/1300.6.70E		52
S2.120.250.1600.4.70L		54
S3.110.500.650.8.70L	Low	58
S3.110.500.800.6.70L		60
S3.110.500.1000/1300.6.70L		62
S2.110.200.850/1150/1600.4.70M	Medium	66
S3.120.300.650.8.70M		70
S3.120.300.800.6.70M		74
S3.120.300.1000/1600.6.70M		76
S1.80.200.850.4.70H	High	78
S2.100.200.1150/1600.4.70H		80
S1.105.250.650.8.70H		82
S1.120.250.800.6.70H		84
S2.120.250.1000/1300.6.70H		86
S2.90.200.1150/1600.4.70S	Super high	90

3 x 415 V

Pump type	Pressure range	Curve chart on page
S3.120.600.650.8.70E	Extra low	52
S3.120.600.1000/1300.6.70E		56
S2.120.250.1600.4.70L		60
S3.110.500.650.8.70L	Low	62
S3.110.500.800.6.70L		66
S3.110.500.1000/1300.6.70L		68
S2.110.200.850/1150/1600.4.70M	Medium	70
S3.120.300.650.8.70M		74
S3.120.300.800.6.70M		76
S3.120.300.1000/1600.6.70M		80
S1.80.200.850.4.70H	High	82
S2.100.200.1150/1600.4.70H		84
S1.105.250.650.8.70H		86
S1.120.250.800.6.70H		88
S2.120.250.1000/1300.6.70H		90
S2.90.200.1150/1600.4.70S	Super high	92

3. Identification

Type key

Please note that the pump type described in this booklet is not necessarily available in all variants.

Example: **S1.100.100.55.4.50M.S.205.G.N.D.511.Z**

Code	Explanation	Designation
S	Grundfos sewage and wastewater pump	Pump type
ST	Multi-channel impeller pump installed in a column pipe	
1	Single-channel impeller	Impeller type
2	Two-channel impeller	
3	Three-channel impeller	
V	SuperVortex impeller	
100	Maximum solid size [mm]	Pump passage
100	Nominal diameter of pump outlet port [mm]	Pump outlet, S-type
	Nominal diameter of column pipe [mm]	Pump outlet, ST-type
55	P2 = Code number from type designation / 10	Output power [kW]
2	2-pole motor	Number of poles
4	4-pole motor	
6	6-pole motor	
8	8-pole motor	
10	10-pole motor	
12	12-pole motor	
50	Range 50	Pump range
54	Range 54	
58	Range 58	
62	Range 62	
66	Range 66	
70	Range 70	
S	Super-high	Pressure version
H	High	
M	Medium	
L	Low	
E	Extra-low	
F	Super-low	
S	Submersible installation without cooling jacket	Installation type
C	Submersible installation with cooling jacket	
D	Dry installation, vertical	
H	Dry installation, horizontal	
205	Impeller diameter [mm]	Impeller diameter (mean)
G	Cast iron impeller, pump housing and stator housing	Material code for impeller, pump housing and stator housing
Q	Stainless steel impeller, DIN W.-Nr. 1.4408	
S	Stainless steel impeller and pump housing, DIN W.-Nr. 1.4408	
R	Stainless steel impeller, pump housing and stator housing, DIN W.-Nr. 1.4408	
N	Non-explosion-proof pump	Pump version
Ex	Pump with explosion-proof motor	
B	Pump with built-in SM 113 ¹	Sensor version
C	Not in use	
D	S pump without built-in SM 113.	
5	50 Hz	Frequency [Hz]
6	60 Hz	
11	3 x 400 / 690 V, Y/D (50 Hz only)	Voltage code and connection
13	3 x 460 V, Y/D (60 Hz only)	
15	3 x 415 V, Y/D (50 Hz only)	
GPA	Pumps only for Australia	Customisation
Z	Custom-built products	

¹ PTC sensors are connected directly to IO 113 or other PTC relay.

Nameplates

Pump nameplate

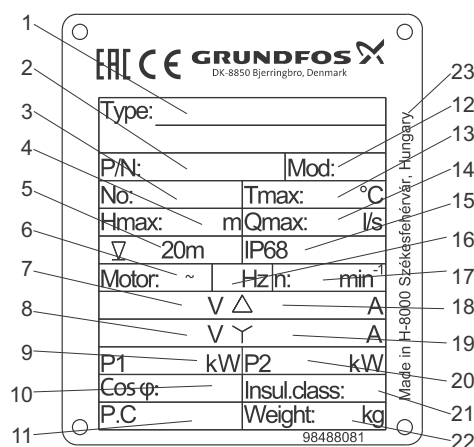


Fig. 2 Pump nameplate

Pos.	Description
1	Type designation
2	Product number
3	Serial number
4	Maximum head
5	Maximum installation depth
6	Number of phases
7	Voltage, delta connection
8	Voltage, star connection
9	Rated power input
10	Cos φ, 1/1 load
11	Production code, year and week
12	Generation code
13	Maximum ambient temperature
14	Maximum flow rate
15	Enclosure class
16	Frequency
17	Rated speed
18	Current, delta connection
19	Current, star connection
20	Rated power output, P2
21	Insulation class
22	Net weight
23	Place of production

TM06 0370 5313

Ex approval plates

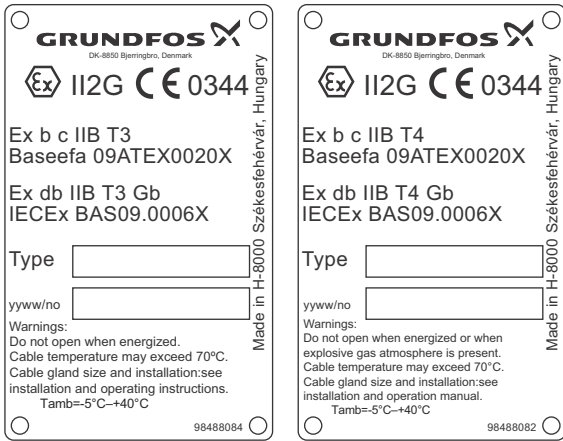


Fig. 3 Approval plates of Ex pumps, range 70

The approval plates give the following details:

Pos.	Description
	EU Ex symbol
II	Equipment group (II = non-mining)
2	Equipment category (high protection)
G	Type of explosive atmosphere (G = Gas)
CE	CE mark
0344	Number of quality assurance notified body
Ex	Explosion-proof motor according to European standard
b	Control of ignition sources
c	Constructional safety
db	Flameproof enclosure
IIB	Gas group (Ethylene)
T3	Maximum surface temperature of the motor is 200 °C
T4	Maximum surface temperature of the motor is 135 °C
Gb	Equipment protection level, zone 1
Baseefa	Certificate number
IECEX	Certificate number

Cable entry approval plate



Fig. 4 Cable entry approval plate

The approval plate gives the following details:

Pos.	Description
CE	CE-mark
1180	Number of quality assurance notified body
	EU ex-symbol
II	Equipment group (II = non-mining)
2	Equipment category (high protection)
G	Type of explosive atmosphere
Ex	Explosion-proof motor according to European standard
b	Control of ignition sources
db	Flameproof
IIB	Gas group (Ethylene)
T _{amb}	Ambient temperature
Gb	Equipment protection level, zone 1
Baseefa	Certificate number
IECEX	Certificate number
ID no	Inlet identification number (e.g. 36-1)

TM06 7260 1217

TM06 7560 4617 - TM06 7561 4617

4. Selection of product

Ordering the product

When ordering the product you need to take the following four aspects into consideration:

1. pump
2. custom-built variation (option)
3. accessories
4. controller.

Pump

Use *Product range* starting on page 10 and *Type key*, page 7 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
S1.100.200.850.4.70H.S.432.G.N.D.511	95112897

- Pump as specified in the type key
- 10 m cable
- Paint: black, NCS 9000N/RAL 9005, gloss 30, thickness 150 µm
- Three thermal switches (Klixon) or three thermal sensors (PTC) in stator windings
- One moisture switch below the motor top cover (two moisture switches in explosion-proof versions; one below the motor top cover and one in the stator housing in the bottom of the motor)
- Test according to ISO 9906:2012, grade 3B.

See *Performance curves and technical data*, page 50 for selection of a standard pump.

Note: Product specific data for the pump can also be found in Grundfos Product Center using the product number 95112897.

Custom-built variants

The S pumps can be customised to meet individual requirements. Many pump features and options are available for customisation, e.g. explosion-proof versions, various cable lengths or special materials. Variants can be seen in *List of variants*, page 24. For requirements or designs not included in the list, contact Grundfos.

Accessories

Depending on the installation type, you may need to order accessories. See *Accessories*, page 94 for selection of the correct accessories.

Note: Ordered accessories are not fitted from factory.

Controller

Grundfos Dedicated Controls are available.



TM06 6501 1515

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 more information about Grundfos Dedicated Controls, see *Controllers*, page 38.

5. Product range

Standard pumps - cast iron, 3 x 400/690 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.80.200.850.4.70H.S.448...	10	99442139			96641489
S1.80.200.850.4.70H.C.448...	10	99442140			96641489
S1.80.200.850.4.70H.H.448...	10	99442142	96308212		
S1.80.200.850.4.70H.D.448...	10	99442141		96308240	
S2.90.200.1150.4.70S.S.462...	10	95112909			96641489
S2.90.200.1150.4.70S.C.462...	10	95112910			96641489
S2.90.200.1150.4.70S.H.462...	10	95112911	96308192		
S2.90.200.1150.4.70S.D.462...	10	96797017		96308240	
S2.90.200.1600.4.70S.S.480...	10	95112924			96641489
S2.90.200.1600.4.70S.C.480...	10	95112925			96641489
S2.90.200.1600.4.70S.H.480...	10	95112926	96308192		
S2.90.200.1600.4.70S.D.480...	10	96797037		96308240	
S2.100.200.1150.4.70H.S.404...	10	95112903			96641489
S2.100.200.1150.4.70H.C.404...	10	95112904			96641489
S2.100.200.1150.4.70H.H.404...	10	95112905	96308212		
S2.100.200.1150.4.70H.D.404...	10	96797007		96308240	
S2.100.200.1600.4.70H.S.430...	10	95112915			96641489
S2.100.200.1600.4.70H.C.430...	10	95112916			96641489
S2.100.200.1600.4.70H.H.430...	10	95112917	96308212		
S2.100.200.1600.4.70H.D.430...	10	96797022		96308240	
S2.110.200.850.4.70M.S.375...	10	95112933			96641489
S2.110.200.850.4.70M.C.375...	10	95112934			96641489
S2.110.200.850.4.70M.H.375...	10	95112935	96308212		
S2.110.200.850.4.70M.D.375...	10	96796927		96308240	
S2.110.200.1150.4.70M.S.416...	10	95112906			96641489
S2.110.200.1150.4.70M.C.416...	10	95112907			96641489
S2.110.200.1150.4.70M.H.416...	10	95112908	96308212		
S2.110.200.1150.4.70M.D.416...	10	96797012		96308240	
S2.110.200.1600.4.70M.S.441...	10	95112921			96641489
S2.110.200.1600.4.70M.C.441...	10	95112922			96641489
S2.110.200.1600.4.70M.H.441...	10	95112923	96308212		
S2.110.200.1600.4.70M.D.441...	10	96797032		96308240	
S2.105.250.650.8.70H.S.538...	10	99442957			96782483
S2.105.250.650.8.70H.C.538...	10	99442958			96782483
S2.105.250.650.8.70H.D.538...	10	99442959		96308241	
S2.105.250.650.8.70H.H.538...	10	99442960	96308192		
S2.120.250.800.6.70H.S.465...	10	95112930			96782483
S2.120.250.800.6.70H.C.465...	10	95112931			96782483
S2.120.250.800.6.70H.D.465...	10	95112932		96308241	
S2.120.250.800.6.70H.H.465...	10	96796953	96308192		
S2.120.250.1000.6.70H.S.500...	10	95112900			96782483
S2.120.250.1000.6.70H.C.500...	10	95112901			96782483
S2.120.250.1000.6.70H.D.500...	10	95112902		96308241	
S2.120.250.1000.6.70H.H.500...	10	96796968	96308192		
S2.120.250.1300.6.70H.S.528...	10	95112912			96782483
S2.120.250.1300.6.70H.C.528...	10	95112913			96782483
S2.120.250.1300.6.70H.D.528...	10	95112914		96308241	
S2.120.250.1300.6.70H.H.528...	10	96796988	96308192		
S2.120.250.1600.4.70L.S.402...	10	95112918			96782483
S2.120.250.1600.4.70L.C.402...	10	95112919			96782483
S2.120.250.1600.4.70L.D.402...	10	95112920		96308241	
S2.120.250.1600.4.70L.H.402...	10	96797028	96308212		
S3.110.500.650.8.70L.S.464...	10	95112936			96782485
S3.110.500.650.8.70L.C.464...	10	95112937			96782485
S3.110.500.650.8.70L.D.464...	10	95112938		96308244	
S3.110.500.650.8.70L.H.464...	10	96796938	96308192		
S3.110.500.800.6.70L.S.370...	10	95112945			96782485
S3.110.500.800.6.70L.C.370...	10	95112946			96782485
S3.110.500.800.6.70L.D.370...	10	95112947		96308244	
S3.110.500.800.6.70L.H.370...	10	96796958	96308192		
S3.110.500.1000.6.70L.S.402...	10	95112951			96782485

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S3.110.500.1000.6.70L.C.402...	10	95112952			96782485
S3.110.500.1000.6.70L.D.402...	10	95112953		96308244	
S3.110.500.1000.6.70L.H.402...	10	96796973	96308192		
S3.110.500.1300.6.70L.S.442...	10	95112960			96782485
S3.110.500.1300.6.70L.C.442...	10	95112961			96782485
S3.110.500.1300.6.70L.D.442...	10	95112962		96308244	
S3.110.500.1300.6.70L.H.442...	10	96796993	96308192		
S3.120.300.650.8.70M.S.464...	10	95112939			96782484
S3.120.300.650.8.70M.C.464...	10	95112940			96782484
S3.120.300.650.8.70M.D.464...	10	95112941		96308241	
S3.120.300.650.8.70M.H.464...	10	96796943	96308192		
S3.120.300.800.6.70M.S.407...	10	95112948			96782484
S3.120.300.800.6.70M.C.407...	10	95112949			96782484
S3.120.300.800.6.70M.D.407...	10	95112950		96308241	
S3.120.300.800.6.70M.H.407...	10	96796963	96308255		
S3.120.300.1000.6.70M.S.428...	10	95112954			96782484
S3.120.300.1000.6.70M.C.428...	10	95112955			96782484
S3.120.300.1000.6.70M.D.428...	10	95112956		96308241	
S3.120.300.1000.6.70M.H.428...	10	96796978	96308255		
S3.120.300.1300.6.70M.S.456...	10	95112963			96782484
S3.120.300.1300.6.70M.C.456...	10	95112964			96782484
S3.120.300.1300.6.70M.D.456...	10	95112965		96308241	
S3.120.300.1300.6.70M.H.456...	10	96796998	96308192		
S3.120.600.650.8.70E.S.459...	10	95112942			96782486
S3.120.600.650.8.70E.C.459...	10	95112943			96782486
S3.120.600.650.8.70E.D.459...	10	95112944		96308245	
S3.120.600.650.8.70E.H.459...	10	96796948	96308192		
S3.120.600.1000.6.70E.S.402...	10	95112957			96782486
S3.120.600.1000.6.70E.C.402...	10	95112958			96782486
S3.120.600.1000.6.70E.D.402...	10	95112959		96308245	
S3.120.600.1000.6.70E.H.402...	10	96796983	96308192		
S3.120.600.1300.6.70E.S.426...	10	95112966			96782486
S3.120.600.1300.6.70E.C.426...	10	95112967			96782486
S3.120.600.1300.6.70E.D.426...	10	95112968		96308245	
S3.120.600.1300.6.70E.H.426...	10	96797003	96308192		

¹ The horizontal base stand is included in the pump product number.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Cast iron, 3 x 415 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.80.200.850.4.70H.S.448...	10	99442147			96641489
S1.80.200.850.4.70H.C.448...	10	99442148			96641489
S1.80.200.850.4.70H.H.448...	10	99442149		96308240	
S1.80.200.850.4.70H.D.448...	10	99442150	96308212		
S2.90.200.1150.4.70S.S.462...	10	96797015			96641489
S2.90.200.1150.4.70S.C.462...	10	96797016			96641489
S2.90.200.1150.4.70S.D.462...	10	96797018		96308240	
S2.90.200.1150.4.70S.H.462...	10	96797019	96308192		
S2.90.200.1600.4.70S.S.480...	10	96797035			96641489
S2.90.200.1600.4.70S.C.480...	10	96797036			96641489
S2.90.200.1600.4.70S.D.480...	10	96797038		96308240	
S2.90.200.1600.4.70S.H.480...	10	96797039	96308192		
S2.100.200.1150.4.70H.S.404...	10	96797005			96641489
S2.100.200.1150.4.70H.C.404...	10	96797006			96641489
S2.100.200.1150.4.70H.D.404...	10	96797008		96308240	
S2.100.200.1150.4.70H.H.404...	10	96797009	96308212		
S2.100.200.1600.4.70H.S.430...	10	96797020			96641489
S2.100.200.1600.4.70H.C.430...	10	96797021			96641489
S2.100.200.1600.4.70H.D.430...	10	96797023		96308240	
S2.100.200.1600.4.70H.H.430...	10	96797024	96308212		
S2.110.200.850.4.70M.S.375...	10	96796925			96641489
S2.110.200.850.4.70M.C.375...	10	96796926			96641489
S2.110.200.850.4.70M.D.375...	10	96796928		96308240	
S2.110.200.850.4.70M.H.375...	10	96796929	96308212		
S2.110.200.1150.4.70M.S.416...	10	96797010			96641489
S2.110.200.1150.4.70M.C.416...	10	96797011			96641489
S2.110.200.1150.4.70M.D.416...	10	96797013		96308240	
S2.110.200.1150.4.70M.H.416...	10	96797014	96308212		
S2.110.200.1600.4.70M.S.441...	10	96797030			96641489
S2.110.200.1600.4.70M.C.441...	10	96797031			96641489
S2.110.200.1600.4.70M.D.441...	10	96797033		96308240	
S2.110.200.1600.4.70M.H.441...	10	96797034	96308212		
S2.105.250.650.8.70H.S.538...	10	99442961			96782483
S2.105.250.650.8.70H.C.538...	10	99442962			96782483
S2.105.250.650.8.70H.D.538...	10	99442963		96308241	
S2.105.250.650.8.70H.H.538...	10	99442964	96308192		
S2.120.250.800.6.70H.S.465...	10	96796950			96782483
S2.120.250.800.6.70H.C.465...	10	96796951			96782483
S2.120.250.800.6.70H.D.465...	10	96796952		96308241	
S2.120.250.800.6.70H.H.465...	10	96796954	96308192		
S2.120.250.1000.6.70H.S.500...	10	96796965			96782483
S2.120.250.1000.6.70H.C.500...	10	96796966			96782483
S2.120.250.1000.6.70H.D.500...	10	96796967		96308241	
S2.120.250.1000.6.70H.H.500...	10	96796969	96308192		
S2.120.250.1300.6.70H.S.528...	10	96796985			96782483
S2.120.250.1300.6.70H.C.528...	10	96796986			96782483
S2.120.250.1300.6.70H.D.528...	10	96796987		96308241	
S2.120.250.1300.6.70H.H.528...	10	96796989	96308192		
S2.120.250.1600.4.70L.S.402...	10	96797025			96782483
S2.120.250.1600.4.70L.C.402...	10	96797026			96782483
S2.120.250.1600.4.70L.D.402...	10	96797027		96308241	
S2.120.250.1600.4.70L.H.402...	10	96797029	96308212		
S3.110.500.650.8.70L.S.464...	10	96796935			96782485
S3.110.500.650.8.70L.C.464...	10	96796936			96782485
S3.110.500.650.8.70L.D.464...	10	96796937		96308244	
S3.110.500.650.8.70L.H.464...	10	96796939	96308192		
S3.110.500.800.6.70L.S.370...	10	96796955			96782485
S3.110.500.800.6.70L.C.370...	10	96796956			96782485
S3.110.500.800.6.70L.D.370...	10	96796957		96308244	
S3.110.500.800.6.70L.H.370...	10	96796959	96308192		
S3.110.500.1000.6.70L.S.402...	10	96796970			96782485
S3.110.500.1000.6.70L.C.402...	10	96796971			96782485
S3.110.500.1000.6.70L.D.402...	10	96796972		96308244	
S3.110.500.1000.6.70L.H.402...	10	96796974	96308192		
S3.110.500.1300.6.70L.S.442...	10	96796990			96782485

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S3.110.500.1300.6.70L.C.442...	10	96796991			96782485
S3.110.500.1300.6.70L.D.442...	10	96796992		96308244	
S3.110.500.1300.6.70L.H.442...	10	96796994	96308192		
S3.120.300.650.8.70M.S.464...	10	96796940			96782484
S3.120.300.650.8.70M.C.464...	10	96796941			96782484
S3.120.300.650.8.70M.D.464...	10	96796942		96308241	
S3.120.300.650.8.70M.H.464...	10	96796944	96308192		
S3.120.300.800.6.70M.S.407...	10	96796960			96782484
S3.120.300.800.6.70M.C.407...	10	96796961			96782484
S3.120.300.800.6.70M.D.407...	10	96796962		96308241	
S3.120.300.800.6.70M.H.407...	10	96796964	96308255		
S3.120.300.1000.6.70M.S.428...	10	96796975			96782484
S3.120.300.1000.6.70M.C.428...	10	96796976			96782484
S3.120.300.1000.6.70M.D.428...	10	96796977		96308241	
S3.120.300.1000.6.70M.H.428...	10	96796979	96308255		
S3.120.300.1300.6.70M.S.456...	10	96796995			96782484
S3.120.300.1300.6.70M.C.456...	10	96796996			96782484
S3.120.300.1300.6.70M.D.456...	10	96796997		96308241	
S3.120.300.1300.6.70M.H.456...	10	96796999	96308192		
S3.120.600.650.8.70E.S.459...	10	96796945			96782486
S3.120.600.650.8.70E.C.459...	10	96796946			96782486
S3.120.600.650.8.70E.D.459...	10	96796947		96308245	
S3.120.600.650.8.70E.H.459...	10	96796949	96308192		
S3.120.600.1000.6.70E.S.402...	10	96796980			96782486
S3.120.600.1000.6.70E.C.402...	10	96796981			96782486
S3.120.600.1000.6.70E.D.402...	10	96796982		96308245	
S3.120.600.1000.6.70E.H.402...	10	96796984	96308192		
S3.120.600.1300.6.70E.S.426...	10	96797000			96782486
S3.120.600.1300.6.70E.C.426...	10	96797001			96782486
S3.120.600.1300.6.70E.D.426...	10	96797002		96308245	
S3.120.600.1300.6.70E.H.426...	10	96797004	96308192		

¹ The horizontal base stand is included in the pump product number.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Cast iron, 3 x 415 V - Australia

Note: Pumps with 15 m cable are installed with PTC thermal protection.

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.80.200.850.4.70H.S.448...	15	99442155			96641489
S1.80.200.850.4.70H.C.448...	15	99442156			96641489
S1.80.200.850.4.70H.D.448...	15	99442157		96308240	
S1.80.200.850.4.70H.H.448...	15	99442158	96308212		
S2.90.200.1150.4.70S.S.462...	15	96810602			96641489
S2.90.200.1150.4.70S.C.462...	15	96810603			96641489
S2.90.200.1150.4.70S.D.462...	15	96810604		96308240	
S2.90.200.1150.4.70S.H.462...	15	96810605	96308192		
S2.90.200.1600.4.70S.S.480...	15	96810618			96641489
S2.90.200.1600.4.70S.C.480...	15	96810619			96641489
S2.90.200.1600.4.70S.D.480...	15	96810620		96308240	
S2.90.200.1600.4.70S.H.480...	15	96810621	96308192		
S2.100.200.1150.4.70H.S.404...	15	96810594			96641489
S2.100.200.1150.4.70H.C.404...	15	96810595			96641489
S2.100.200.1150.4.70H.D.404...	15	96810596		96308240	
S2.100.200.1150.4.70H.H.404...	15	96810597	96308212		
S2.100.200.1600.4.70H.S.430...	15	96810606			96641489
S2.100.200.1600.4.70H.C.430...	15	96810607			96641489
S2.100.200.1600.4.70H.D.430...	15	96810608		96308240	
S2.100.200.1600.4.70H.H.430...	15	96810609	96308212		
S2.110.200.850.4.70M.S.375...	15	96810390			96641489
S2.110.200.850.4.70M.C.375...	15	96810391			96641489
S2.110.200.850.4.70M.D.375...	15	96810532		96308240	
S2.110.200.850.4.70M.H.375...	15	96810533	96308212		
S2.110.200.1150.4.70M.S.416...	15	96810598			96641489
S2.110.200.1150.4.70M.C.416...	15	96810599			96641489
S2.110.200.1150.4.70M.D.416...	15	96810600		96308240	
S2.110.200.1150.4.70M.H.416...	15	96810601	96308212		
S2.110.200.1600.4.70M.S.441...	15	96810614			96641489
S2.110.200.1600.4.70M.C.441...	15	96810615			96641489
S2.110.200.1600.4.70M.D.441...	15	96810616		96308240	
S2.110.200.1600.4.70M.H.441...	15	96810617	96308212		
S2.105.250.650.8.70H.S.538...	15	99442965			96782483
S2.105.250.650.8.70H.C.538...	15	99442966			96782483
S2.105.250.650.8.70H.D.538...	15	99442967		96308241	
S2.105.250.650.8.70H.H.538...	15	99442968	96308192		
S2.120.250.800.6.70H.S.465...	15	96810550			96782483
S2.120.250.800.6.70H.C.465...	15	96810551			96782483
S2.120.250.800.6.70H.D.465...	15	96810552		96308241	
S2.120.250.800.6.70H.H.465...	15	96810553	96308192		
S2.120.250.1000.6.70H.S.500...	15	96810562			96782483
S2.120.250.1000.6.70H.C.500...	15	96810563			96782483
S2.120.250.1000.6.70H.D.500...	15	96810564		96308241	
S2.120.250.1000.6.70H.H.500...	15	96810565	96308192		
S2.120.250.1300.6.70H.S.528...	15	96810578			96782483
S2.120.250.1300.6.70H.C.528...	15	96810579			96782483
S2.120.250.1300.6.70H.D.528...	15	96810580		96308241	
S2.120.250.1300.6.70H.H.528...	15	96810581	96308192		
S2.120.250.1600.4.70L.S.402...	15	96810610			96782483
S2.120.250.1600.4.70L.C.402...	15	96810611			96782483
S2.120.250.1600.4.70L.D.402...	15	96810612		96308241	
S2.120.250.1600.4.70L.H.402...	15	96810613	96308212		
S3.110.500.650.8.70L.S.464...	15	96810538			96782485
S3.110.500.650.8.70L.C.464...	15	96810539			96782485
S3.110.500.650.8.70L.D.464...	15	96810540		96308244	
S3.110.500.650.8.70L.H.464...	15	96810541	96308192		
S3.110.500.800.6.70L.S.370...	15	96810554			96782485
S3.110.500.800.6.70L.C.370...	15	96810555			96782485
S3.110.500.800.6.70L.D.370...	15	96810556		96308244	
S3.110.500.800.6.70L.H.370...	15	96810557	96308192		
S3.110.500.1000.6.70L.S.402...	15	96810566			96782485
S3.110.500.1000.6.70L.C.402...	15	96810567			96782485
S3.110.500.1000.6.70L.D.402...	15	96810568		96308244	
S3.110.500.1000.6.70L.H.402...	15	96810569	96308192		

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S3.110.500.1300.6.70L.S.442...	15	96810582			96782485
S3.110.500.1300.6.70L.C.442...	15	96810583			96782485
S3.110.500.1300.6.70L.D.442...	15	96810584		96308244	
S3.110.500.1300.6.70L.H.442...	15	96810585	96308192		
S3.120.300.650.8.70M.S.464...	15	96810542			96782484
S3.120.300.650.8.70M.C.464...	15	96810543			96782484
S3.120.300.650.8.70M.D.464...	15	96810544		96308241	
S3.120.300.650.8.70M.H.464...	15	96810545	96308192		
S3.120.300.800.6.70M.S.407...	15	96810558			96782484
S3.120.300.800.6.70M.C.407...	15	96810559			96782484
S3.120.300.800.6.70M.D.407...	15	96810560		96308241	
S3.120.300.800.6.70M.H.407...	15	96810561	96308255		
S3.120.300.1000.6.70M.S.428...	15	96810570			96782484
S3.120.300.1000.6.70M.C.428...	15	96810571			96782484
S3.120.300.1000.6.70M.D.428...	15	96810572		96308241	
S3.120.300.1000.6.70M.H.428...	15	96810573	96308255		
S3.120.300.1300.6.70M.S.456...	15	96810586			96782484
S3.120.300.1300.6.70M.C.456...	15	96810587			96782484
S3.120.300.1300.6.70M.D.456...	15	96810588		96308241	
S3.120.300.1300.6.70M.H.456...	15	96810589	96308192		
S3.120.600.650.8.70E.S.459...	15	96810546			96782486
S3.120.600.650.8.70E.C.459...	15	96810547			96782486
S3.120.600.650.8.70E.D.459...	15	96810548		96308245	
S3.120.600.650.8.70E.H.459...	15	96810549	96308192		
S3.120.600.1000.6.70E.S.402...	15	96810574			96782486
S3.120.600.1000.6.70E.C.402...	15	96810575			96782486
S3.120.600.1000.6.70E.D.402...	15	96810576		96308245	
S3.120.600.1000.6.70E.H.402...	15	96810577	96308192		
S3.120.600.1300.6.70E.S.426...	15	96810590			96782486
S3.120.600.1300.6.70E.C.426...	15	96810591			96782486
S3.120.600.1300.6.70E.D.426...	15	96810592		96308245	
S3.120.600.1300.6.70E.H.426...	15	96810593	96308192		

¹ The horizontal base stand is included in the pump product number.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Stainless steel impeller, 3 x 400/690 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.100.200.850.4.70H.S.432.Q.N.D...	10	96811767			96641489
S1.100.200.850.4.70H.C.432.Q.N.D...	10	96811768			96641489
S1.100.200.850.4.70H.D.432.Q.N.D...	10	96811769		96308240	
S1.100.200.850.4.70H.H.432.Q.N.D...	10	96811770	96308212		
S2.90.200.1150.4.70S.S.462.Q.N.D...	10	96811843			96641489
S2.90.200.1150.4.70S.C.462.Q.N.D...	10	96811844			96641489
S2.90.200.1150.4.70S.D.462.Q.N.D...	10	96811845		96308240	
S2.90.200.1150.4.70S.H.462.Q.N.D...	10	96811846	96308192		
S2.90.200.1600.4.70S.S.480.Q.N.D...	10	96811859			96641489
S2.90.200.1600.4.70S.C.480.Q.N.D...	10	96811860			96641489
S2.90.200.1600.4.70S.D.480.Q.N.D...	10	96811861		96308240	
S2.90.200.1600.4.70S.H.480.Q.N.D...	10	96811862	96308192		
S2.100.200.1150.4.70H.S.404.Q.N.D...	10	96811835			96641489
S2.100.200.1150.4.70H.C.404.Q.N.D...	10	96811836			96641489
S2.100.200.1150.4.70H.D.404.Q.N.D...	10	96811837		96308240	
S2.100.200.1150.4.70H.H.404.Q.N.D...	10	96811838	96308212		
S2.100.200.1600.4.70H.S.430.Q.N.D...	10	96811847			96641489
S2.100.200.1600.4.70H.C.430.Q.N.D...	10	96811848			96641489
S2.100.200.1600.4.70H.D.430.Q.N.D...	10	96811849		96308240	
S2.100.200.1600.4.70H.H.430.Q.N.D...	10	96811850	96308212		
S2.110.200.850.4.70M.S.375.Q.N.D...	10	96811771			96641489
S2.110.200.850.4.70M.C.375.Q.N.D...	10	96811772			96641489
S2.110.200.850.4.70M.D.375.Q.N.D...	10	96811773		96308240	
S2.110.200.850.4.70M.H.375.Q.N.D...	10	96811774	96308212		
S2.110.200.1150.4.70M.S.416.Q.N.D...	10	96811839			96641489
S2.110.200.1150.4.70M.C.416.Q.N.D...	10	96811840			96641489
S2.110.200.1150.4.70M.D.416.Q.N.D...	10	96811841		96308240	
S2.110.200.1150.4.70M.H.416.Q.N.D...	10	96811842	96308212		
S2.110.200.1600.4.70M.S.441.Q.N.D...	10	96811855			96641489
S2.110.200.1600.4.70M.C.441.Q.N.D...	10	96811856			96641489
S2.110.200.1600.4.70M.D.441.Q.N.D...	10	96811857		96308240	
S2.110.200.1600.4.70M.H.441.Q.N.D...	10	96811858	96308212		
S2.120.250.650.8.70H.S.534.Q.N.D...	10	96811775			96782483
S2.120.250.650.8.70H.C.534.Q.N.D...	10	96811776			96782483
S2.120.250.650.8.70H.D.534.Q.N.D...	10	96811777		96308241	
S2.120.250.650.8.70H.H.534.Q.N.D...	10	96811778	96308192		
S2.120.250.800.6.70H.S.465.Q.N.D...	10	96811791			96782483
S2.120.250.800.6.70H.C.465.Q.N.D...	10	96811792			96782483
S2.120.250.800.6.70H.D.465.Q.N.D...	10	96811793		96308241	
S2.120.250.800.6.70H.H.465.Q.N.D...	10	96811794	96308192		
S2.120.250.1000.6.70H.S.500.Q.N.D...	10	96811803			96782483
S2.120.250.1000.6.70H.C.500.Q.N.D...	10	96811804			96782483
S2.120.250.1000.6.70H.D.500.Q.N.D...	10	96811805		96308241	
S2.120.250.1000.6.70H.H.500.Q.N.D...	10	96811806	96308192		
S2.120.250.1300.6.70H.S.528.Q.N.D...	10	96811819			96782483
S2.120.250.1300.6.70H.C.528.Q.N.D...	10	96811820			96782483
S2.120.250.1300.6.70H.D.528.Q.N.D...	10	96811821		96308241	
S2.120.250.1300.6.70H.H.528.Q.N.D...	10	96811822	96308192		
S2.120.250.1600.4.70L.S.402.Q.N.D...	10	96811851			96782483
S2.120.250.1600.4.70L.C.402.Q.N.D...	10	96811852			96782483
S2.120.250.1600.4.70L.D.402.Q.N.D...	10	96811853		96308241	
S2.120.250.1600.4.70L.H.402.Q.N.D...	10	96811854	96308212		
S3.110.500.650.8.70L.S.464.Q.N.D...	10	96811779			96782485
S3.110.500.650.8.70L.C.464.Q.N.D...	10	96811780			96782485
S3.110.500.650.8.70L.D.464.Q.N.D...	10	96811781		96308244	
S3.110.500.650.8.70L.H.464.Q.N.D...	10	96811782	96308192		
S3.110.500.800.6.70L.S.370.Q.N.D...	10	96811795			96782485
S3.110.500.800.6.70L.C.370.Q.N.D...	10	96811796			96782485
S3.110.500.800.6.70L.D.370.Q.N.D...	10	96811797		96308244	
S3.110.500.800.6.70L.H.370.Q.N.D...	10	96811798	96308192		
S3.110.500.1000.6.70L.S.402.Q.N.D...	10	96811807			96782485
S3.110.500.1000.6.70L.C.402.Q.N.D...	10	96811808			96782485
S3.110.500.1000.6.70L.D.402.Q.N.D...	10	96811809		96308244	
S3.110.500.1000.6.70L.H.402.Q.N.D...	10	96811810	96308192		
S3.110.500.1300.6.70L.S.442.Q.N.D...	10	96811823			96782485

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S3.110.500.1300.6.70L.C.442.Q.N.D...	10	96811824			96782485
S3.110.500.1300.6.70L.D.442.Q.N.D...	10	96811825		96308244	
S3.110.500.1300.6.70L.H.442.Q.N.D...	10	96811826	96308192		
S3.120.300.650.8.70M.S.464.Q.N.D...	10	96811783			96782484
S3.120.300.650.8.70M.C.464.Q.N.D...	10	96811784			96782484
S3.120.300.650.8.70M.D.464.Q.N.D...	10	96811785		96308241	
S3.120.300.650.8.70M.H.464.Q.N.D...	10	96811786	96308192		
S3.120.300.800.6.70M.S.407.Q.N.D...	10	96811799			96782484
S3.120.300.800.6.70M.C.407.Q.N.D...	10	96811800			96782484
S3.120.300.800.6.70M.D.407.Q.N.D...	10	96811801		96308241	
S3.120.300.800.6.70M.H.407.Q.N.D...	10	96811802	96308255		
S3.120.300.1000.6.70M.S.428.Q.N.D...	10	96811811			96782484
S3.120.300.1000.6.70M.C.428.Q.N.D...	10	96811812			96782484
S3.120.300.1000.6.70M.D.428.Q.N.D...	10	96811813		96308241	
S3.120.300.1000.6.70M.H.428.Q.N.D...	10	96811814	96308255		
S3.120.300.1300.6.70M.S.456.Q.N.D...	10	96811827			96782484
S3.120.300.1300.6.70M.C.456.Q.N.D...	10	96811828			96782484
S3.120.300.1300.6.70M.D.456.Q.N.D...	10	96811829		96308241	
S3.120.300.1300.6.70M.H.456.Q.N.D...	10	96811830	96308192		
S3.120.600.650.8.70E.S.459.Q.N.D...	10	96811787			96782486
S3.120.600.650.8.70E.C.459.Q.N.D...	10	96811788			96782486
S3.120.600.650.8.70E.D.459.Q.N.D...	10	96811789		96308245	
S3.120.600.650.8.70E.H.459.Q.N.D...	10	96811790	96308192		
S3.120.600.1000.6.70E.S.402.Q.N.D...	10	96811815			96782486
S3.120.600.1000.6.70E.C.402.Q.N.D...	10	96811816			96782486
S3.120.600.1000.6.70E.D.402.Q.N.D...	10	96811817		96308245	
S3.120.600.1000.6.70E.H.402.Q.N.D...	10	96811818	96308192		
S3.120.600.1300.6.70E.S.426.Q.N.D...	10	96811831			96782486
S3.120.600.1300.6.70E.C.426.Q.N.D...	10	96811832			96782486
S3.120.600.1300.6.70E.D.426.Q.N.D...	10	96811833		96308245	
S3.120.600.1300.6.70E.H.426.Q.N.D...	10	96811834	96308192		

¹ The horizontal base stand is included in the pump product number.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Explosion-proof pumps

Cast iron, 3 x 400/690 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.80.200.850.4.70H.S.448.G.EX.D...	10	99442143			96641489
S1.80.200.850.4.70H.C.448.G.EX.D...	10	99442144			96641489
S1.80.200.850.4.70H.H.448.G.EX.D...	10	99442146	96308212		
S1.80.200.850.4.70H.D.448.G.EX.D...	10	99442145		96308240	
S2.90.200.1150.4.70S.S.462.G.EX.D...	10	95112993			96641489
S2.90.200.1150.4.70S.C.462.G.EX.D...	10	95112994			96641489
S2.90.200.1150.4.70S.H.462.G.EX.D...	10	95112995	96308192		
S2.90.200.1150.4.70S.D.462.G.EX.D...	10	96797794		96308240	
S2.90.200.1600.4.70S.S.480.G.EX.D...	10	95112999			96641489
S2.90.200.1600.4.70S.C.480.G.EX.D...	10	95113000			96641489
S2.90.200.1600.4.70S.H.480.G.EX.D...	10	95113001	96308192		
S2.90.200.1600.4.70S.D.480.G.EX.D...	10	96797804		96308240	
S2.100.200.1150.4.70H.S.404.G.EX.D...	10	95112987			96641489
S2.100.200.1150.4.70H.C.404.G.EX.D...	10	95112988			96641489
S2.100.200.1150.4.70H.H.404.G.EX.D...	10	95112989	96308212		
S2.100.200.1150.4.70H.D.404.G.EX.D...	10	96797784		96308240	
S2.100.200.1600.4.70H.S.430.G.EX.D...	10	95113002			96641489
S2.100.200.1600.4.70H.C.430.G.EX.D...	10	95113003			96641489
S2.100.200.1600.4.70H.H.430.G.EX.D...	10	95113004	96308212		
S2.100.200.1600.4.70H.D.430.G.EX.D...	10	96797809		96308240	
S2.110.200.850.4.70M.S.375.G.EX.D...	10	95113017			96641489
S2.110.200.850.4.70M.C.375.G.EX.D...	10	95113018			96641489
S2.110.200.850.4.70M.H.375.G.EX.D...	10	95113019	96308212		
S2.110.200.850.4.70M.D.375.G.EX.D...	10	96797834		96308240	
S2.110.200.1150.4.70M.S.416.G.EX.D...	10	95112990			96641489
S2.110.200.1150.4.70M.C.416.G.EX.D...	10	95112991			96641489
S2.110.200.1150.4.70M.H.416.G.EX.D...	10	95112992	96308212		
S2.110.200.1150.4.70M.D.416.G.EX.D...	10	96797789		96308240	
S2.110.200.1600.4.70M.S.441.G.EX.D...	10	95113008			96641489
S2.110.200.1600.4.70M.C.441.G.EX.D...	10	95113009			96641489
S2.110.200.1600.4.70M.H.441.G.EX.D...	10	95113010	96308212		
S2.110.200.1600.4.70M.D.441.G.EX.D...	10	96797819		96308240	
S2.105.250.650.8.70H.S.538.G.EX.D...	10	99442969			96782483
S2.105.250.650.8.70H.C.538.G.EX.D...	10	99442970			96782483
S2.105.250.650.8.70H.D.538.G.EX.D...	10	99442971		96308241	
S2.105.250.650.8.70H.H.538.G.EX.D...	10	99442972	96308192		
S2.120.250.800.6.70H.S.465.G.EX.D...	10	95113014			96782483
S2.120.250.800.6.70H.C.465.G.EX.D...	10	95113015			96782483
S2.120.250.800.6.70H.D.465.G.EX.D...	10	95113016		96308241	
S2.120.250.800.6.70H.H.465.G.EX.D...	10	96797830	96308192		
S2.120.250.1000.6.70H.S.500.G.EX.D...	10	95112984			96782483
S2.120.250.1000.6.70H.C.500.G.EX.D...	10	95112985			96782483
S2.120.250.1000.6.70H.H.500.G.EX.D...	10	95112986	96308192		
S2.120.250.1000.6.70H.D.500.G.EX.D...	10	96797779		96308241	
S2.120.250.1300.6.70H.S.528.G.EX.D...	10	95112996			96782483
S2.120.250.1300.6.70H.C.528.G.EX.D...	10	95112997			96782483
S2.120.250.1300.6.70H.D.528.G.EX.D...	10	95112998		96308241	
S2.120.250.1300.6.70H.H.528.G.EX.D...	10	96797800	96308192		
S2.120.250.1600.4.70L.S.402.G.EX.D...	10	95113005			96782483
S2.120.250.1600.4.70L.C.402.G.EX.D...	10	95113006			96782483
S2.120.250.1600.4.70L.D.402.G.EX.D...	10	95113007		96308241	
S2.120.250.1600.4.70L.H.402.G.EX.D...	10	96797815	96308212		
S3.110.500.650.8.70L.S.464.G.EX.D...	10	95113041			96782485
S3.110.500.650.8.70L.C.464.G.EX.D...	10	95113042			96782485
S3.110.500.650.8.70L.D.464.G.EX.D...	10	95113043		96308244	
S3.110.500.650.8.70L.H.464.G.EX.D...	10	96797875	96308192		
S3.110.500.800.6.70L.S.370.G.EX.D...	10	95113047			96782485
S3.110.500.800.6.70L.C.370.G.EX.D...	10	95113048			96782485
S3.110.500.800.6.70L.D.370.G.EX.D...	10	95113049		96308244	
S3.110.500.800.6.70L.H.370.G.EX.D...	10	96797885	96308192		
S3.110.500.1000.6.70L.S.402.G.EX.D...	10	95113020			96782485
S3.110.500.1000.6.70L.C.402.G.EX.D...	10	95113021			96782485

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S3.110.500.1000.6.70L.D.402.G.EX.D...	10	95113022		96308244	
S3.110.500.1000.6.70L.H.402.G.EX.D...	10	96797840	96308192		
S3.110.500.1300.6.70L.S.442.G.EX.D...	10	95113032			96782485
S3.110.500.1300.6.70L.C.442.G.EX.D...	10	95113033			96782485
S3.110.500.1300.6.70L.D.442.G.EX.D...	10	95113034		96308244	
S3.110.500.1300.6.70L.H.442.G.EX.D...	10	96797860	96308192		
S3.120.300.650.8.70M.S.464.G.EX.D...	10	95113044			96782484
S3.120.300.650.8.70M.C.464.G.EX.D...	10	95113045			96782484
S3.120.300.650.8.70M.D.464.G.EX.D...	10	95113046		96308241	
S3.120.300.650.8.70M.H.464.G.EX.D...	10	96797880	96308192		
S3.120.300.800.6.70M.S.407.G.EX.D...	10	95113050			96782484
S3.120.300.800.6.70M.C.407.G.EX.D...	10	95113051			96782484
S3.120.300.800.6.70M.D.407.G.EX.D...	10	95113052		96308241	
S3.120.300.800.6.70M.H.407.G.EX.D...	10	96797890	96308255		
S3.120.300.1000.6.70M.S.428.G.EX.D...	10	95113023			96782484
S3.120.300.1000.6.70M.C.428.G.EX.D...	10	95113024			96782484
S3.120.300.1000.6.70M.D.428.G.EX.D...	10	95113025		96308241	
S3.120.300.1000.6.70M.H.428.G.EX.D...	10	96797845	96308255		
S3.120.300.1300.6.70M.S.456.G.EX.D...	10	95113035			96782484
S3.120.300.1300.6.70M.C.456.G.EX.D...	10	95113036			96782484
S3.120.300.1300.6.70M.D.456.G.EX.D...	10	95113037		96308241	
S3.120.300.1300.6.70M.H.456.G.EX.D...	10	96797865	96308192		
S3.120.600.650.8.70E.S.459.G.EX.D...	10	95113038			96782486
S3.120.600.650.8.70E.C.459.G.EX.D...	10	95113039			96782486
S3.120.600.650.8.70E.D.459.G.EX.D...	10	95113040		96308245	
S3.120.600.650.8.70E.H.459.G.EX.D...	10	96797870	96308192		
S3.120.600.1000.6.70E.S.402.G.EX.D...	10	95113026			96782486
S3.120.600.1000.6.70E.C.402.G.EX.D...	10	95113027			96782486
S3.120.600.1000.6.70E.D.402.G.EX.D...	10	95113028		96308245	
S3.120.600.1000.6.70E.H.402.G.EX.D...	10	96797850	96308192		
S3.120.600.1300.6.70E.S.426.G.EX.D...	10	95113029			96782486
S3.120.600.1300.6.70E.C.426.G.EX.D...	10	95113030			96782486
S3.120.600.1300.6.70E.D.426.G.EX.D...	10	95113031		96308245	
S3.120.600.1300.6.70E.H.426.G.EX.D...	10	96797855	96308192		

¹ The horizontal base stand is included in the pump product number.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Cast iron, 3 x 415 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.80.200.850.4.70H.S.448.G.EX.D...	10	99442151			96641489
S1.80.200.850.4.70H.C.448.G.EX.D...	10	99442152			96641489
S1.80.200.850.4.70H.H.448.G.EX.D...	10	99442153		96308240	
S1.80.200.850.4.70H.D.448.G.EX.D...	10	99442154	96308212		
S2.90.200.1150.4.70S.S.462.G.EX.D...	10	96797792			96641489
S2.90.200.1150.4.70S.C.462.G.EX.D...	10	96797793			96641489
S2.90.200.1150.4.70S.D.462.G.EX.D...	10	96797795		96308240	
S2.90.200.1150.4.70S.H.462.G.EX.D...	10	96797796	96308192		
S2.90.200.1600.4.70S.S.480.G.EX.D...	10	96797802			96641489
S2.90.200.1600.4.70S.C.480.G.EX.D...	10	96797803			96641489
S2.90.200.1600.4.70S.D.480.G.EX.D...	10	96797805		96308240	
S2.90.200.1600.4.70S.H.480.G.EX.D...	10	96797806	96308192		
S2.100.200.1150.4.70H.S.404.G.EX.D...	10	96797782			96641489
S2.100.200.1150.4.70H.C.404.G.EX.D...	10	96797783			96641489
S2.100.200.1150.4.70H.D.404.G.EX.D...	10	96797785		96308240	
S2.100.200.1150.4.70H.H.404.G.EX.D...	10	96797786	96308212		
S2.100.200.1600.4.70H.S.430.G.EX.D...	10	96797807			96641489
S2.100.200.1600.4.70H.C.430.G.EX.D...	10	96797808			96641489
S2.100.200.1600.4.70H.D.430.G.EX.D...	10	96797810		96308240	
S2.100.200.1600.4.70H.H.430.G.EX.D...	10	96797811	96308212		
S2.110.200.850.4.70M.S.375.G.EX.D...	10	96797832			96641489
S2.110.200.850.4.70M.C.375.G.EX.D...	10	96797833			96641489
S2.110.200.850.4.70M.D.375.G.EX.D...	10	96797835		96308240	
S2.110.200.850.4.70M.H.375.G.EX.D...	10	96797836	96308212		
S2.110.200.1150.4.70M.S.416.G.EX.D...	10	96797787			96641489
S2.110.200.1150.4.70M.C.416.G.EX.D...	10	96797788			96641489
S2.110.200.1150.4.70M.D.416.G.EX.D...	10	96797790		96308240	
S2.110.200.1150.4.70M.H.416.G.EX.D...	10	96797791	96308212		
S2.110.200.1600.4.70M.S.441.G.EX.D...	10	96797817			96641489
S2.110.200.1600.4.70M.C.441.G.EX.D...	10	96797818			96641489
S2.110.200.1600.4.70M.D.441.G.EX.D...	10	96797820		96308240	
S2.110.200.1600.4.70M.H.441.G.EX.D...	10	96797821	96308212		
S2.105.250.650.8.70H.S.538.G.EX.D...	10	99442973			96782483
S2.105.250.650.8.70H.C.538.G.EX.D...	10	99442974			96782483
S2.105.250.650.8.70H.D.538.G.EX.D...	10	99442975		96308241	
S2.105.250.650.8.70H.H.538.G.EX.D...	10	99442976	96308192		
S2.120.250.800.6.70H.S.465.G.EX.D...	10	96797827			96782483
S2.120.250.800.6.70H.C.465.G.EX.D...	10	96797828			96782483
S2.120.250.800.6.70H.D.465.G.EX.D...	10	96797829		96308241	
S2.120.250.800.6.70H.H.465.G.EX.D...	10	96797831	96308192		
S2.120.250.1000.6.70H.S.500.G.EX.D...	10	96797777			96782483
S2.120.250.1000.6.70H.C.500.G.EX.D...	10	96797778			96782483
S2.120.250.1000.6.70H.D.500.G.EX.D...	10	96797780		96308241	
S2.120.250.1000.6.70H.H.500.G.EX.D...	10	96797781	96308192		
S2.120.250.1300.6.70H.S.528.G.EX.D...	10	96797797			96782483
S2.120.250.1300.6.70H.C.528.G.EX.D...	10	96797798			96782483
S2.120.250.1300.6.70H.D.528.G.EX.D...	10	96797799		96308241	
S2.120.250.1300.6.70H.H.528.G.EX.D...	10	96797801	96308192		
S2.120.250.1600.4.70L.S.402.G.EX.D...	10	96797812			96782483
S2.120.250.1600.4.70L.C.402.G.EX.D...	10	96797813			96782483
S2.120.250.1600.4.70L.D.402.G.EX.D...	10	96797814		96308241	
S2.120.250.1600.4.70L.H.402.G.EX.D...	10	96797816	96308212		
S3.110.500.650.8.70L.S.464.G.EX.D...	10	96797872			96782485
S3.110.500.650.8.70L.C.464.G.EX.D...	10	96797873			96782485
S3.110.500.650.8.70L.D.464.G.EX.D...	10	96797874		96308244	
S3.110.500.650.8.70L.H.464.G.EX.D...	10	96797876	96308192		
S3.110.500.800.6.70L.S.370.G.EX.D...	10	96797882			96782485
S3.110.500.800.6.70L.C.370.G.EX.D...	10	96797883			96782485
S3.110.500.800.6.70L.D.370.G.EX.D...	10	96797884		96308244	
S3.110.500.800.6.70L.H.370.G.EX.D...	10	96797886	96308192		
S3.110.500.1000.6.70L.S.402.G.EX.D...	10	96797837			96782485
S3.110.500.1000.6.70L.C.402.G.EX.D...	10	96797838			96782485
S3.110.500.1000.6.70L.D.402.G.EX.D...	10	96797839		96308244	
S3.110.500.1000.6.70L.H.402.G.EX.D...	10	96797841	96308192		
S3.110.500.1300.6.70L.S.442.G.EX.D...	10	96797857			96782485

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S3.110.500.1300.6.70L.C.442.G.EX.D...	10	96797858			96782485
S3.110.500.1300.6.70L.D.442.G.EX.D...	10	96797859		96308244	
S3.110.500.1300.6.70L.H.442.G.EX.D...	10	96797861	96308192		
S3.120.300.650.8.70M.S.464.G.EX.D...	10	96797877			96782484
S3.120.300.650.8.70M.C.464.G.EX.D...	10	96797878			96782484
S3.120.300.650.8.70M.D.464.G.EX.D...	10	96797879		96308241	
S3.120.300.650.8.70M.H.464.G.EX.D...	10	96797881	96308192		
S3.120.300.800.6.70M.S.407.G.EX.D...	10	96797887			96782484
S3.120.300.800.6.70M.C.407.G.EX.D...	10	96797888			96782484
S3.120.300.800.6.70M.D.407.G.EX.D...	10	96797889		96308241	
S3.120.300.800.6.70M.H.407.G.EX.D...	10	96797891	96308255		
S3.120.300.1000.6.70M.S.428.G.EX.D...	10	96797842			96782484
S3.120.300.1000.6.70M.C.428.G.EX.D...	10	96797843			96782484
S3.120.300.1000.6.70M.D.428.G.EX.D...	10	96797844		96308241	
S3.120.300.1000.6.70M.H.428.G.EX.D...	10	96797846	96308255		
S3.120.300.1300.6.70M.S.456.G.EX.D...	10	96797862			96782484
S3.120.300.1300.6.70M.C.456.G.EX.D...	10	96797863			96782484
S3.120.300.1300.6.70M.D.456.G.EX.D...	10	96797864		96308241	
S3.120.300.1300.6.70M.H.456.G.EX.D...	10	96797866	96308192		
S3.120.600.650.8.70E.S.459.G.EX.D...	10	96797867			96782486
S3.120.600.650.8.70E.C.459.G.EX.D...	10	96797868			96782486
S3.120.600.650.8.70E.D.459.G.EX.D...	10	96797869		96308245	
S3.120.600.650.8.70E.H.459.G.EX.D...	10	96797871	96308192		
S3.120.600.1000.6.70E.S.402.G.EX.D...	10	96797847			96782486
S3.120.600.1000.6.70E.C.402.G.EX.D...	10	96797848			96782486
S3.120.600.1000.6.70E.D.402.G.EX.D...	10	96797849		96308245	
S3.120.600.1000.6.70E.H.402.G.EX.D...	10	96797851	96308192		
S3.120.600.1300.6.70E.S.426.G.EX.D...	10	96797852			96782486
S3.120.600.1300.6.70E.C.426.G.EX.D...	10	96797853			96782486
S3.120.600.1300.6.70E.D.426.G.EX.D...	10	96797854		96308245	
S3.120.600.1300.6.70E.H.426.G.EX.D...	10	96797856	96308192		

¹ The horizontal base stand is included in the pump product number.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Stainless steel impeller, 3 x 400/690 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.100.200.850.4.70H.S.432.Q.EX.D...	10	96811863			96641489
S1.100.200.850.4.70H.C.432.Q.EX.D...	10	96811864			96641489
S1.100.200.850.4.70H.D.432.Q.EX.D...	10	96811865		96308240	
S1.100.200.850.4.70H.H.432.Q.EX.D...	10	96811866	96308212		
S2.90.200.1150.4.70S.S.462.Q.EX.D...	10	96811879			96641489
S2.90.200.1150.4.70S.C.462.Q.EX.D...	10	96811880			96641489
S2.90.200.1150.4.70S.D.462.Q.EX.D...	10	96811881		96308240	
S2.90.200.1150.4.70S.H.462.Q.EX.D...	10	96811882	96308192		
S2.90.200.1600.4.70S.S.480.Q.EX.D...	10	96811887			96641489
S2.90.200.1600.4.70S.C.480.Q.EX.D...	10	96811888			96641489
S2.90.200.1600.4.70S.D.480.Q.EX.D...	10	96811889		96308240	
S2.90.200.1600.4.70S.H.480.Q.EX.D...	10	96811890	96308192		
S2.100.200.1150.4.70H.S.404.Q.EX.D...	10	96811871			96641489
S2.100.200.1150.4.70H.C.404.Q.EX.D...	10	96811872			96641489
S2.100.200.1150.4.70H.D.404.Q.EX.D...	10	96811873		96308240	
S2.100.200.1150.4.70H.H.404.Q.EX.D...	10	96811874	96308212		
S2.100.200.1600.4.70H.S.430.Q.EX.D...	10	96811891			96641489
S2.100.200.1600.4.70H.C.430.Q.EX.D...	10	96811892			96641489
S2.100.200.1600.4.70H.D.430.Q.EX.D...	10	96811893		96308240	
S2.100.200.1600.4.70H.H.430.Q.EX.D...	10	96811894	96308212		
S2.110.200.850.4.70M.S.375.Q.EX.D...	10	96811911			96641489
S2.110.200.850.4.70M.C.375.Q.EX.D...	10	96811912			96641489
S2.110.200.850.4.70M.D.375.Q.EX.D...	10	96811913		96308240	
S2.110.200.850.4.70M.H.375.Q.EX.D...	10	96811914	96308212		
S2.110.200.1150.4.70M.S.416.Q.EX.D...	10	96811875			96641489
S2.110.200.1150.4.70M.C.416.Q.EX.D...	10	96811876			96641489
S2.110.200.1150.4.70M.D.416.Q.EX.D...	10	96811877		96308240	
S2.110.200.1150.4.70M.H.416.Q.EX.D...	10	96811878	96308212		
S2.110.200.1600.4.70M.S.441.Q.EX.D...	10	96811899			96641489
S2.110.200.1600.4.70M.C.441.Q.EX.D...	10	96811900			96641489
S2.110.200.1600.4.70M.D.441.Q.EX.D...	10	96811901		96308240	
S2.110.200.1600.4.70M.H.441.Q.EX.D...	10	96811902	96308212		
S2.120.250.650.8.70H.S.534.Q.EX.D...	10	96811903			96782483
S2.120.250.650.8.70H.C.534.Q.EX.D...	10	96811904			96782483
S2.120.250.650.8.70H.D.534.Q.EX.D...	10	96811905		96308241	
S2.120.250.650.8.70H.H.534.Q.EX.D...	10	96811906	96308192		
S2.120.250.800.6.70H.S.465.Q.EX.D...	10	96811907			96782483
S2.120.250.800.6.70H.C.465.Q.EX.D...	10	96811908			96782483
S2.120.250.800.6.70H.D.465.Q.EX.D...	10	96811909		96308241	
S2.120.250.800.6.70H.H.465.Q.EX.D...	10	96811910	96308192		
S2.120.250.1000.6.70H.S.500.Q.EX.D...	10	96811867			96782483
S2.120.250.1000.6.70H.C.500.Q.EX.D...	10	96811868			96782483
S2.120.250.1000.6.70H.D.500.Q.EX.D...	10	96811869		96308241	
S2.120.250.1000.6.70H.H.500.Q.EX.D...	10	96811870	96308192		
S2.120.250.1300.6.70H.S.528.Q.EX.D...	10	96811883			96782483
S2.120.250.1300.6.70H.C.528.Q.EX.D...	10	96811884			96782483
S2.120.250.1300.6.70H.D.528.Q.EX.D...	10	96811885		96308241	
S2.120.250.1300.6.70H.H.528.Q.EX.D...	10	96811886	96308192		
S2.120.250.1600.4.70L.S.402.Q.EX.D...	10	96811895			96782483
S2.120.250.1600.4.70L.C.402.Q.EX.D...	10	96811896			96782483
S2.120.250.1600.4.70L.D.402.Q.EX.D...	10	96811897		96308241	
S2.120.250.1600.4.70L.H.402.Q.EX.D...	10	96811898	96308212		
S3.110.500.650.8.70L.S.464.Q.EX.D...	10	96811943			96782485
S3.110.500.650.8.70L.C.464.Q.EX.D...	10	96811944			96782485
S3.110.500.650.8.70L.D.464.Q.EX.D...	10	96811945		96308244	
S3.110.500.650.8.70L.H.464.Q.EX.D...	10	96811946	96308192		
S3.110.500.800.6.70L.S.370.Q.EX.D...	10	96811951			96782485
S3.110.500.800.6.70L.C.370.Q.EX.D...	10	96811952			96782485
S3.110.500.800.6.70L.D.370.Q.EX.D...	10	96811953		96308244	
S3.110.500.800.6.70L.H.370.Q.EX.D...	10	96811954	96308192		
S3.110.500.1000.6.70L.S.402.Q.EX.D...	10	96811915			96782485
S3.110.500.1000.6.70L.C.402.Q.EX.D...	10	96811916			96782485
S3.110.500.1000.6.70L.D.402.Q.EX.D...	10	96811917		96308244	
S3.110.500.1000.6.70L.H.402.Q.EX.D...	10	96811918	96308192		
S3.110.500.1300.6.70L.S.442.Q.EX.D...	10	96811931			96782485

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S3.110.500.1300.6.70L.C.442.Q.EX.D...	10	96811932			96782485
S3.110.500.1300.6.70L.D.442.Q.EX.D...	10	96811933		96308244	
S3.110.500.1300.6.70L.H.442.Q.EX.D...	10	96811934	96308192		
S3.120.300.650.8.70M.S.464.Q.EX.D...	10	96811947			96782484
S3.120.300.650.8.70M.C.464.Q.EX.D...	10	96811948			96782484
S3.120.300.650.8.70M.D.464.Q.EX.D...	10	96811949		96308241	
S3.120.300.650.8.70M.H.464.Q.EX.D...	10	96811950	96308192		
S3.120.300.800.6.70M.S.407.Q.EX.D...	10	96811955			96782484
S3.120.300.800.6.70M.C.407.Q.EX.D...	10	96811956			96782484
S3.120.300.800.6.70M.D.407.Q.EX.D...	10	96811957		96308241	
S3.120.300.800.6.70M.H.407.Q.EX.D...	10	96811958	96308255		
S3.120.300.1000.6.70M.S.428.Q.EX.D...	10	96811919			96782484
S3.120.300.1000.6.70M.C.428.Q.EX.D...	10	96811920			96782484
S3.120.300.1000.6.70M.D.428.Q.EX.D...	10	96811921		96308241	
S3.120.300.1000.6.70M.H.428.Q.EX.D...	10	96811922	96308255		
S3.120.300.1300.6.70M.S.456.Q.EX.D...	10	96811935			96782484
S3.120.300.1300.6.70M.C.456.Q.EX.D...	10	96811936			96782484
S3.120.300.1300.6.70M.D.456.Q.EX.D...	10	96811937		96308241	
S3.120.300.1300.6.70M.H.456.Q.EX.D...	10	96811938	96308192		
S3.120.600.650.8.70E.S.459.Q.EX.D...	10	96811939			96782486
S3.120.600.650.8.70E.C.459.Q.EX.D...	10	96811940			96782486
S3.120.600.650.8.70E.D.459.Q.EX.D...	10	96811941		96308245	
S3.120.600.650.8.70E.H.459.Q.EX.D...	10	96811942	96308192		
S3.120.600.1000.6.70E.S.402.Q.EX.D...	10	96811923			96782486
S3.120.600.1000.6.70E.C.402.Q.EX.D...	10	96811924			96782486
S3.120.600.1000.6.70E.D.402.Q.EX.D...	10	96811925		96308245	
S3.120.600.1000.6.70E.H.402.Q.EX.D...	10	96811926	96308192		
S3.120.600.1300.6.70E.S.426.Q.EX.D...	10	96811927			96782486
S3.120.600.1300.6.70E.C.426.Q.EX.D...	10	96811928			96782486
S3.120.600.1300.6.70E.D.426.Q.EX.D...	10	96811929		96308245	
S3.120.600.1300.6.70E.H.426.Q.EX.D...	10	96811930	96308192		

¹ The horizontal base stand is included in the pump product number.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

6. Variants

List of variants

Motor		
Various cable lengths		15 m
		25 m
		50 m
EMC power cables	Screened power cables for variable-speed drives	10 m
		15 m
		25 m
		50 m
Special motor		Insulation class H
		Special voltage
Special oil	Non-toxic Shell Ondina X420 ¹	
Motor protection		
Pt100 on lower bearing + Pt100 on upper bearing + Pt100 on windings		Sensor set 2
Pt100 on lower bearing + Pt100 on upper bearing + Pt100 on windings + PVS3 vibration sensor		Sensor set 3
External water-in-oil sensor		WIO
Coating		
Special paint thickness	300 µm (painted twice)	
	450 µm (painted three times)	
Impeller (external surface)	Epoxy coating (NCS 900N/RAL 9005 gloss 30, black)	
	Belzona 1321 coating (brush painted, blue)	
Impeller (internal surface)	Chesterton ARC 855 ceramic coating (grey)	
	Epoxy coating (NCS 900N/RAL 9005 gloss 30, black)	
Pump housing (internal)	Belzona 1321 coating (brush painted, blue)	
	Chesterton ARC 855 ceramic coating (grey)	
	Epoxy coating (NCS 900N/RAL 9005 gloss 30, black)	
Inlet cover	Belzona 1321 coating (brush painted, blue)	
	Chesterton ARC 855 ceramic coating (grey)	
Zinc anodes (outside of inlet cover / pump housing)	3 pcs.	
Materials		
Stainless steel lifting bracket	AISI 316	
Stainless steel shaft	AISI 329	
Impeller	Duplex stainless steel ASTM A890 Grade 3A	
Tests		
Test at specified duty on standard impeller curve		
Trimmed impeller for specified duty test		
Additional test of entire QH curve (including report)	5-10 points on the pump performance curve	
Different test standard	Efficiency guaranteed by Grundfos	ISO 9906:2012 grade 1E tolerances
		ISO 9906:2012 grade 1B/1U tolerances
		ISO 9906:2012 grade 2B/2U tolerances
Vibration test (including report)	According to Grundfos factory quality standard	
Performance test on dry test stand	Contact Grundfos	
NPSHr test	Contact Grundfos	
String test	Contact Grundfos	
Witness test	Contact Grundfos	
Miscellaneous		
Special packaging	Contact Grundfos	
Special nameplate	Contact Grundfos	
Old UK-guide shoe	Contact Grundfos / order guide shoe installation kit	
Other variants	Contact Grundfos	

¹ For pumps with WIO sensor Shell Ondina is not an option.

7. Construction

Sectional drawings, motors

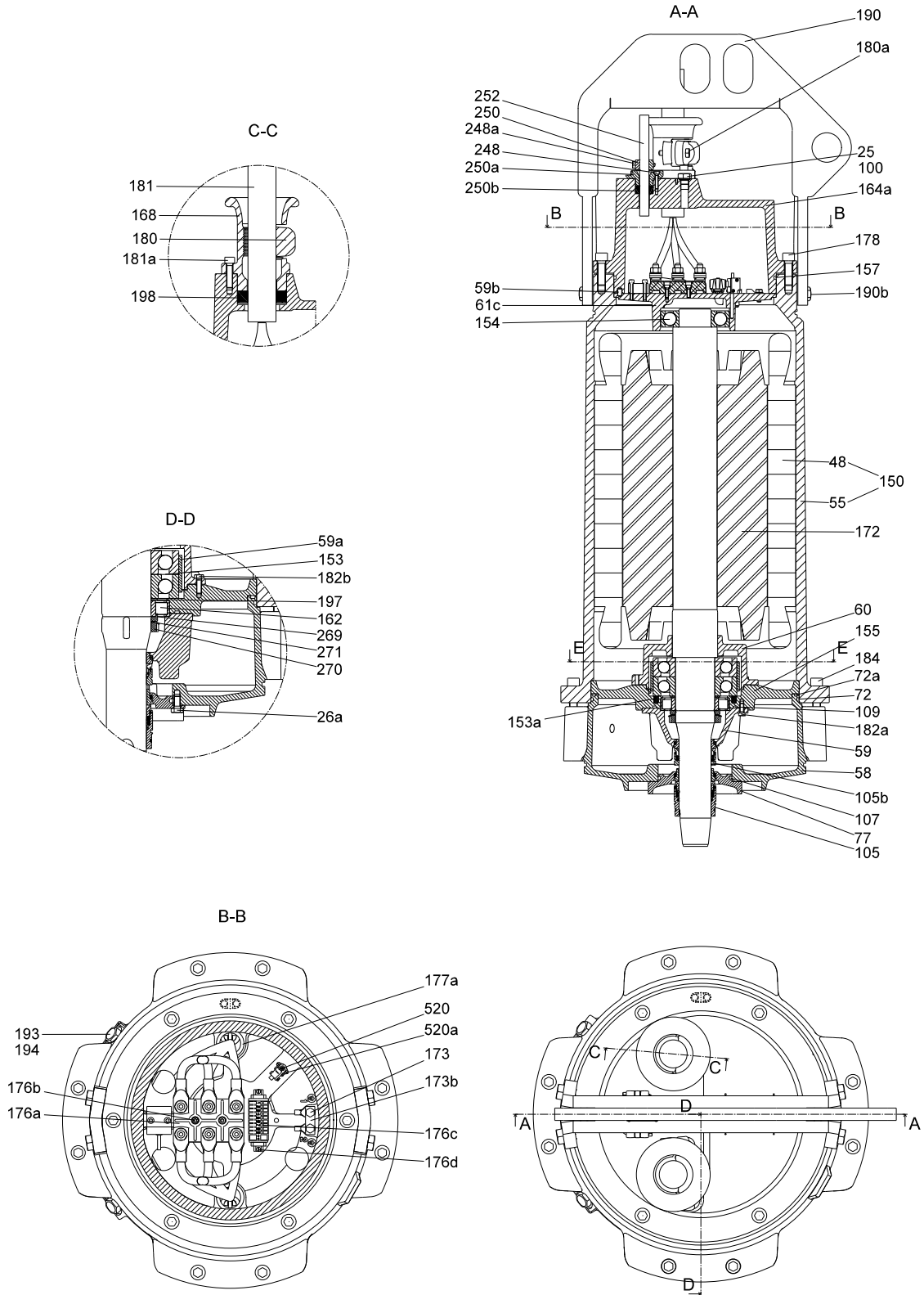


Fig. 6 Non-explosion-proof motor, without cooling jacket (installation type S)

TM06 3962 1315

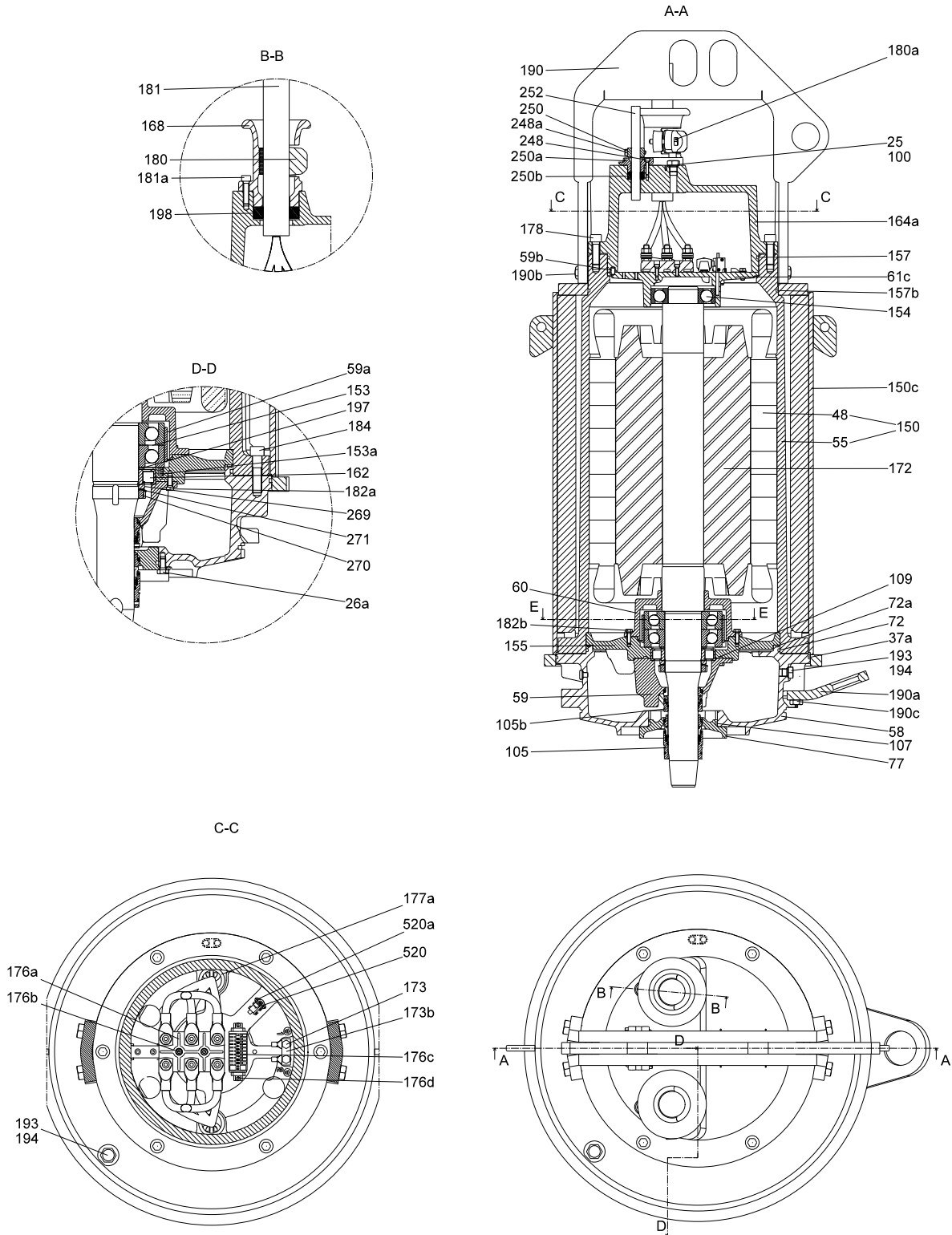


Fig. 7 Non-explosion-proof motor with cooling jacket (installation types C, D and H)

TM06 3964 1315

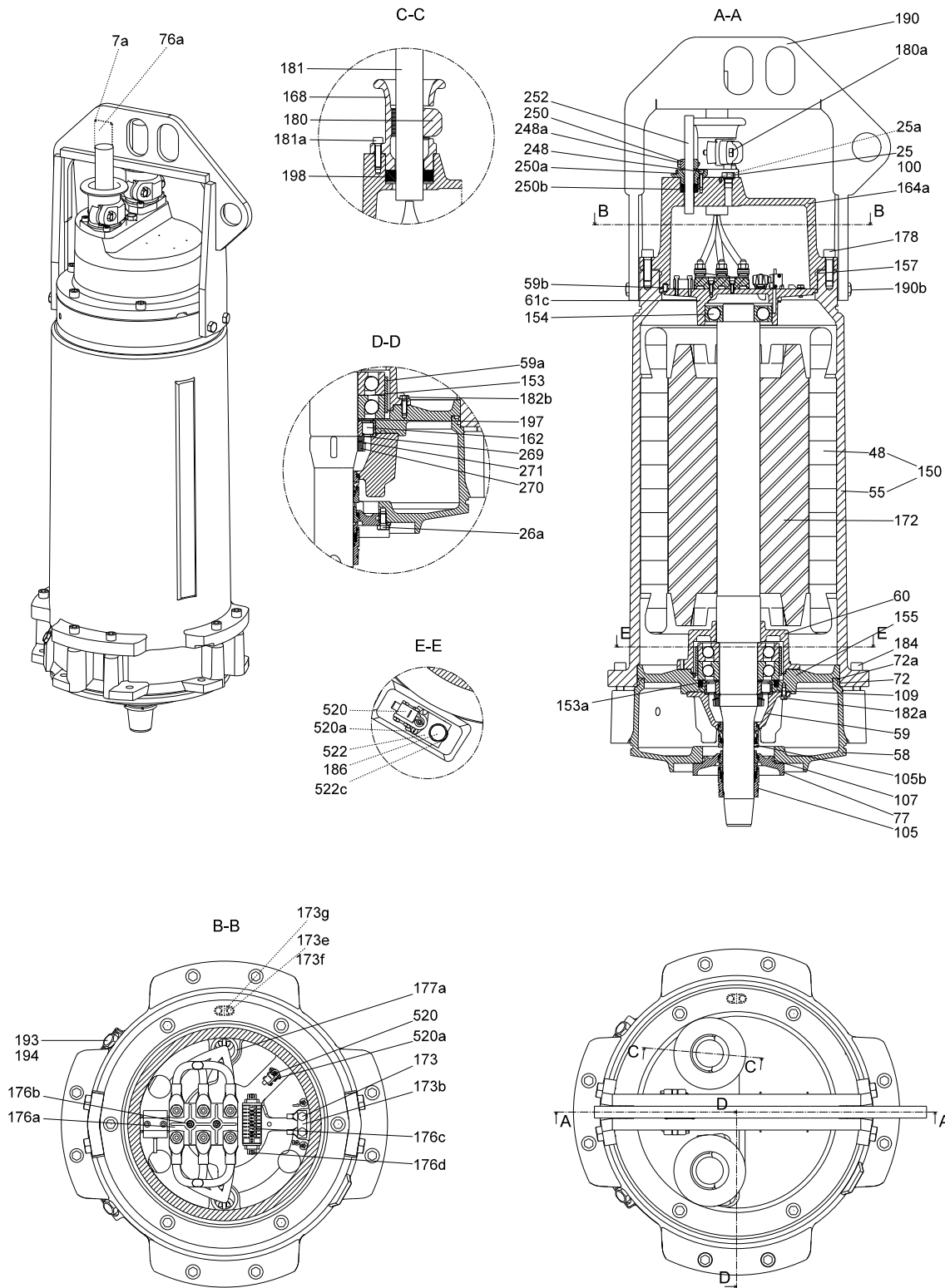


Fig. 8 Explosion-proof motor without cooling jacket (installation type S)

TM06 3963 1315

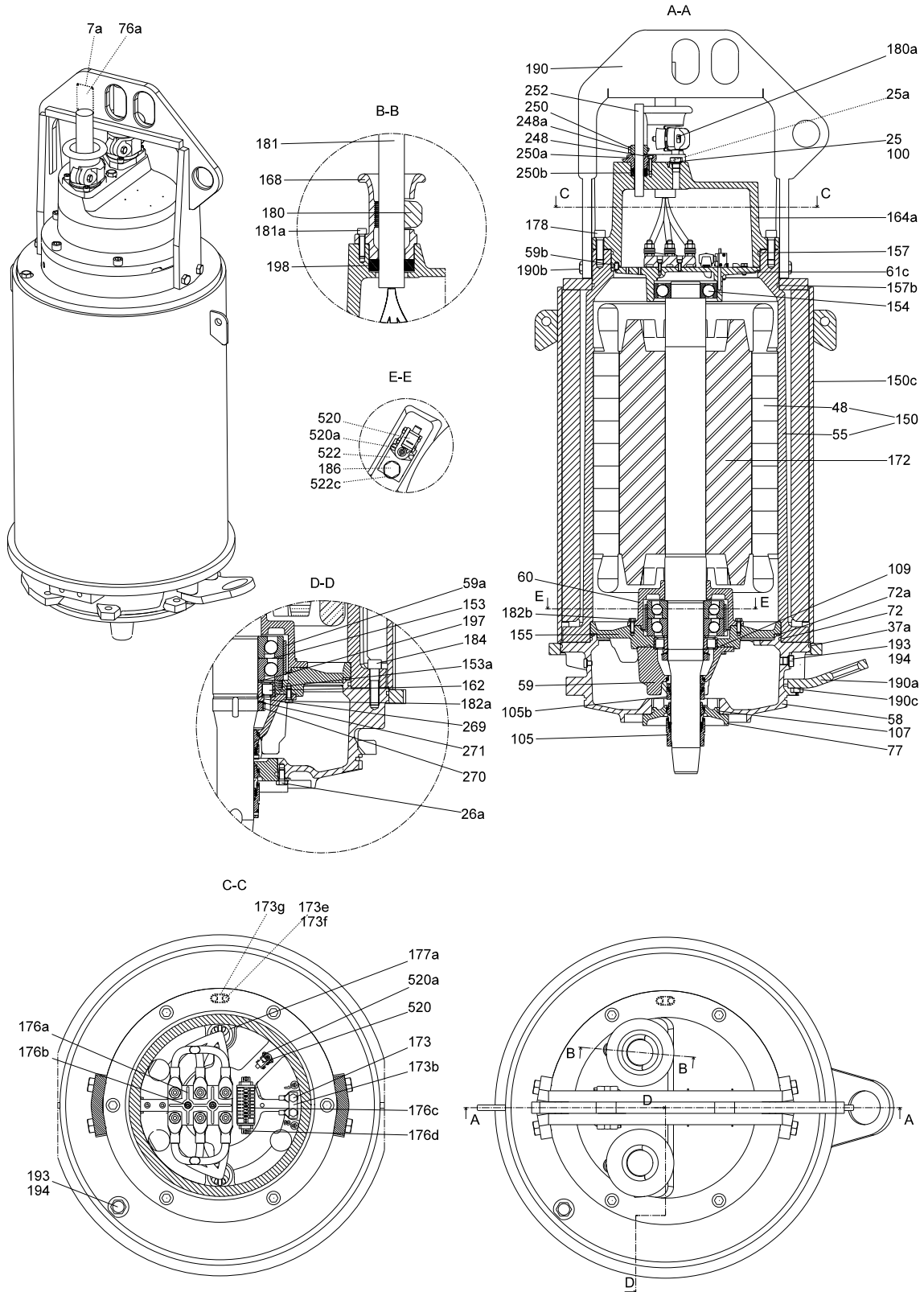


Fig. 9 Explosion-proof motor with cooling jacket (installation types C, D and H)

TM06 3965 1315

Pump

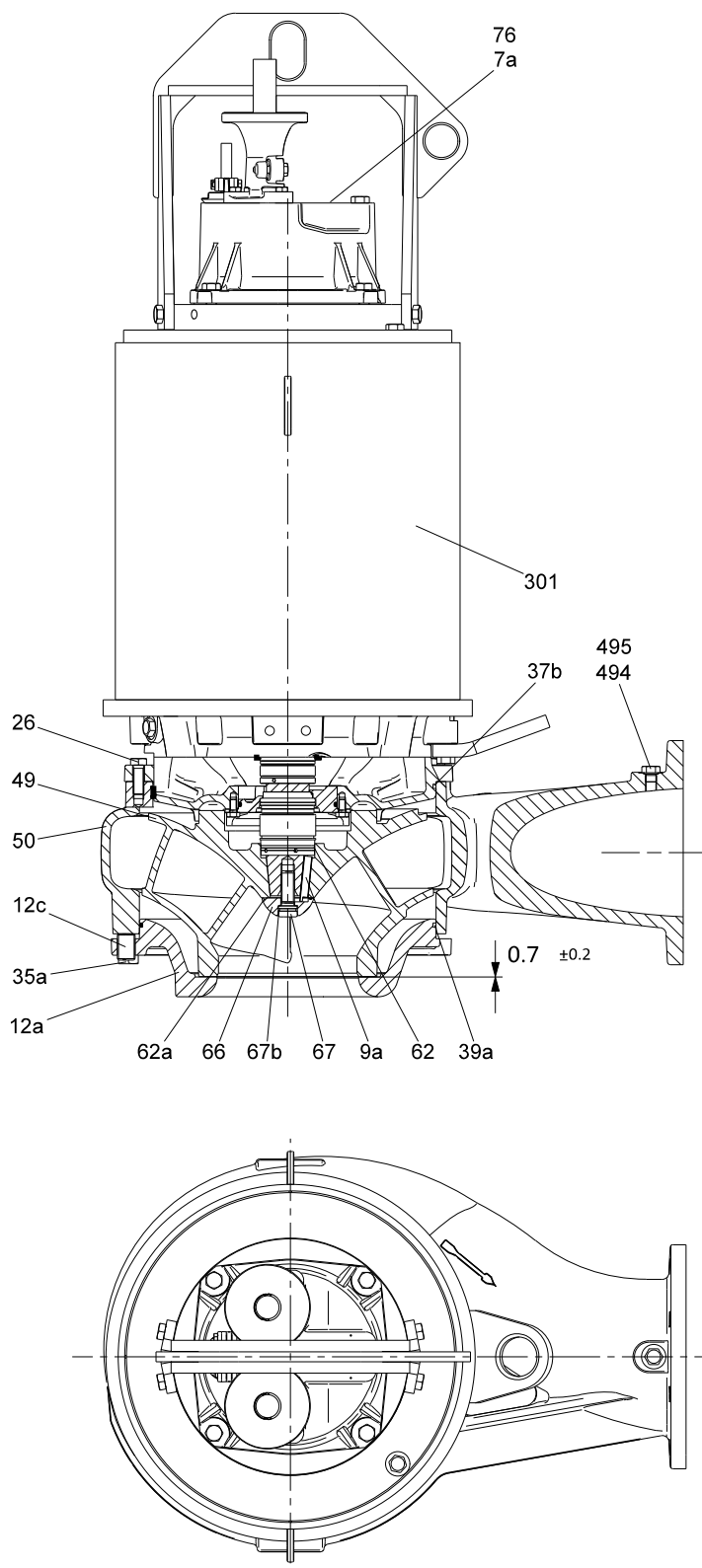


Fig. 10 Basic pump, installation types S and C

TM04 2589 2708

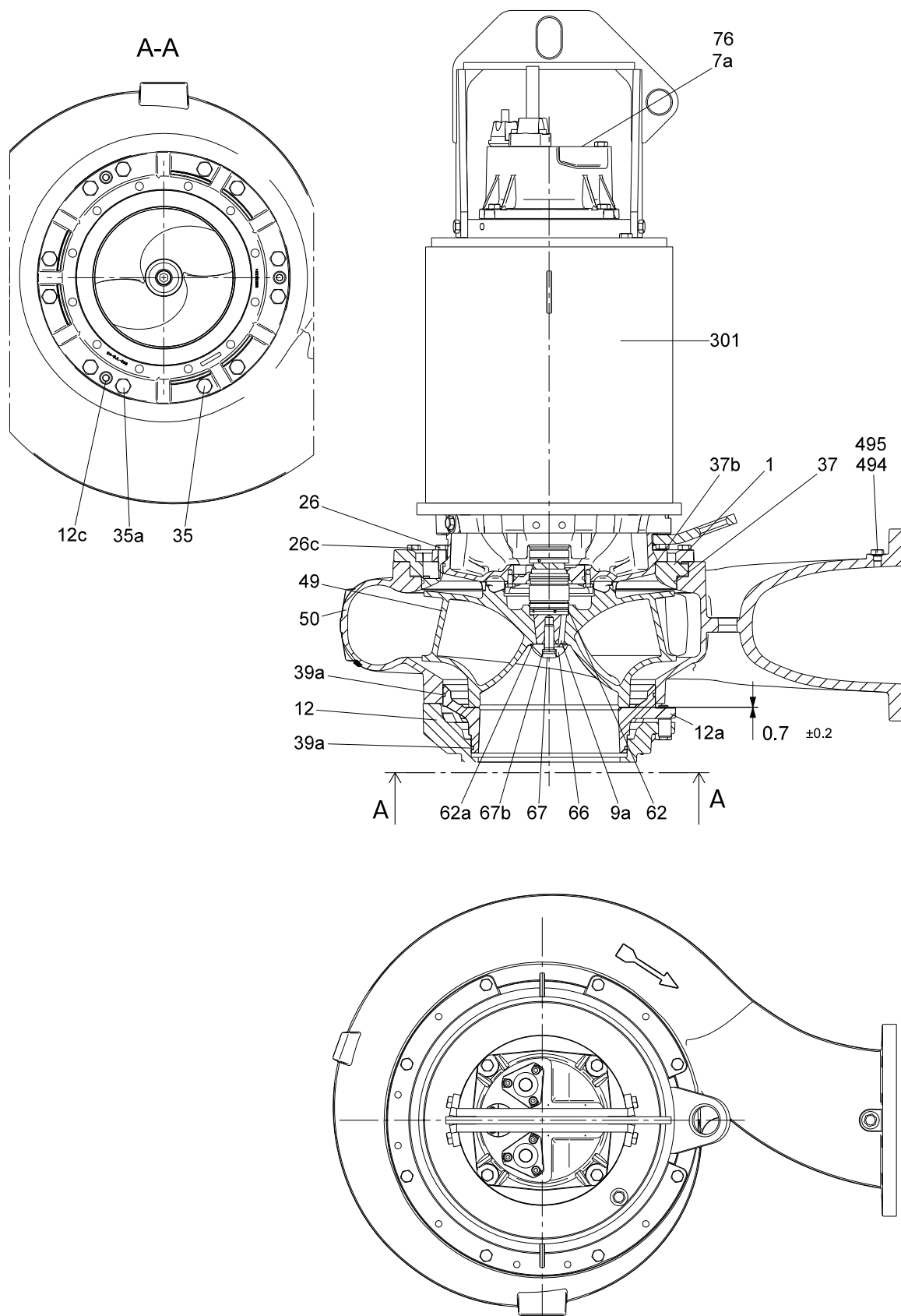


Fig. 11 Basic pump, installation types D and H

TM04 2707 2808

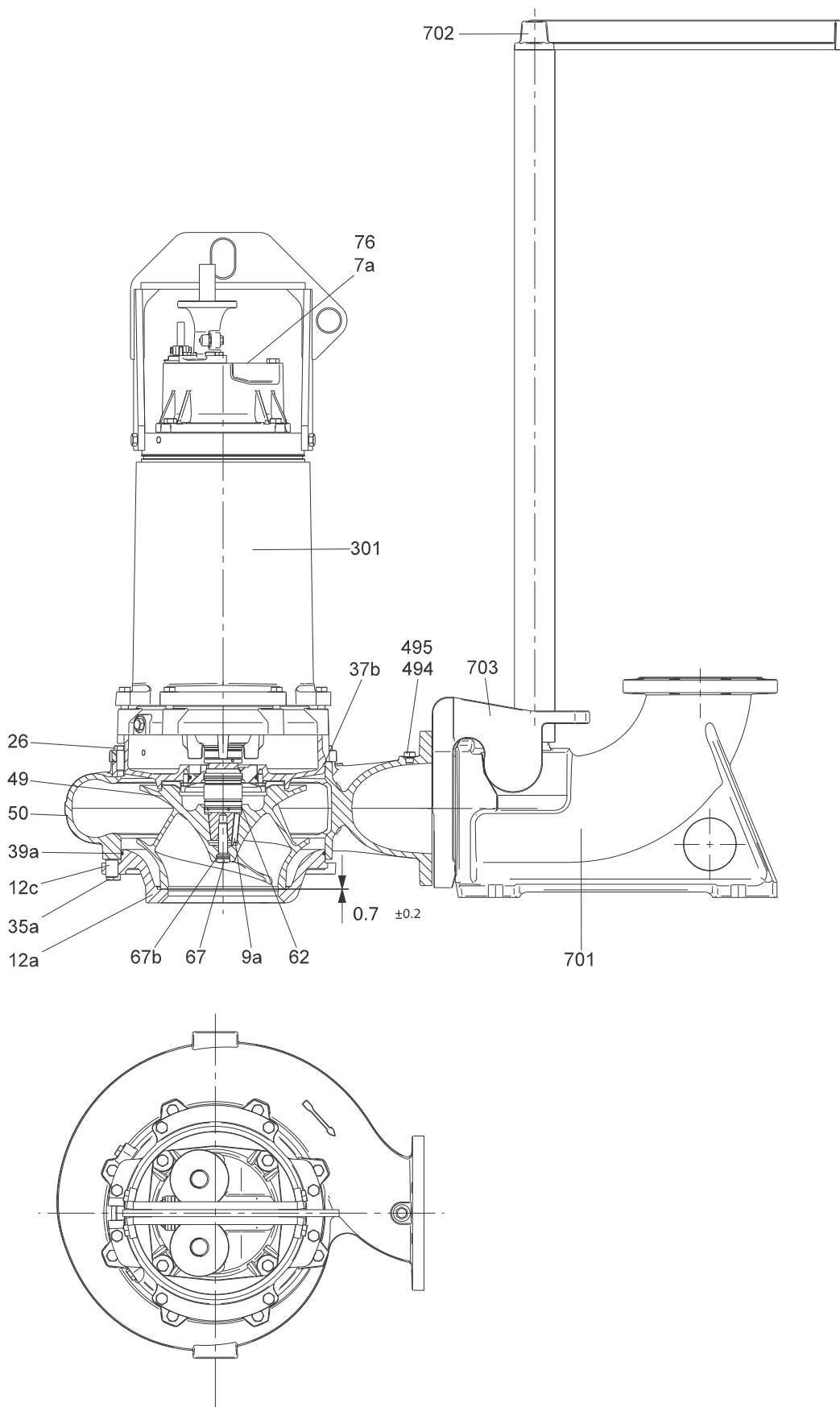


Fig. 12 Installation types S and C pump on auto coupling

TM04 2708 4116

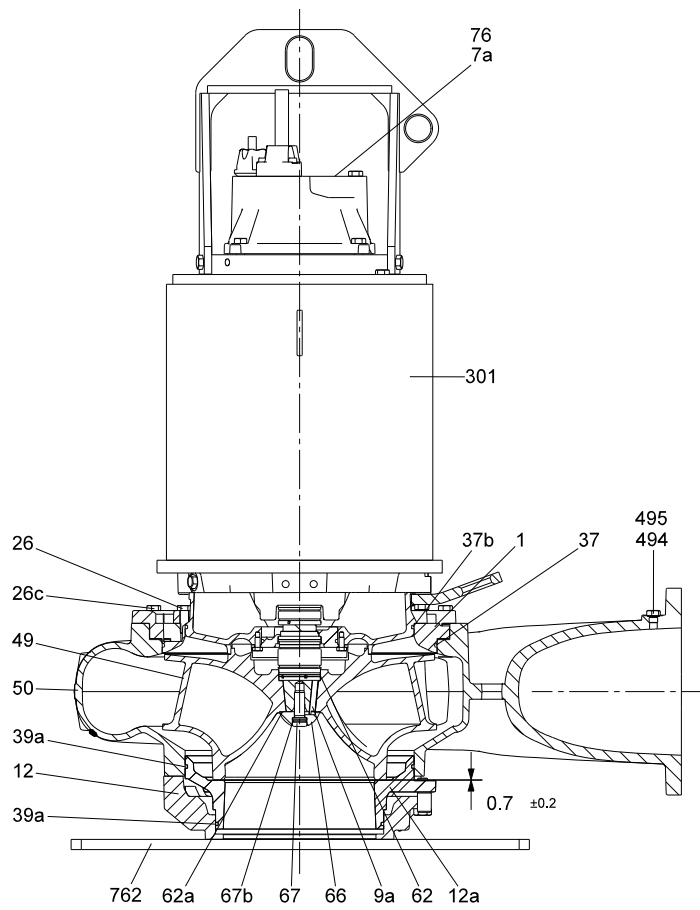


Fig. 13 Installation type D, dry, vertical pump on base plate - version 1

TM04 2585 2708

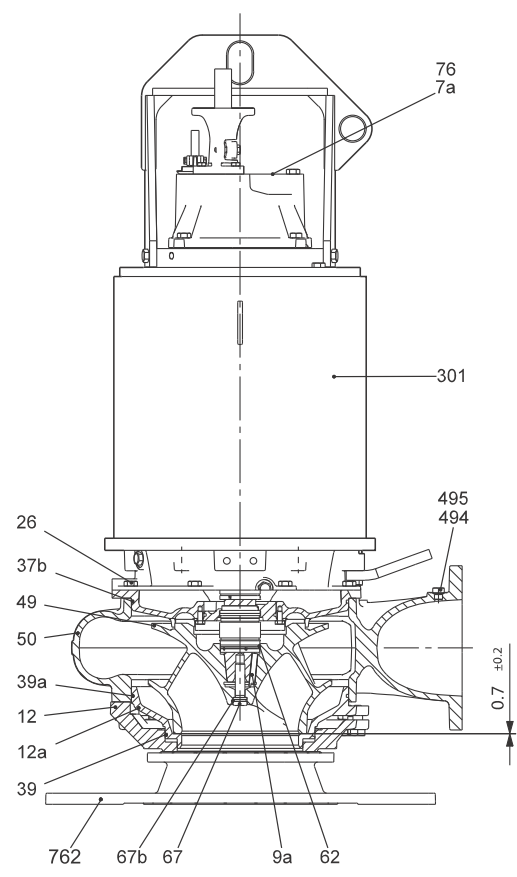
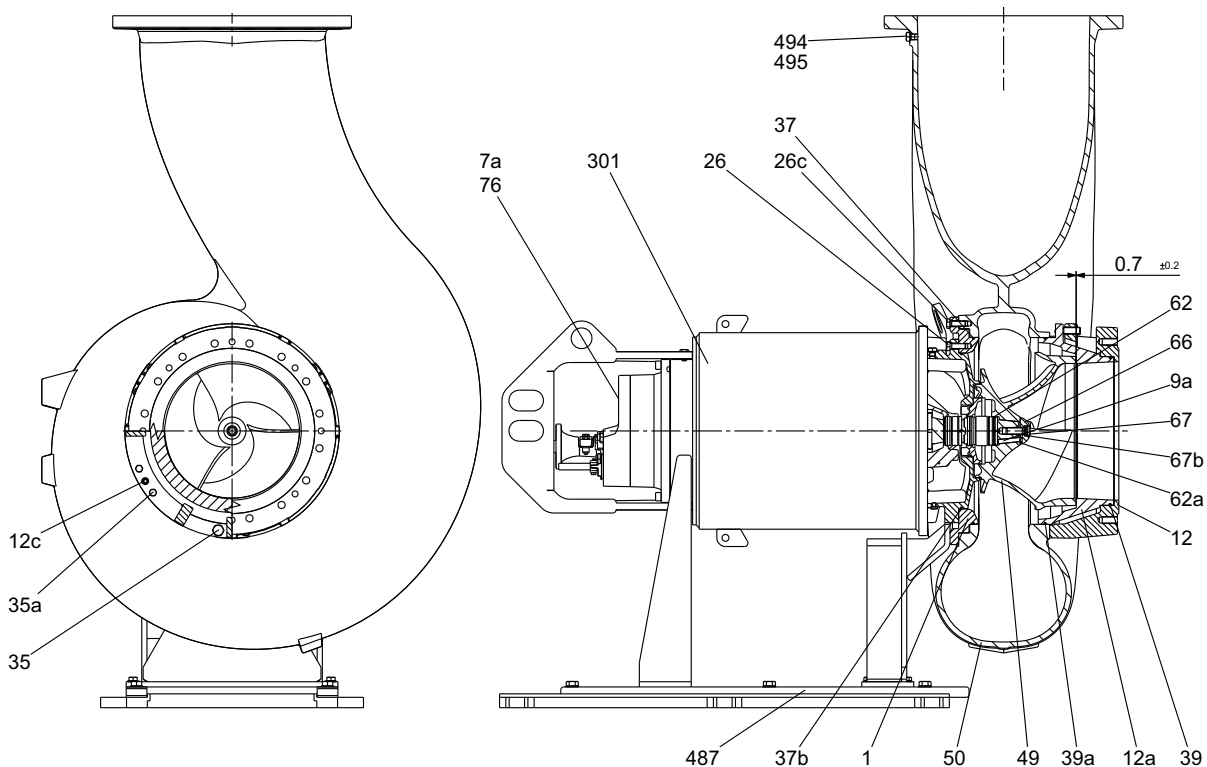


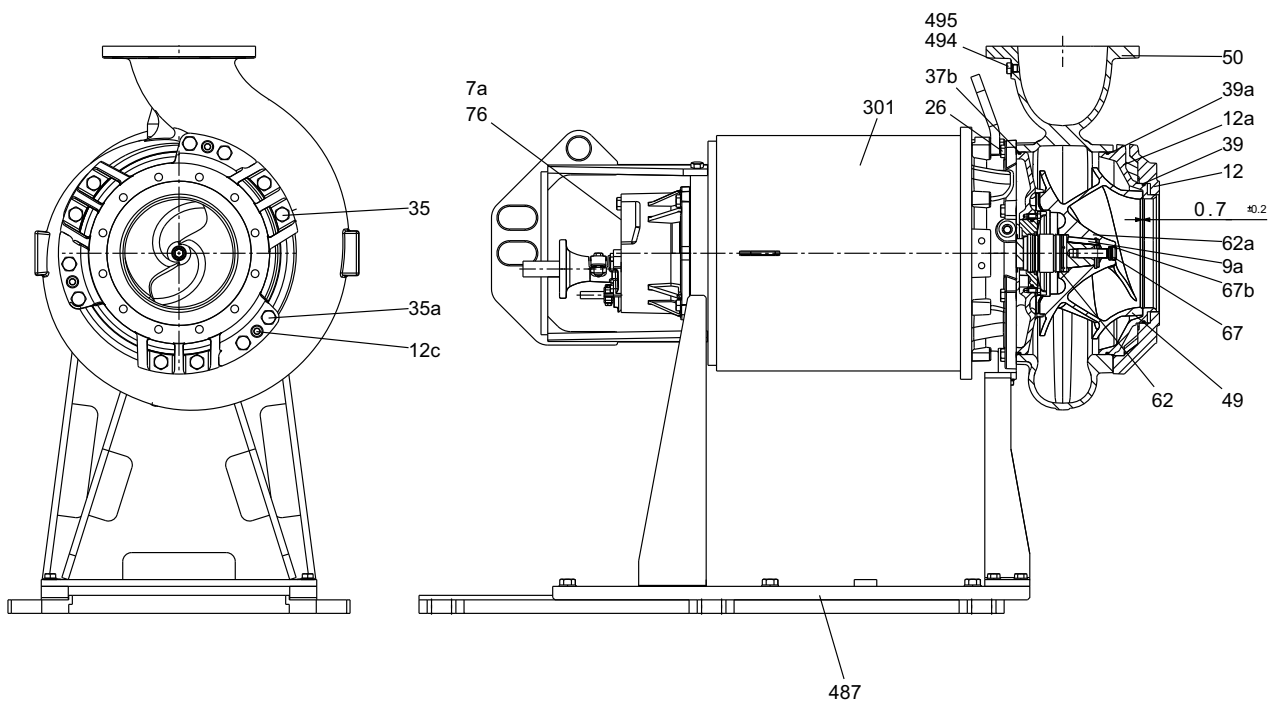
Fig. 14 Installation type D, dry, vertical pump on base plate - version 2

TM04 2588 2708



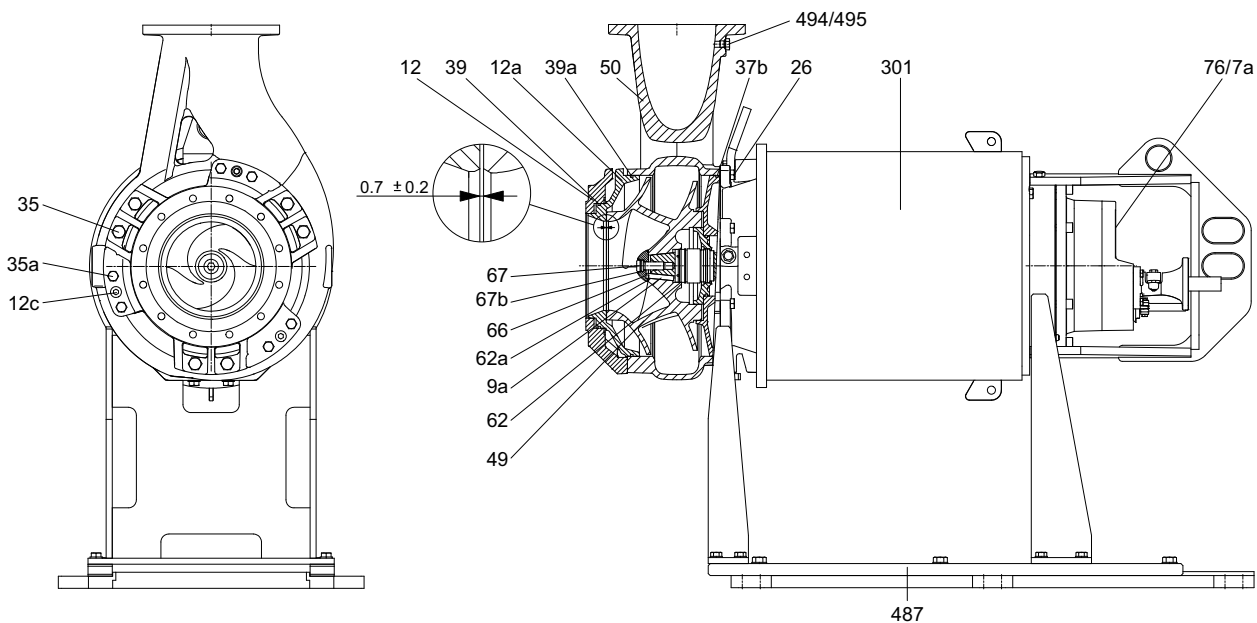
TM04 2590 0817

Fig. 15 Installation type H, dry, horizontal installation on base stand - version 1



TM04 2591 0817

Fig. 16 Installation type H, dry, horizontal installation on base stand - version 2



TM07 0974 0918

Fig. 17 Installation type H, dry, horizontal installation on base stand - versions 3

Components and material specification

Motor

Pos.	Component	Material	DIN W.Nr./ EN standard	AISI/ ASTM
7a	Rivet	Stainless steel	1.4436	316
25	Pressure test plug	Stainless steel	1.4436	316
25a	Screw	Stainless steel	1.4436	316
26a	Screw	Stainless steel	1.4436	316
37a	O-ring	NBR rubber		
48	Stator package			
55	Stator housing	Cast iron ¹	EN-JL 1040	A48 30
58	Seal housing	Cast iron		
59	Bearing bracket cover	Cast iron		
59a	Locking ring	Aluminium		
59b	Pin	Steel		
60	Lower bearing bracket cover	Cast iron		
61c	Upper bearing bracket	Cast iron		
72	O-ring	NBR rubber		
72a	O-ring	NBR rubber		
76a	Approval plate (pump)	Stainless steel		
76b	Approval plate (cable)	Stainless steel		
77	Seal housing cover	Cast iron		
100	O-ring	NBR rubber		
105	Primary shaft seal	SiC/SiC or SiC/carbon		
105b	Secondary shaft seal	SiC/SiC or SiC/carbon		
107	O-ring	NBR rubber		
109	O-ring	Viton rubber		
150	Stator housing comp.			
150c	Cooling jacket	Galvanized steel		
153	Ball bearing	Stainless steel		
153a	Spring	Steel		
154	Ball bearing	Stainless steel		
155	Lower bearing bracket	Cast iron ¹		
157	O-ring	NBR rubber		
157b	O-ring	NBR rubber		
162	Roller bearing	Steel, brass or steel cage		
164a	Motor top cover	Cast iron ¹		
168	Cable entry	PA or cast iron ²		
172	Shaft with rotor	High tensile steel	1.7225	
173	Screw	Stainless steel	1.4436	316
173b	Earth terminal			
173e	Screw	Stainless steel	1.4436	316
173f	Spring washer	Stainless steel	1.4436	316
173g	Earth connector			
176a	Terminal block			
176b	Screw	Stainless steel	1.4436	316
176c	Terminal block			
176d	Terminal block			
177a	Protection sleeve	Rubber or plastic		
178	Screw	Stainless steel	1.4436	316
180	Cable clamp	PA or cast iron		
180a	Screw	Stainless steel	1.4436	316
181	Cable	ATON		
181a	Screw	Stainless steel	1.4436	316
182a	Screw	Stainless steel	1.4436	316
182b	Screw	Stainless steel	1.4436	316
184	Screw	Stainless steel	1.4436	316
186	Screw	Stainless steel	1.4436	316
190	Lifting handle	Steel		
190a	Screw	Stainless steel		
190b	Screw	Stainless steel		
190c	Lifting bracket	Galvanized steel		
193	Plug	Stainless steel	1.4436	316
194	O-ring	NBR rubber		
197	Washer	Stainless steel	1.4436	316
198	Rubber seal			
248	Screw	Stainless steel	1.4436	316
248a	Screw	Stainless steel	1.4436	316

Pos.	Component	Material	DIN W.Nr./ EN standard	AISI/ ASTM
250a	Cable entry	PA or cast iron		
250b	Rubber seal			
250	Cable clamp	PA or cast iron		
252	Cable	ATON		
269	Angle ring	Steel		
270	Lock nut	Steel		
271	Lock washer	Steel		
520	Moisture switch ³			
520a	Screw	Stainless steel	1.4436	316
522	Holder			
522c	Spring washer			

¹ Available in stainless steel (custom-built option).

² Ex versions have cast iron cable entry.

³ Ex versions have two moisture switches.

Pump

Pos.	Component	Material	DIN W.Nr./ EN standard	AISI/ ASTM
1	Intermediate ring	Cast iron		
7a	Rivet	Stainless steel	1.4436	316
9a	Key (for keyway)	Stainless steel	1.4436	316
12	Flange	Cast iron		
12a	Inlet cover	Cast iron		
12c	Adjusting screw	Stainless steel	1.4436	316
26	Screw	Stainless steel	1.4436	316
26c	Screw	Stainless steel	1.4436	316
35	Screw	Stainless steel		
35a	Screw	Stainless steel		
37	O-ring	NBR rubber		
37b	O-ring	NBR rubber		
39	O-ring	NBR rubber		
39a	O-ring	NBR rubber		
49	Impeller	Cast iron ¹	EN-JL 1050	
50	Volute casing	Cast iron ¹	EN-JL 1050	
62	O-ring	NBR rubber		
62a	O-ring	NBR rubber		
66	Cap	Cast iron or stainless steel		
67	Impeller screw	Stainless steel	1.4436	316
67b	O-ring	NBR rubber		
76	Nameplate			
301	Motor housing			
487	Base stand, horizontal	Steel		
487a	Base plate			
494	Plug	Stainless steel	1.4436	316
495	O-ring	NBR rubber		
762	Stand			

¹ Available in stainless steel (custom-built option).

Accessories

Pos.	Component	Material
487	Base stand, horizontal ¹	Steel
701	Auto-coupling base unit	Cast iron ²
702	Upper guide rail bracket	Cast iron ²
703	Guide claw ³	Cast iron ²
762	Base plate, vertical	Cast iron or steel

¹ The horizontal base stand is included in the pump product number.

² Available in stainless steel (custom-built option).

³ Guide claws for DN 250 outlets or bigger are factory fitted.

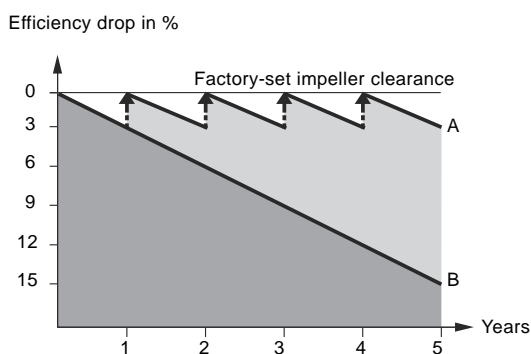
8. Product description

Features

SmartTrim

On conventional pumps, maintaining factory-set impeller clearance is a time-consuming and costly task. The pumps need to be disconnected from the pipes and to be totally dismantled, and new parts need to be mounted in order to maintain full pumping efficiency. Not so with Grundfos SmartTrim!

All Grundfos heavy-duty channel-impeller pumps, whether for submerged or dry installation, are equipped with the unique SmartTrim impeller clearance adjustment system. This enables you to easily restore factory-set impeller clearance and maintain peak pumping efficiency. All you need to do is to tighten the adjustment screws on the exterior of the impeller housing. This can be done on site, quickly and easily, without dismantling the pump and without using special tools.



A: With Grundfos SmartTrim impeller clearance adjustment system

B: Without impeller clearance adjustment system

SmartSeal

For pumps with DN 250 outlet or larger, the Grundfos SmartSeal auto-coupling sealing mounted on the pump outlet flange provides a completely leak-proof connection between the pump and the base unit of the auto-coupling system. This optimises the efficiency of the entire pumping system and keeps operating costs at a minimum.

Bearings

The bearings are greased for life.

Main bearings: Double-row angular contact ball bearing. Single or pair mounted angular contact ball bearings for axial forces and cylindrical roller bearing for radial forces.

Support bearings: Single-row deep-groove ball bearing.

Shaft seals

The pumps have a primary and a secondary shaft seal. The material combination of the primary shaft seal of all pump types is silicon carbide/silicon carbide. For the secondary shaft seal, the material combination is silicon carbide/carbon.

The shaft seals are placed in the oil chamber of the pump. The oil chamber provides reliable sealing between the pumped liquid and the motor.

The shaft seals have no springs or other parts in direct contact with the pumped liquid. This prevents rags and fibres from getting caught. The shaft seals are bidirectional, meaning that they can operate in either direction, thus allowing for opposite rotation caused by back-flow of liquid through the pump.

Motor

The motor is a watertight, totally encapsulated motor with:

- insulation class F (155 °C)
- temperature rise class F (105 K)
- enclosure class IP68.

For motor protection and sensors, see *Sensors*, page 37.

Cables

The pumps have H07RN-F AT power cables as standard or screened ATON EMC VSCCB cables on request.

The pumps have H07RN-F 450/750 V control cables as standard or screened ATON VSCB 450/750 V control cables on request.

All cables are 10 m long as standard. Other cable lengths are available on request. See *List of variants*, page 24.

The number and dimension of cables depend on the motor size.

Motor power [kW]	Voltage	Cable size [power + control]
50		
58		2 x 4 x 25 mm ² + 7 x 1.5 mm ²
65		
85		
80		2 x 4 x 35 mm ² + 7 x 1.5 mm ²
100	3 x 415 V 3 x 400/690 V	
115		2 x 4 x 50 mm ² + 7 x 1.5 mm ²
130		
140		2 x 4 x 70 mm ² + 7 x 1.5 mm ²
155		

Power cable

Cable type [mm ²]	Outer cable diameter [mm]	Weight [kg/m]	Bending radius [cm]
4 x 25	28.9 - 31.4	1.88	19
4 x 35	32.5 - 34.7	2.43	21
4 x 50	37.7 - 40.4	3.24	25
4 x 70	42.7 - 45.4	4.30	28

Control cable

Cable type [mm ²]	Outer cable diameter [mm]	Weight [kg/m]	Bending radius [cm]
7 x 1.5	14.4 - 16.4	0.35	10

Cable entry

Watertight PA or cast iron cable entry with soft shape and sealing rings to prevent damage of the cable or leaks.

Sensors

As standard the pump is equipped with these switches and sensors:

- Three thermal switches (Klixon) or three thermal sensors in the stator housing.
- One moisture switch under the motor top cover.

Customised sensor options

1. WIO (water-in-oil) sensor

The WIO sensor measures the water content in the oil and converts the value into an analog current signal. The two sensor conductors are for power supply as well as for carrying the signal to the measuring device or controller. The sensor measures the water content from 0 to 20 %. 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.

The sensor is either built-in with the motor (Ex) or installed as an accessory. If the sensor is installed externally, it is fitted in a plastic hose for mechanical protection. The WIO sensor is connected to Grundfos IO 113.

2. PVS3 (pump vibration sensor)

The vibration sensor monitors the vibration level of the pump by using measurements of three axes and combining them into a single measurement outputted in an analog current signal. The sensor acts only as a general indicator of changes in the vibration levels. PVS3 is to be connected to Grundfos IO 113 and SM 113. A substantial increase in vibration will trigger a warning or an alarm.

An increase in vibrations can be caused by a clogged impeller, worn bearings, closed force main valves, etc. indicating that service inspection should be carried out quickly in order to protect the pump or the pipe system from being damaged.

3. Bearing temperature sensor

Pt100 bearing temperature sensor installed within the motor housing. Sensors to be connected using a SM 113 and IO 113.

Testing

All pumps are tested before leaving the factory. The factory test report is based on ISO 9906:2012, grade 3B. Test reports can be ordered directly with the pump or can be ordered separately based on the pump serial number.

Other tests or third party inspection certificates are available on request. See *List of variants*, page 24.

Operating conditions

Pumps without cooling jacket in submerged installation (type S):

- Continuous operation when the pump is fully submerged to the top of the motor.
- Intermittent operation with maximum 20 starts per hour when the pump is submerged to the middle of the motor and with short periods of operation down to the top of the pump housing.

Warning: A motor protection device must be used to cut off power supply in case of overheating.

Note: Explosion proof pumps without cooling jacket must always be fully submerged

Pumps with cooling jacket in submerged and dry installation (types C, D and H):

- Continuous and intermittent operation with maximum 20 starts per hour with water level down to the top of the pump housing.

Pumped liquids

pH value: 4-10

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.

Sound pressure

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

Motor range

Motor power [kW]	Number of poles
65	8
80	6
85	4
100	6
115	4
130	6
160	4

Explosion-proof pumps

The explosion-proof pumps can be used in hazardous areas classified as zone 1 or zone 2. The explosion protection classification of the pumps is Group II category 2G, Ex db IIB T3 or T4 Gb and Ex bc IIB T3 or T4 ($T_{amb} = -5$ to $+40$ °C). Operation of the pump via a frequency converter requires temperature class T3. All installations must be approved by the local authorities.

Controllers

Grundfos Dedicated Controls



TM06 6501 1515 - TM06 8813 1217

Fig. 18 Dedicated Controls in control cabinet

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

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

Main components of the Dedicated Control system:

- 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.

Grundfos prefabricated operating panels

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 31 kW, star-delta starting
- pumps up to and including 31 kW, soft starter.

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

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

IO 113

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 the Grundfos Dedicated Controls system and allows advanced monitoring functions:

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

SM 113

The SM 113 module is used for collection and transfer of sensor data in pumps and includes a large number of sensors.

SM 113 can be placed either inside the pump (allowing fewer sensor conductors out of the pump) or in the control cabinet next to the pump installation.

SM 113 works together with IO 113 through a power-line communication using the Grundfos GENIbus protocol.

SM 113 can collect data from:

- 3 current sensors, 4-20 mA
- 3 Pt100 thermal sensors or 3 Pt1000 thermal sensors
- 1 PTC thermal sensor
- 1 digital input.

Level controllers

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

Controller ranges:

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

Frequency converter

In principle, all three-phase motors can be connected to a frequency converter. However, frequency converter operation will often expose the motor insulation system to a heavier load and cause the motor to be more noisy than usual due to eddy currents caused by voltage peaks.

In addition, large motors driven via a frequency converter will be loaded by bearing currents.

MP 204

The MP 204 control cabinet can be used as a stand-alone motor protector. MP 204 may also be incorporated in a Grundfos Dedicated Controls system in which it functions as a motor protector. The pump is protected secondarily by measuring the temperature with a Pt100 sensor and a PTC sensor or thermal switch.

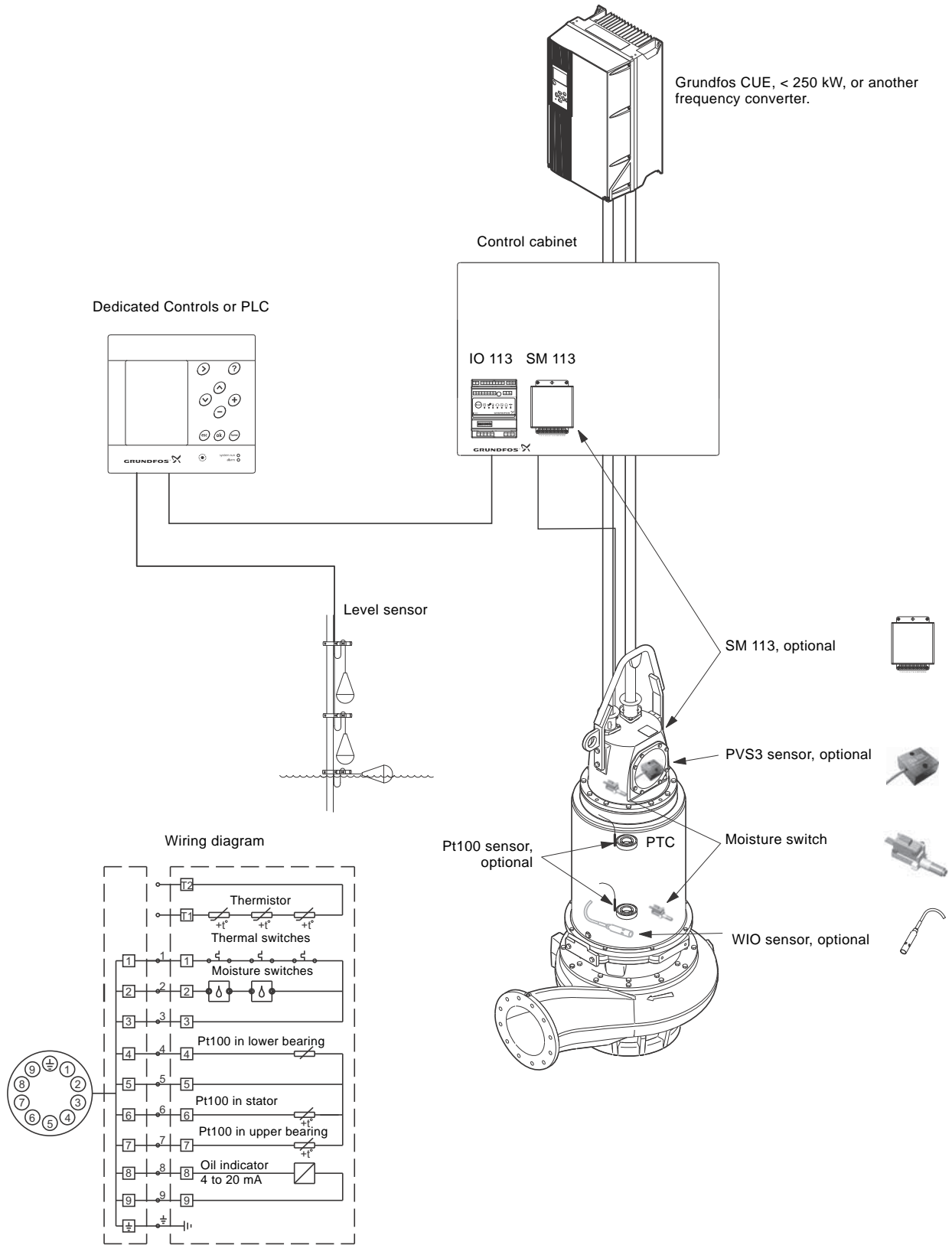


Fig. 19 Pump with frequency converter operation

TM06 8753 1117

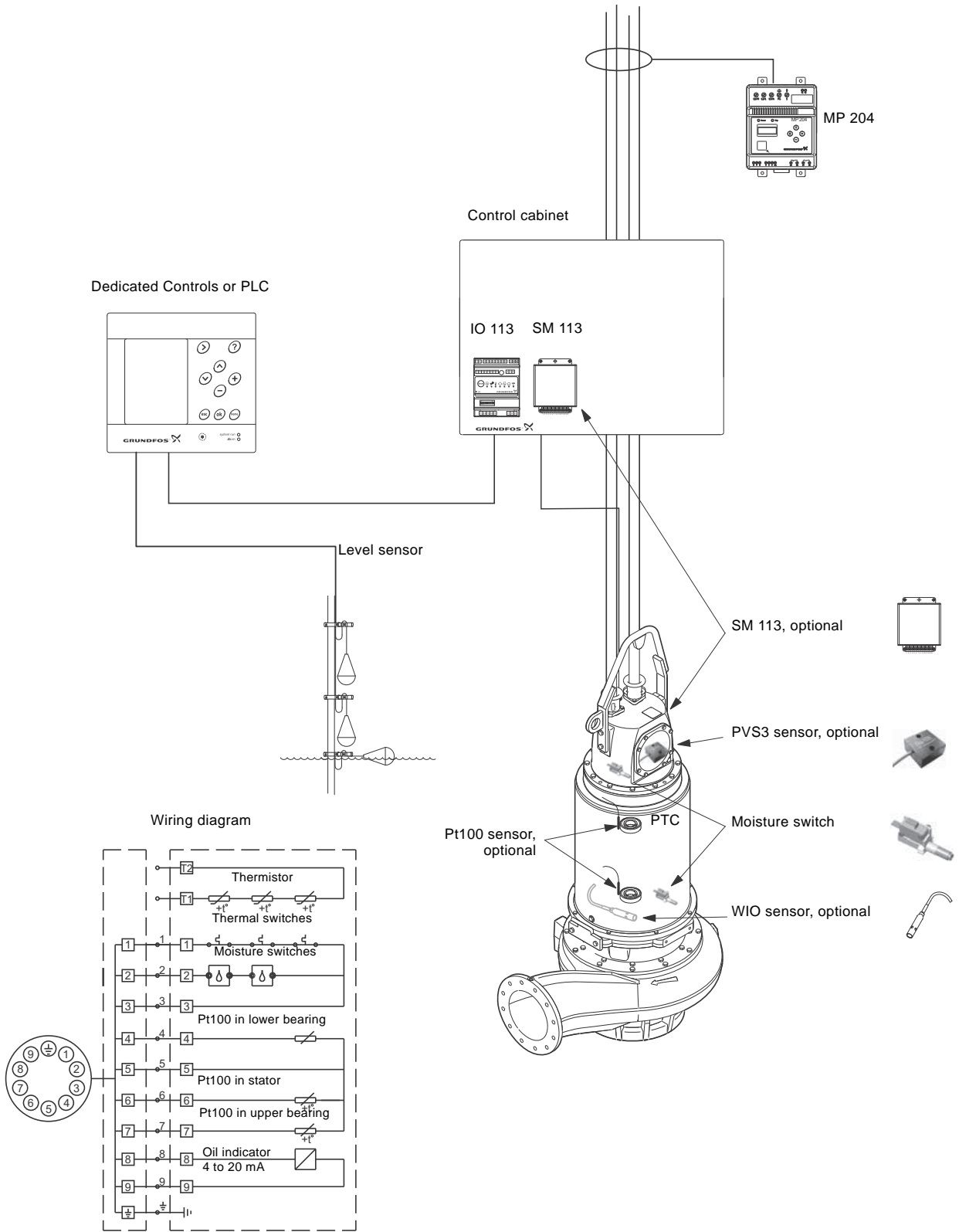
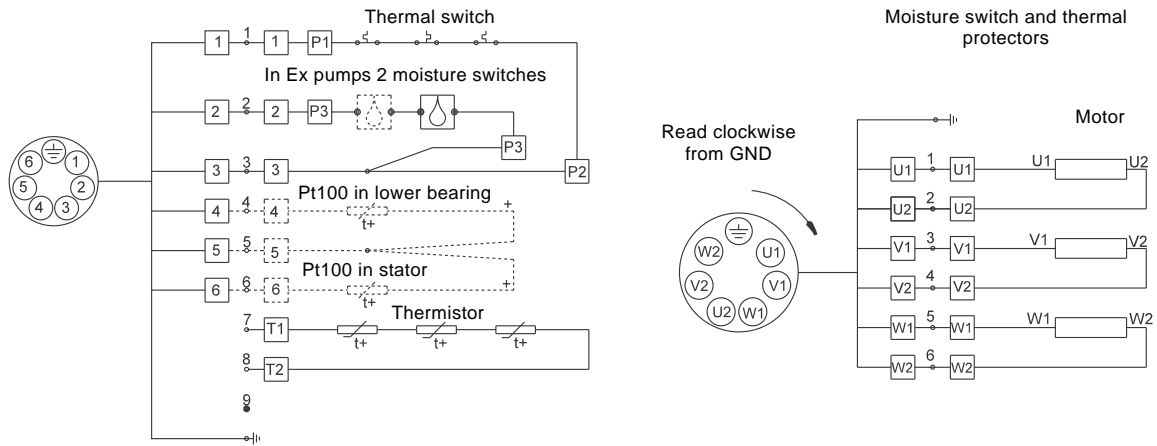


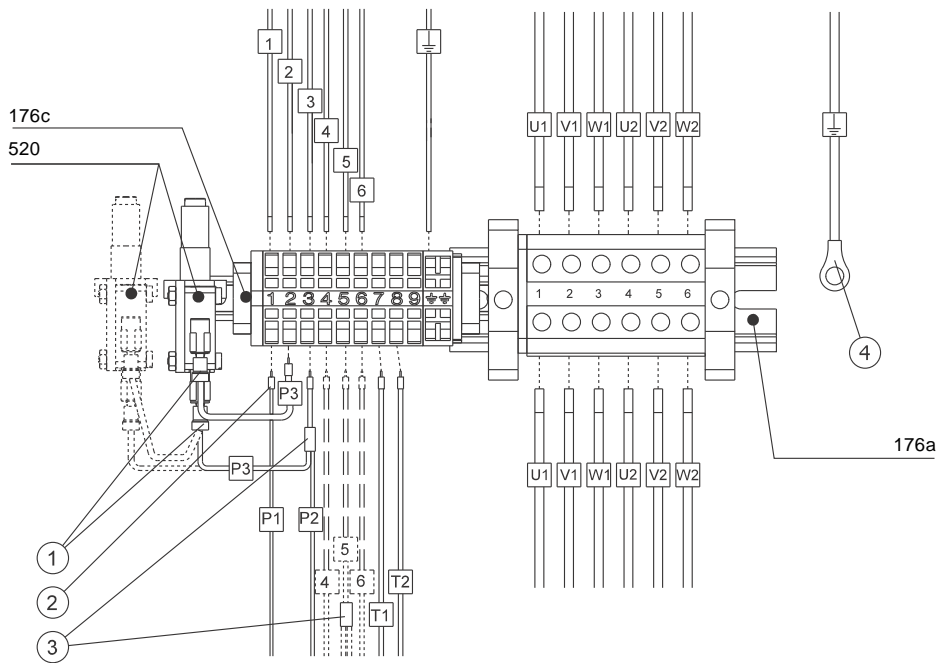
Fig. 20 Pump with MP 204 motor protector

TM06 8754 1117

Wiring diagrams



Supply cable conductors



Stator conductors

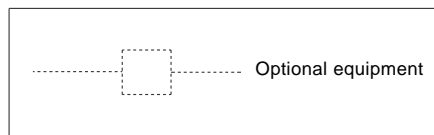


Fig. 21 Wiring diagrams, pumps with one power cable

Pos.	Description
1	Female push-on connector
2	Wire pin
3	Butt splice
4	Ring connector
176a	Terminal block (power cable connections)
176c	Terminal block (sensor connections)
520	Moisture sensor

TM04 3729 5008

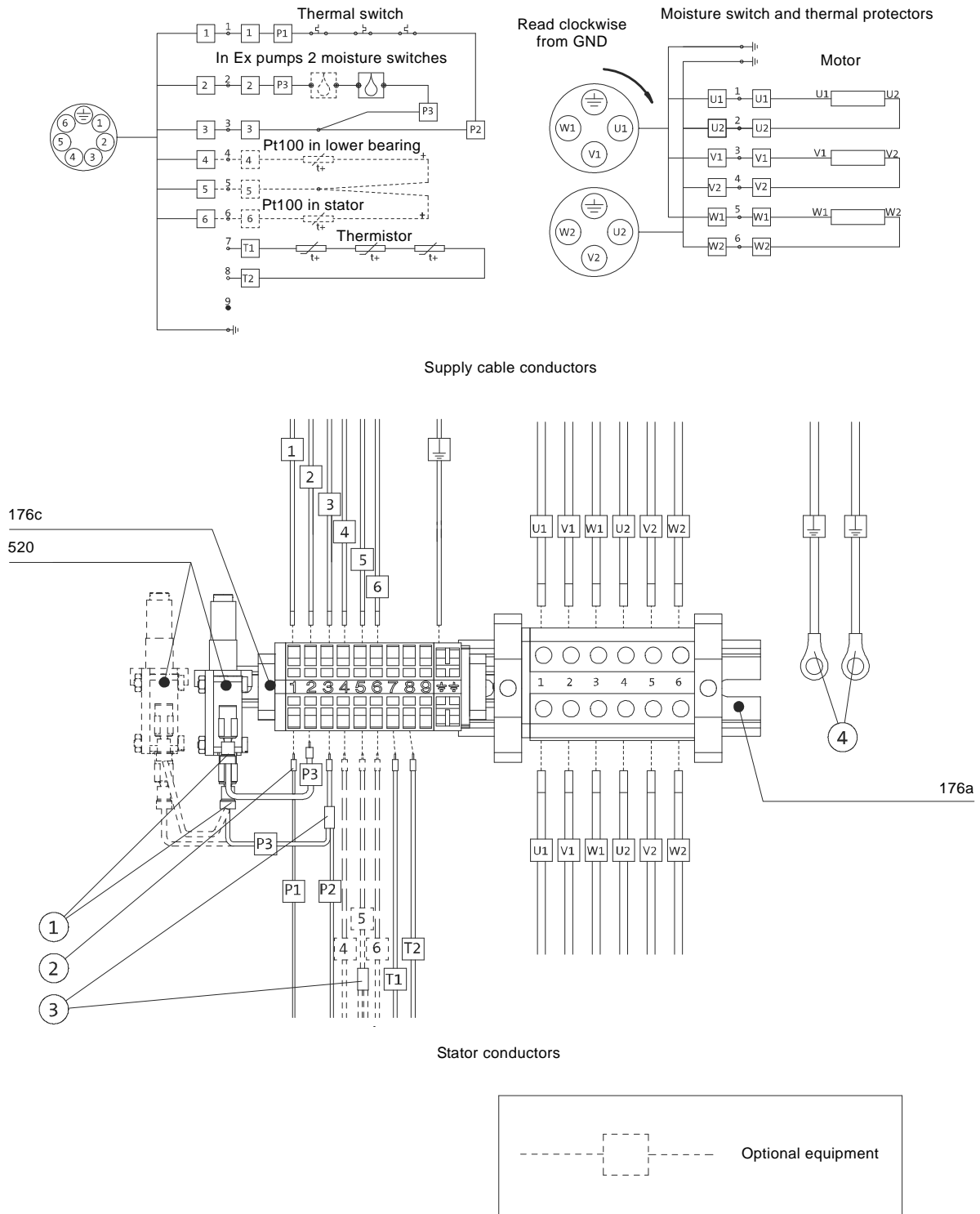


Fig. 22 Wiring diagrams, pumps with two power cables

Pos.	Description
1	Female push-on connector
2	Wire pin
3	Butt splice
4	Ring connector
176a	Terminal block (power cable connections)
176c	Terminal block (sensor connections)
520	Moisture sensor

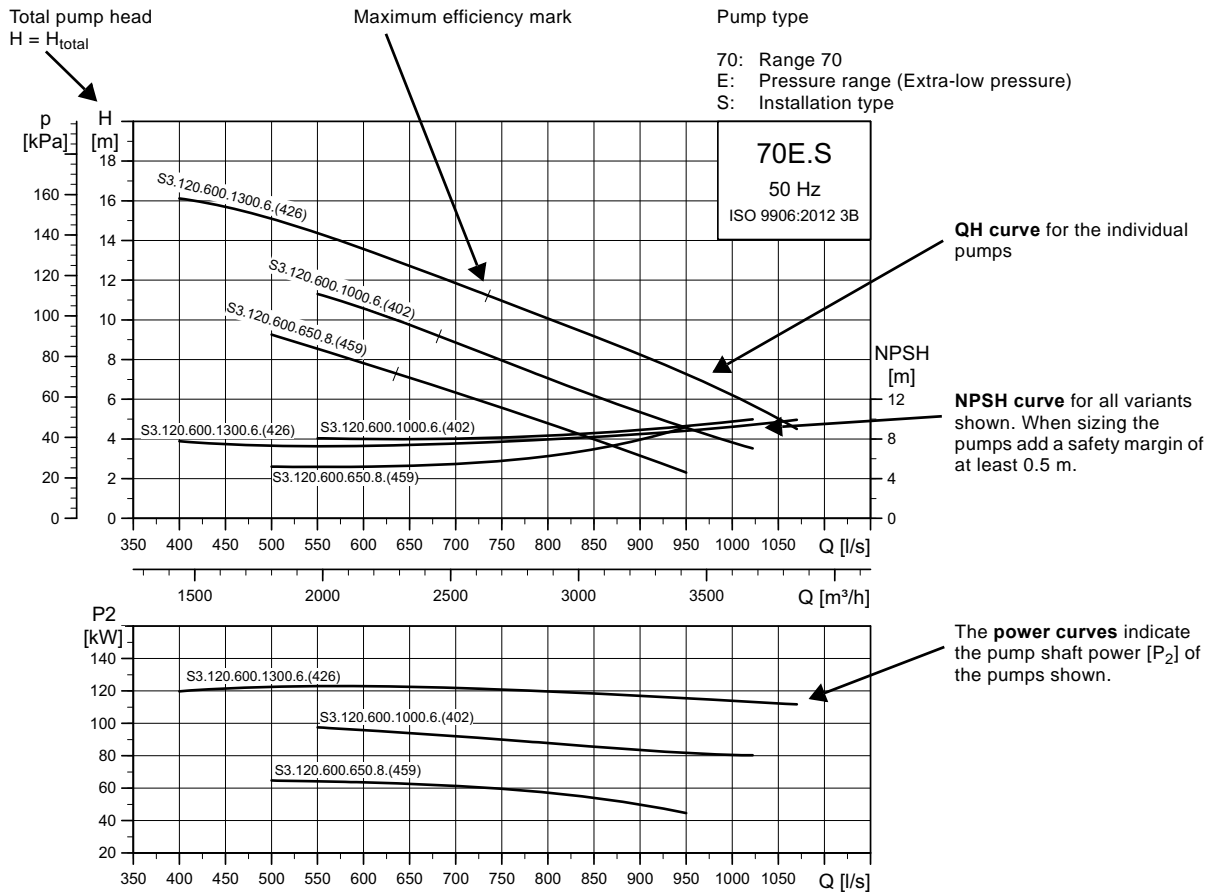
TM04 3274 4 008

9. Curve charts and technical data

The following many pages are divided into sections.

On pages 44 to 49 you will find a brief explanation of how to read the curve charts, the curve conditions, etc.

How to read the curve charts



TM04 0683 1914

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 pumps are 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 50-93.

- Tolerances according to ISO 9906:2012, grade 3B.
- The curves show pump performance with different impeller diameters at rated speed.
- The curves apply to the pumping of airless water at a temperature of 20 °C and a kinematic viscosity of 1 mm²/s (1 cSt).
- **NPSH:** The 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 case of densities other than 1000 kg/m³, the outlet pressure is proportional to the density.
- When pumping liquids with a density higher than 1000 kg/m³, motors with correspondingly higher outputs must be used.

Calculation of total head

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

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

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.

Pump performance testing

S pump testers are all capable of performing hydraulic performance tests according to ISO 9906:2012 requirements.

ISO 9906:2012 sets standards for "rotodynamic pumps, Hydraulic performance acceptance tests, Grades 1, 2 and 3".

Performance acceptance grades

Six-pump-performance-test acceptance grades, 3B, 2B, 2U, 1B, 1E and 1U are defined in ISO 9906:2012.

Acceptance grade	Mandatory measurements		Optional measurements	
	Q	H	P1	Eta-tot
3B	± 9 %	± 7 %	+ 9 %	- 7 %
2B	± 8 %	± 5 %	+ 8 %	- 5 %
2U	+ 16 %	+ 10 %	+ 16 %	
1B	± 5 %	± 3 %	+ 4 %	- 3 %
1E	± 5 %	± 3 %	+ 4 %	
1U	+ 10 %	+ 6 %	+ 10 %	≥ 0 %

Q: Flow

H: Head

P1: Total consumed power

Eta-tot: Total efficiency

These tolerance grades can be used in the contract between the pump manufacturer and the customer, or they can be used as part of a default tolerance factor for cases in which no specific tolerance grade has been agreed between the manufacturer and the customer.

The performance acceptance grades are explained in *Specifying acceptance grades* on pages 48 and 49, showing the performance grades related to an ordinary pump curve.

The guarantee point

According to ISO 9906:2012 the acceptance-grade tolerance applies to one guarantee point.

A guarantee point is defined by a guaranteed flow rate and a guaranteed head. In addition, either minimum total efficiency or maximum total input power may be guaranteed at the specified conditions.

This means that the standard sets guidelines for a duty point guaranteed for the following:

- Q and H, or
- Q, H and total efficiency (Eta-total), or
- Q, H and total consumed power (P1).

The guarantee point is defined by a minimum of five measured test points.

Example of a duty point test living up to ISO 9906:2012 requirements.

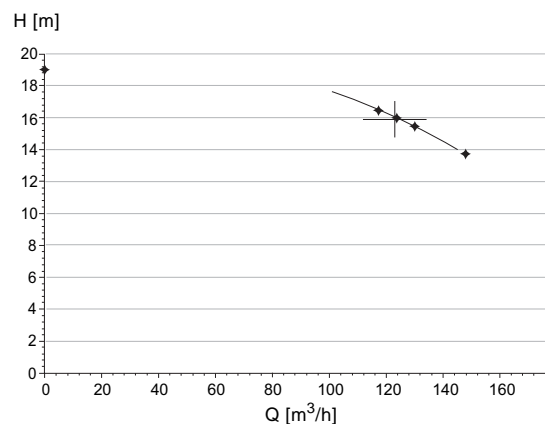


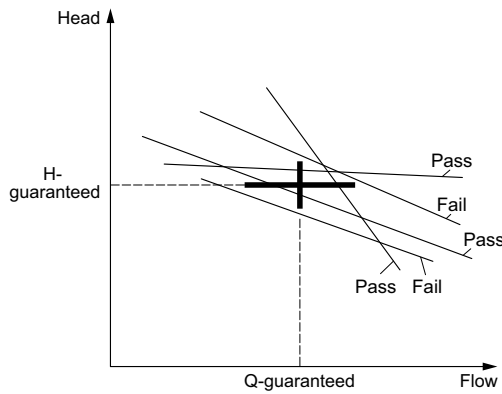
Fig. 23 Five measured test points are used to verify one guarantee point

Evaluation of performance

The test must show that the measured pump curve touches or passes through a tolerance surrounding the guarantee point, as defined by the selected acceptance grade.

Guarantee-point evaluation must be made at the rated speed, which for S pumps means 50 Hz or 60 Hz.

TM07 0448 5117



TM07 1544 1818

Fig. 24 Pump curves that either pass or fail to cross the tolerance cross of the guarantee point

Performance-test types for end-suction pumps

Two types of performance tests are available for S pumps:

- duty-point-verification test
- curve test.

Tests carried out on S pumps

- Tests are saved for at least five years and can be traced using the pump's unique serial number.
- It is not possible to change acceptance grade on an already tested and supplied pump; – if required, a re-test of the pump is made.
- Witness testing can be arranged.

Duty-point-verification test, Grades 3B, 2B, 2U, 1B, 1E and 1U

This test method offers the possibility to perform a duty-point verification of the following:

- Q and H, or
- Q, H and total efficiency (Eta-tot), or
- Q, H and total consumed power (P1).

Acceptance grade	Mandatory measurements		Optional measurements	
	Q	H	P1	Eta-tot
3B	Standard		On request	
2B	On request		On request	
2U	On request		On request	
1B	On request		On request	
1E	On request		On request	
1U	On request		On request	

What Grundfos is able to guarantee for the different acceptance grades will be evaluated on a case-by-case basis. Contact your local sales company on this.

Grundfos makes duty-point verification according to ISO 9906:2012 for one guarantee point at full speed, 50 or 60 Hz. The customer must tell Grundfos which duty point to verify.

The requested duty point is verified by five measured points.

Grade 1U duty-point verification

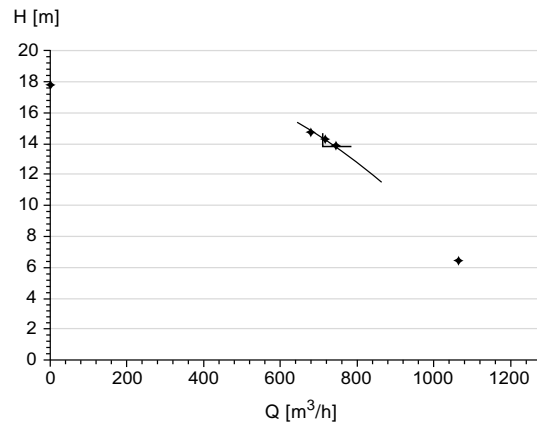
The following example illustrates performance testing according to Grade 1U.

Flow rate and head are mandatory, and efficiency or power consumption, P1, is optional.

Tolerances for a Grade 1U test are as follows:

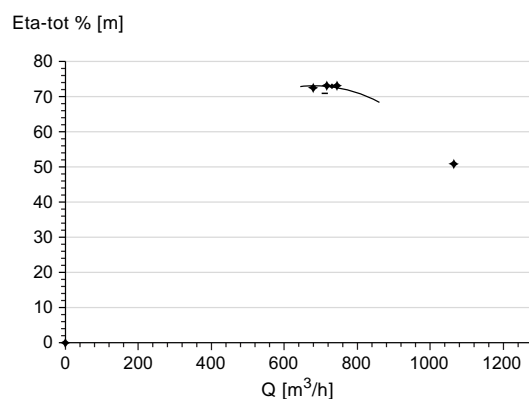
- Flow rate: 10 %
- Head: 6 %
- Efficiency: 0 %, only equal to or better than the guaranteed value
- P1: 10 %

1. Q, H and Eta-tot are tested and verified



TM07 1542 1618

Fig. 25 Measured values for flow rate and head



TM07 1543 1618

Fig. 26 Measured values for total efficiency

2. Q, H and P1 tested and verified

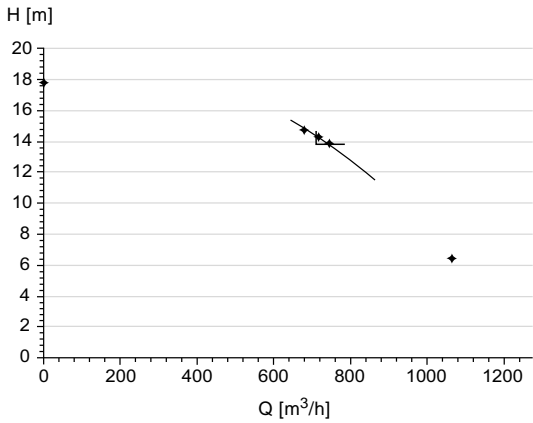


Fig. 27 Measured values for flow rate and head

TM07 1542 1618

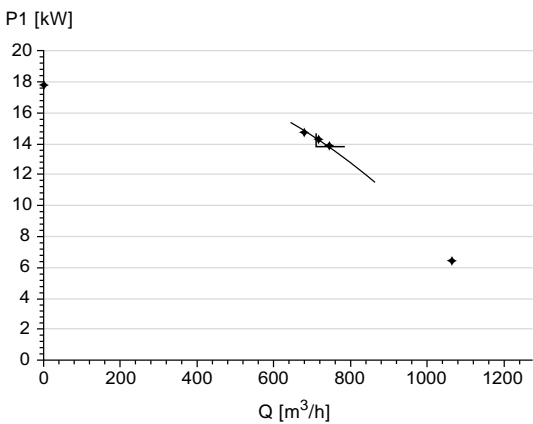


Fig. 28 Measured values for consumed power

TM07 1545 1618

Note that other points than the guarantee point can be measured and displayed in a curve-test report according to Grade 3B tolerances.

Curve test, Grade 3B

This test method is developed by Grundfos and is based on ISO 9906:2012 performance acceptance grade 3B tolerances: $Q = \pm 9\%$, $H = \pm 7\%$.

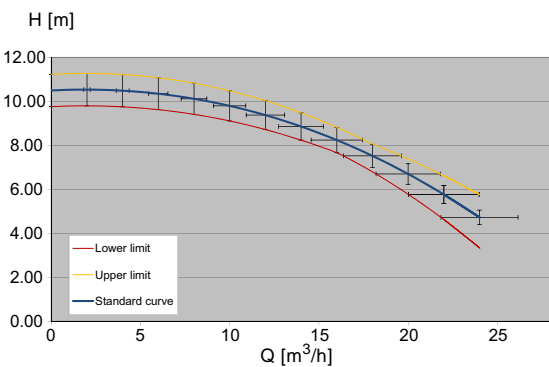


Fig. 29 Q-H curve with tolerance crosses on complete performance range

TM07 1515 1618

In fig. 29 tolerance crosses according to Grade 3B have been distributed across the complete performance range of a pump. We generate the upper and lower limit of the performance curve by drawing two curves at the outlines of these crosses. When the pump is tested, and the measured point is located within the range between the upper and lower limit, it meets the ISO 9906:2012 Grade 3B tolerances. This way of qualifying the pump performance is stricter than a duty-point-verification test for Grade 3B.

How does Grundfos perform curve testing for S pumps?

Grundfos applies two types of curve tests:

- a reference curve test
- a performance curve test.

Reference curve test, Grade 3B

A reference curve test is made when no curve test report is specified with the order. Three or four test points are measured depending on production site, and no curve test report is supplied with the pump. Measurements are made to maintain and observe continuous quality and to ensure that the supplied pump is within test grade tolerances. Test grade tolerances are set as for Grade 3B but without certification.

Example of a reference curve test

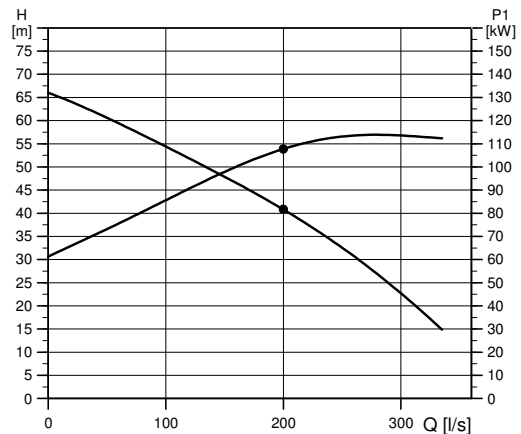


Fig. 30 Measured values for tested pump

TM07 1674 1918

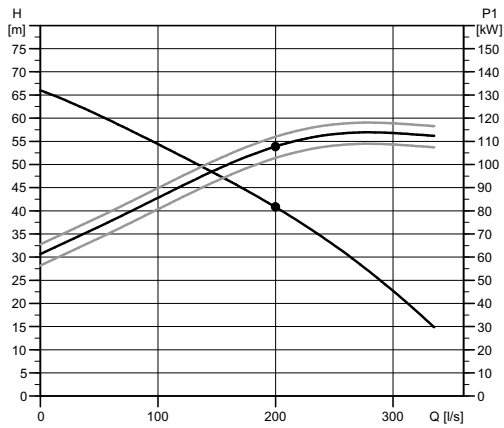


Fig. 31 The values in fig. 30 calculated to reference speed for comparison to a reference performance curve

TM07 1693 2018

If a pump performance report is requested at a later stage, only reference test data are available.

Performance curve test, grade 3B

A performance curve test is carried out when a curve test report is specified with the order.

The pump is tested at pre-specified flows, and test grade tolerances are set as for Grade 3B but without certification.

Example of an S pump curve test

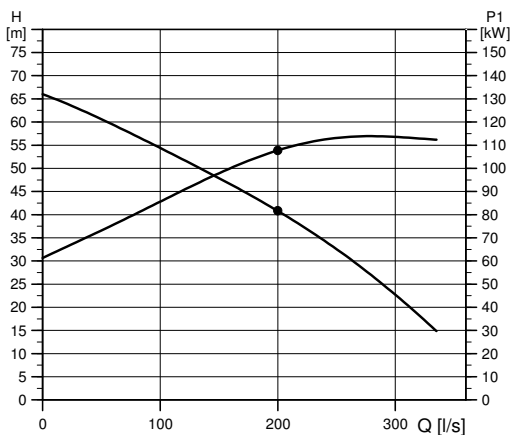


Fig. 32 Measured values for tested pump

TM07 1674 1918

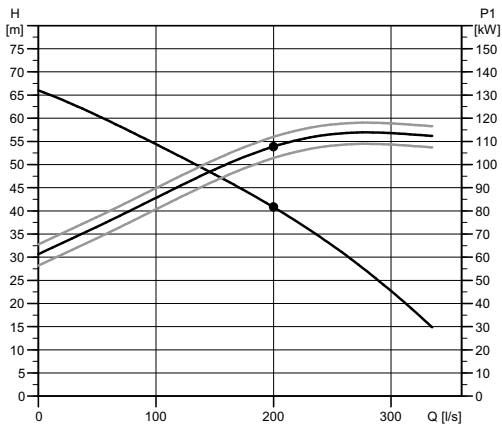


Fig. 33 The values in fig. 32 calculated to a reference speed for comparison to a reference performance

TM07 1693 2018

If the customer requires more points on the curve to be checked, individual measurements must be made, which is not part of the performance curve test.

Static high pressure test

All produced pumps undergo a static high pressure test of 1.5 x PN (nominal pressure of the pump).

Specifying acceptance grades

The graphs in the table on page 49 show the tolerances as stated in the standard, related to an ordinary pump curve. The graphs also show which pump performance to expect if the customer, having the same pump to start with, orders a pump with the same guarantee point for different tolerances (B, E or U) within the acceptance grades.

In some cases, it will not be possible to fulfil the same guarantee point for a unilateral tolerance as it will for a bilateral tolerance. This is indicated by the lower curve for "E" and "U" grades.

If the requested guarantee point is the same for a Grade U pump as for a Grade B pump, the consequence of the production tolerances could be that a larger pump is required to obtain the requested duty point.

What Grundfos is able to guarantee for the different acceptance grades will be evaluated on a case-by-case basis. Contact your local sales company on this.

Acceptance grades and tolerances

Acceptance grade B

This acceptance grade refers to grades with a bilateral tolerance on flow rate and head and with a tolerance on efficiency.

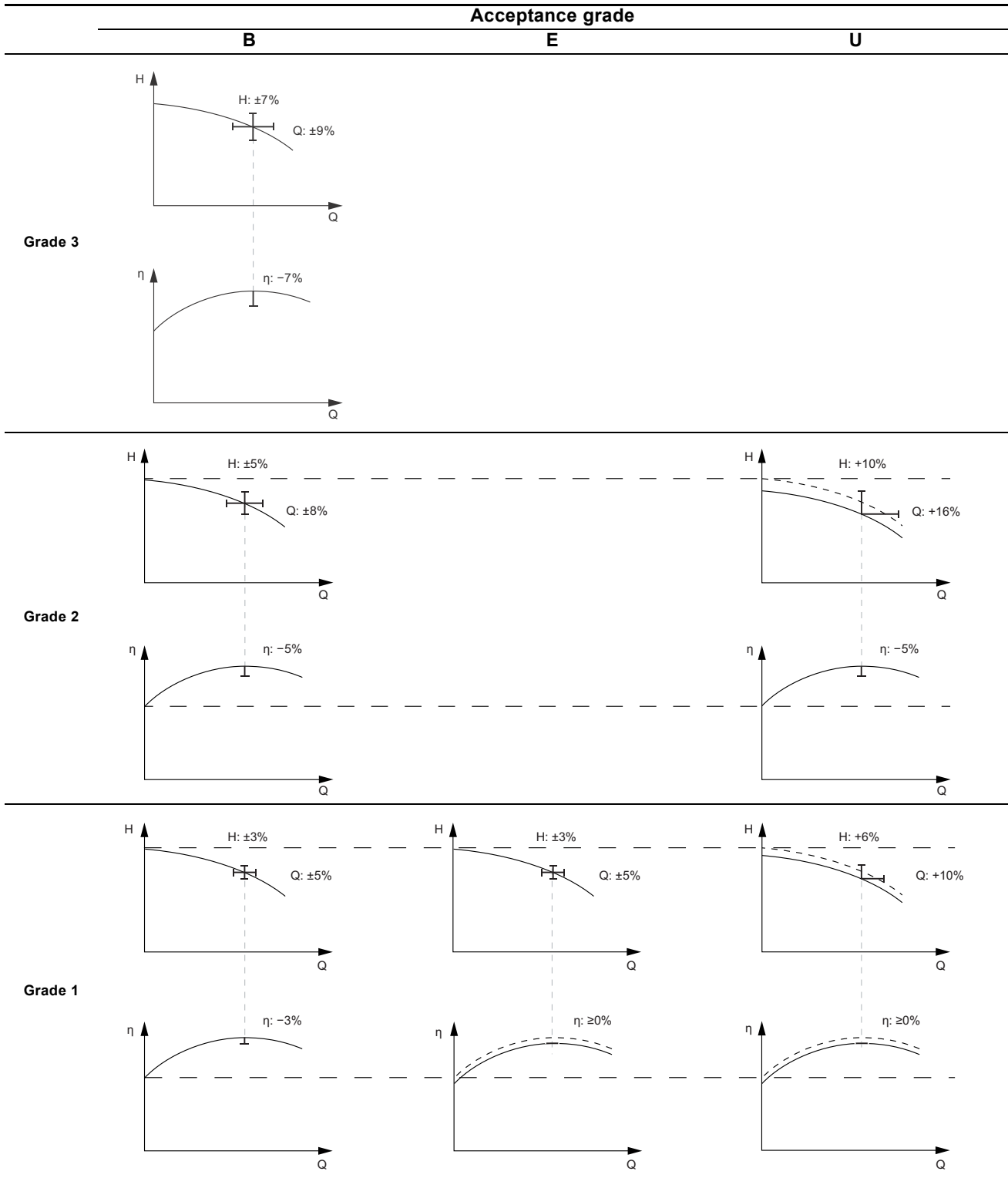
Acceptance grade E

This acceptance grade refers to a grade with a bilateral tolerance on flow rate and head, but without tolerance on efficiency.

Acceptance grade U

This acceptance grade refers to a grade with a unilateral tolerance on flow rate and head. For the 2U grade, there is a tolerance on efficiency. For the 1U grade, there is no tolerance on efficiency.

Note that if the acceptance grade changes from Grade 1B to 1U, the customer does not necessarily get a better pump with a higher efficiency. More likely, he gets a pump where the performance is always to the positive side of the guarantee point.



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

When the pumps are being tested or are tested with a certification, it is possible for the customer to witness the testing procedure according to ISO 9906:2012.

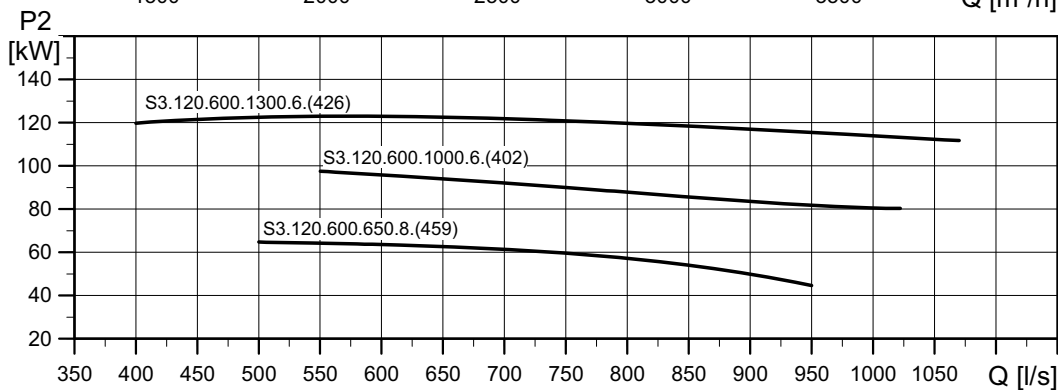
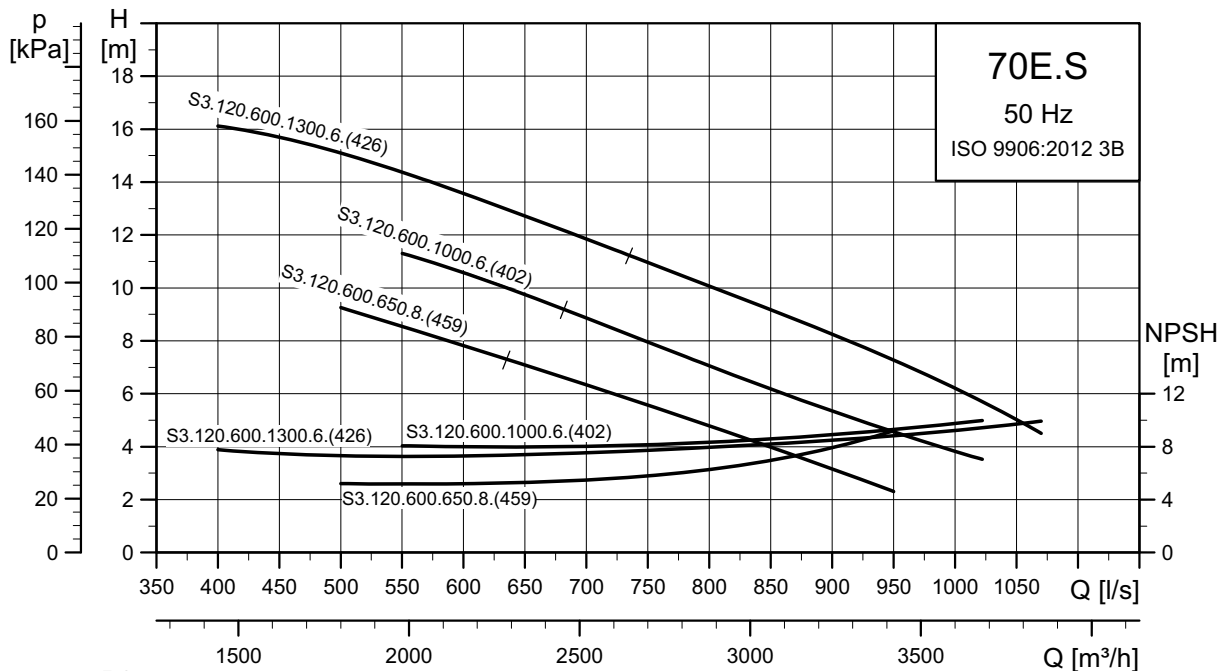
The witness test is not a certificate and will not result in a written statement from Grundfos. The witness itself is the only guarantee that everything is carried out as prescribed in the testing procedure.

If the customer wants to witness the test, place this request on the order.

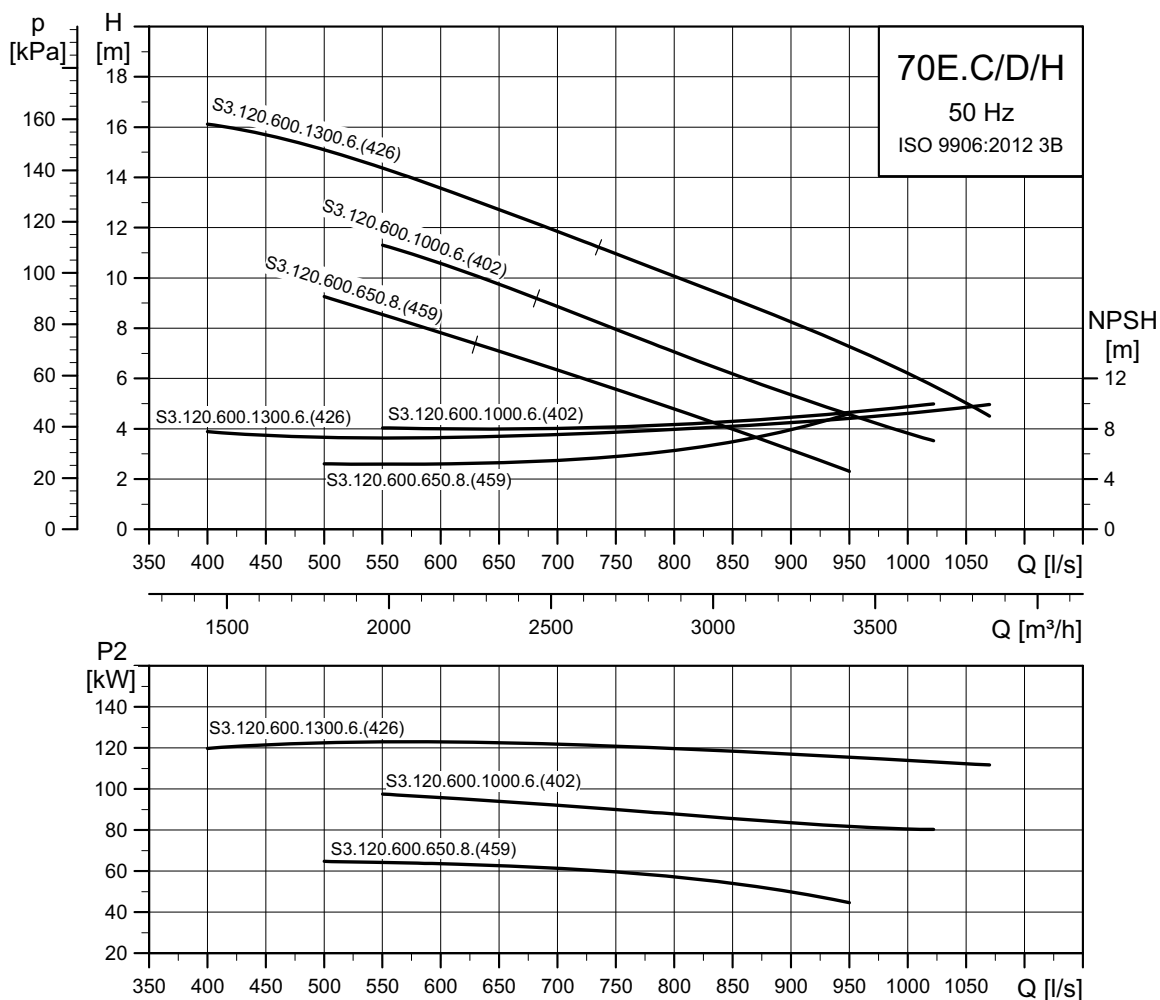
10. Performance curves and technical data

Extra-low pressure - 3 x 400/690 V

S3.120.600.650.8, S3.120.600.1000.6 and S3.120.600.1300.6



TM04 0683 1914



TM04 0684 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1			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		
S3.120.600.650.8.70E.S.459...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135	
S3.120.600.650.8.70E.C.459...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135	
S3.120.600.650.8.70E.D.459...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135	
S3.120.600.650.8.70E.H.459...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135	
S3.120.600.1000.6.70E.S.402...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090	
S3.120.600.1000.6.70E.C.402...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090	
S3.120.600.1000.6.70E.D.402...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090	
S3.120.600.1000.6.70E.H.402...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090	
S3.120.600.1300.6.70E.S.426...	141	130	6	982	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273	
S3.120.600.1300.6.70E.C.426...	141	130	6	982	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273	
S3.120.600.1300.6.70E.D.426...	141	130	6	982	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273	
S3.120.600.1300.6.70E.H.426...	141	130	6	982	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273	

¹ Low/high voltage (400/690 V).

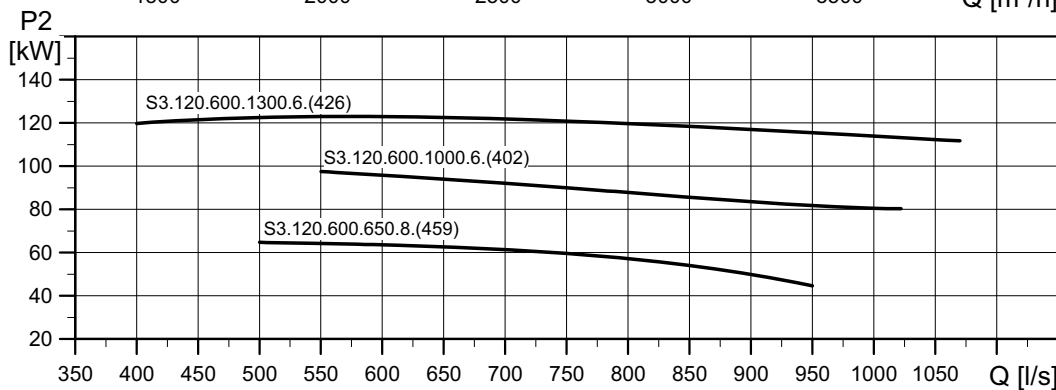
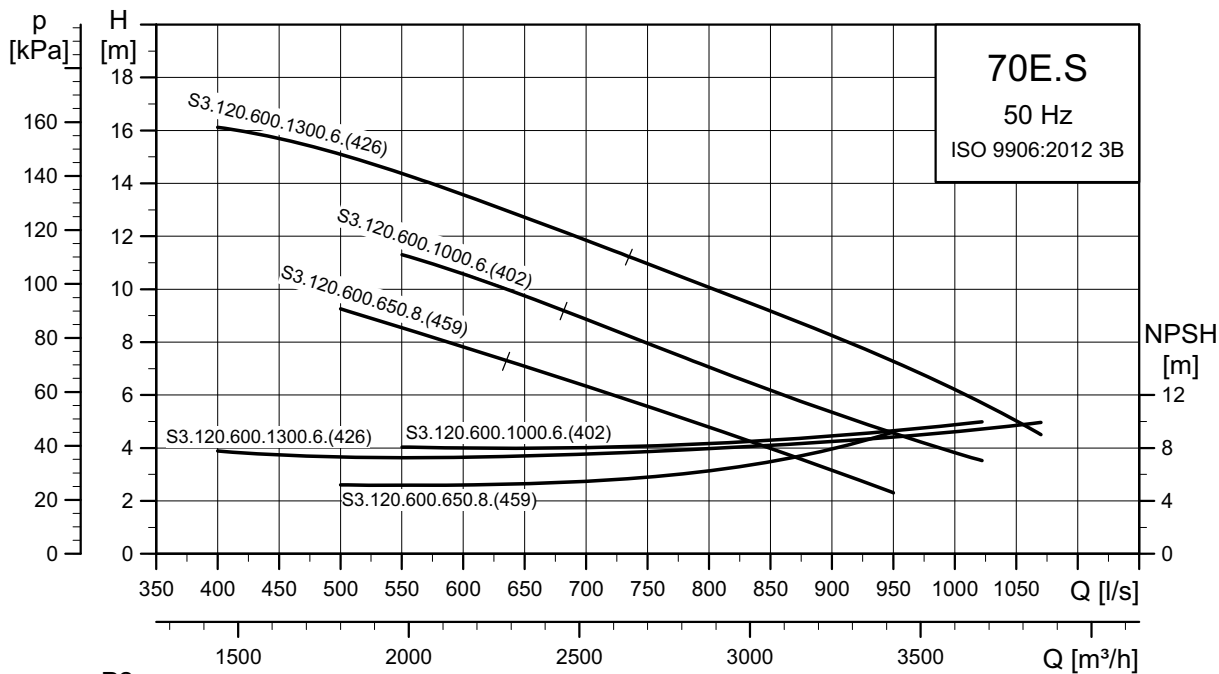
Note: Enclosure class: IP68

Pump data

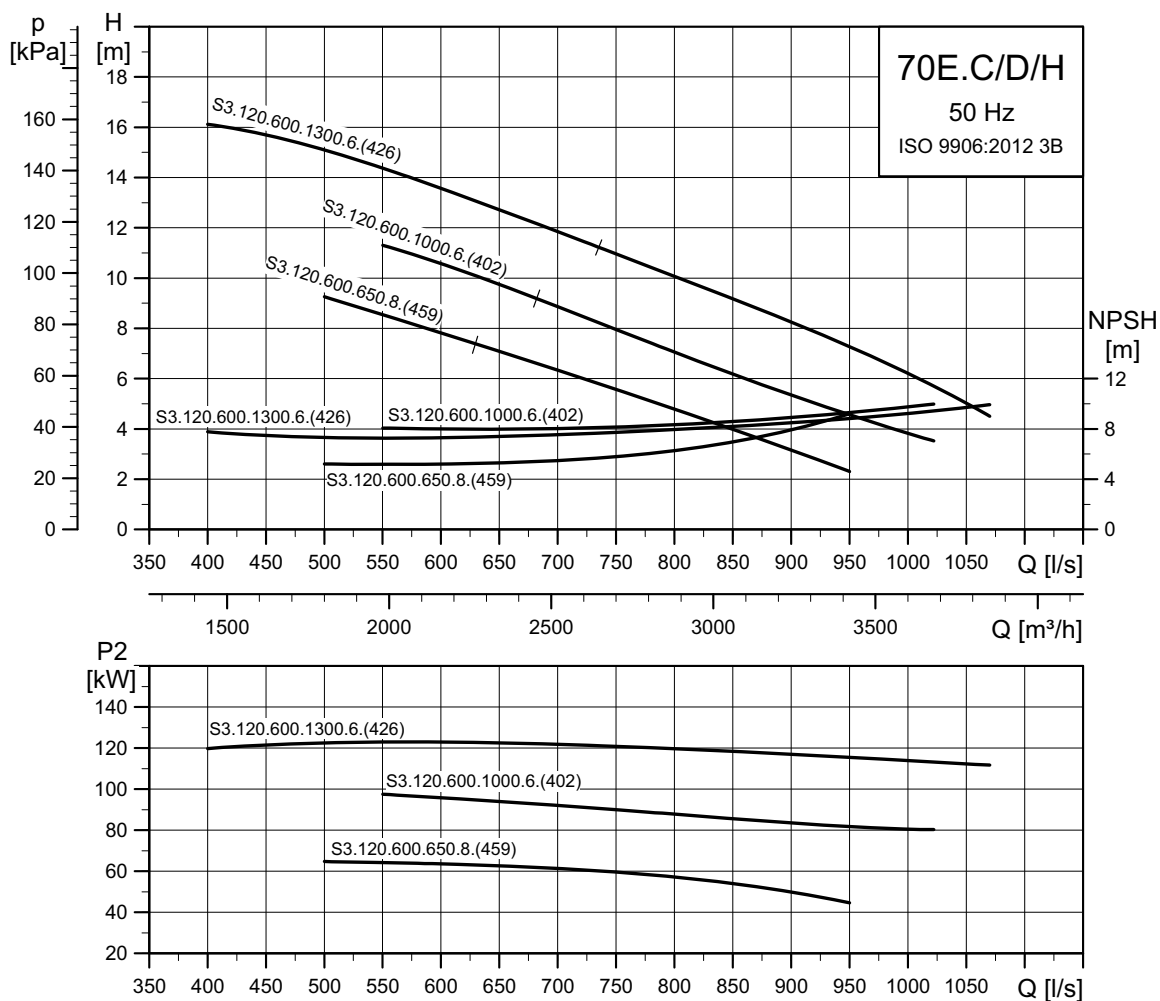
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.120.600.650.8.70E.S/C/D/H.459...	459			
S3.120.600.1000.6.70E.S/C/D/H.402...	402	120	10	20
S3.120.600.1300.6.70E.S/C/D/H.426...	436			

Extra-low pressure - 3 x 415 V

S3.120.600.650.8, S3.120.600.1000.6 and S3.120.600.1300.6



TM04 0683 1914



TM04 0684 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N			η_{motor} [%]			$\cos \phi$			Moment of inertia [kgm ²]	Breakdown torque M_{max} [Nm]
						[A]	[A]		1/2	3/4	1/1	1/2	3/4	1/1		
S3.120.600.650.8.70E.S.459...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135	
S3.120.600.650.8.70E.C.459...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135	
S3.120.600.650.8.70E.D.459...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135	
S3.120.600.650.8.70E.H.459...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135	
S3.120.600.1000.6.70E.S.402...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090	
S3.120.600.1000.6.70E.C.402...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090	
S3.120.600.1000.6.70E.D.402...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090	
S3.120.600.1000.6.70E.H.402...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090	
S3.120.600.1300.6.70E.S.426...	141	130	6	982	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273	
S3.120.600.1300.6.70E.C.426...	141	130	6	982	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273	
S3.120.600.1300.6.70E.D.426...	141	130	6	982	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273	
S3.120.600.1300.6.70E.H.426...	141	130	6	982	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273	

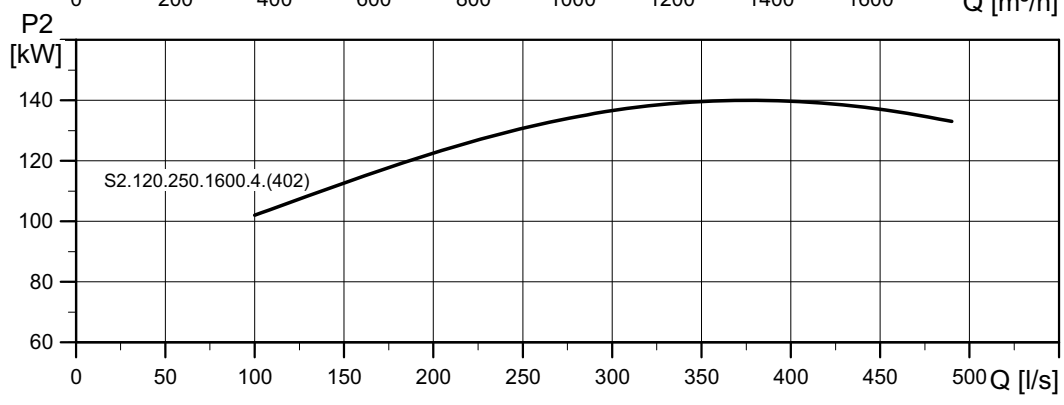
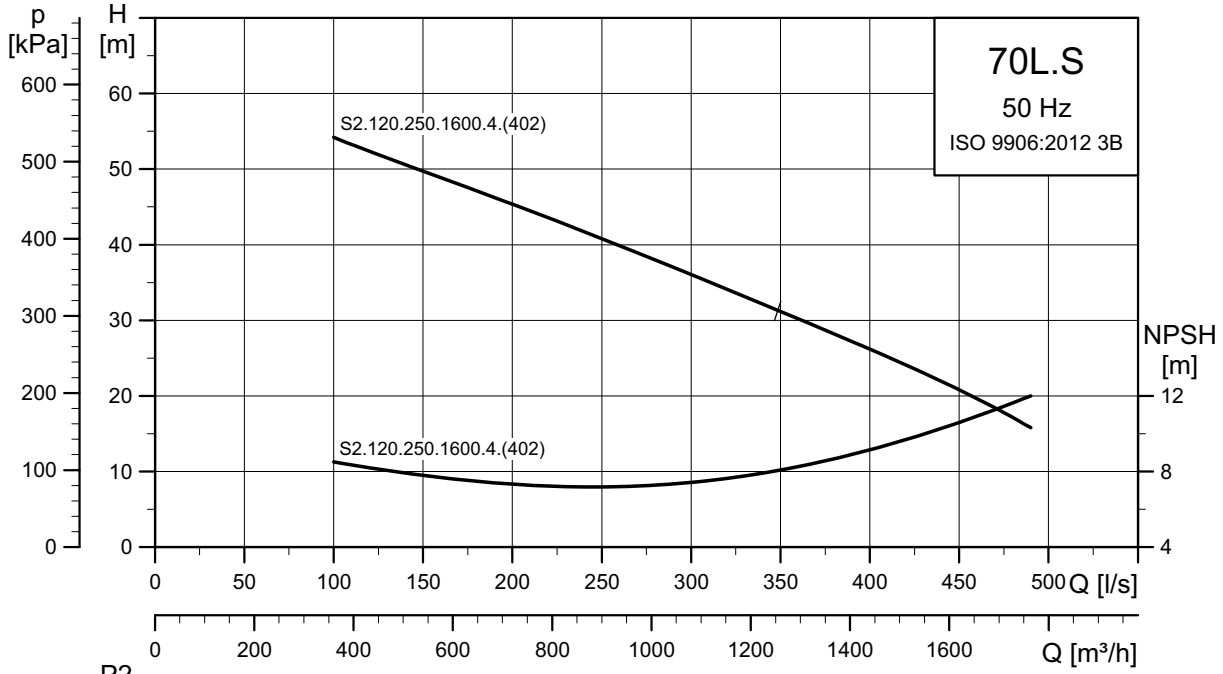
Note: Enclosure class: IP68

Pump data

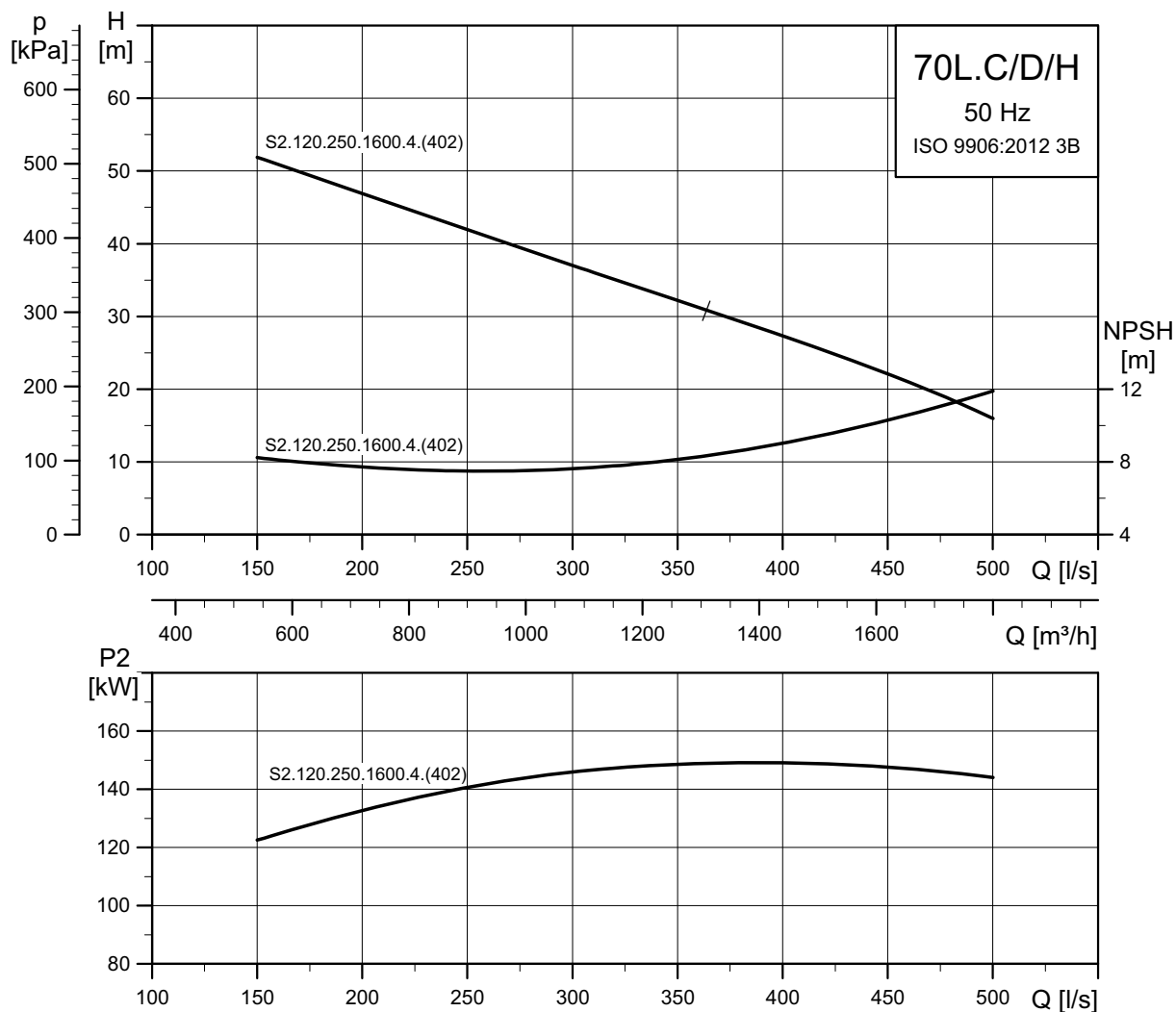
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.120.600.650.8.70E.S/C/D/H.459...	459			
S3.120.600.1000.6.70E.S/C/D/H.402...	402	120	10	20
S3.120.600.1300.6.70E.S/C/D/H.426...	436			

Low pressure - 3 x 400/690 V

S2.120.250.1600.4



TM04 0689 1914



TM04 0690 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1			$\eta_{motor} [\%]$			Cos φ			Moment of inertia [kgm ²]	Breakdown torque M_{max} [Nm]
						I_N [A]	I_{start} [A]	I_{start}/I_N	1/2	3/4	1/1	1/2	3/4	1/1		
S2.120.250.1600.4.70L.S.402...	167	155	4	1468	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	
S2.120.250.1600.4.70L.C.402...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	
S2.120.250.1600.4.70L.D.402...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	
S2.120.250.1600.4.70L.H.402...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	

¹ Low/high voltage (400/690 V).

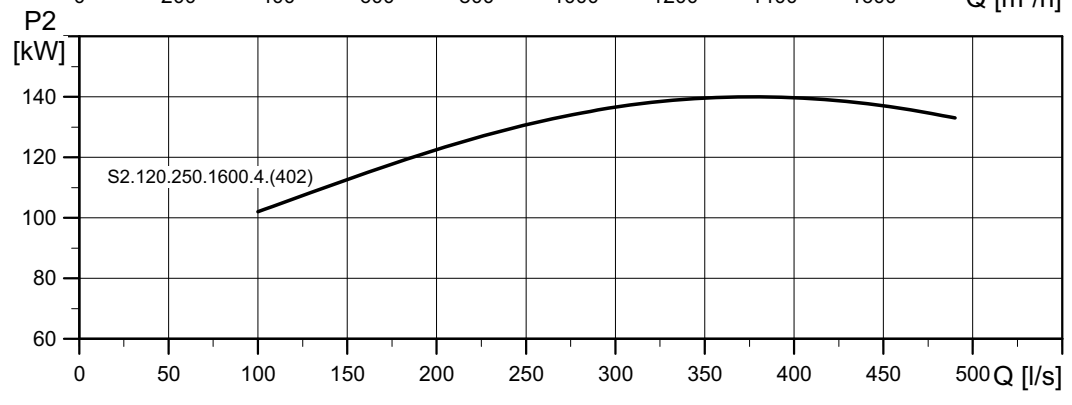
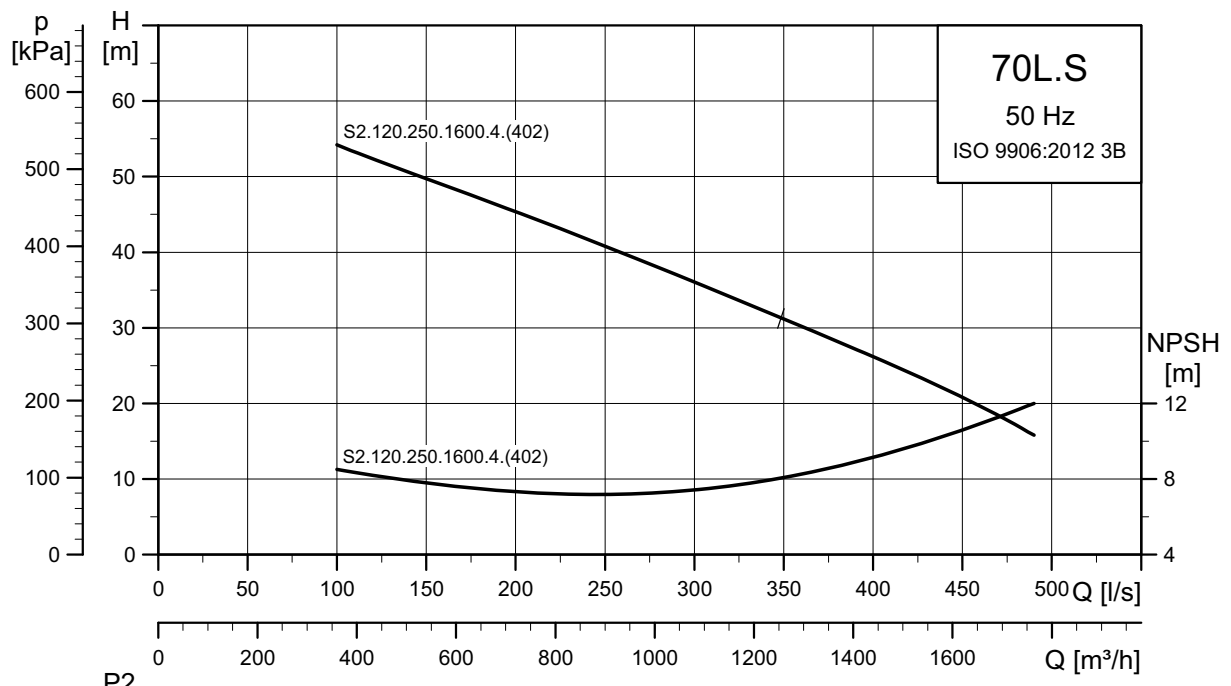
Note: Enclosure class: IP68

Pump data

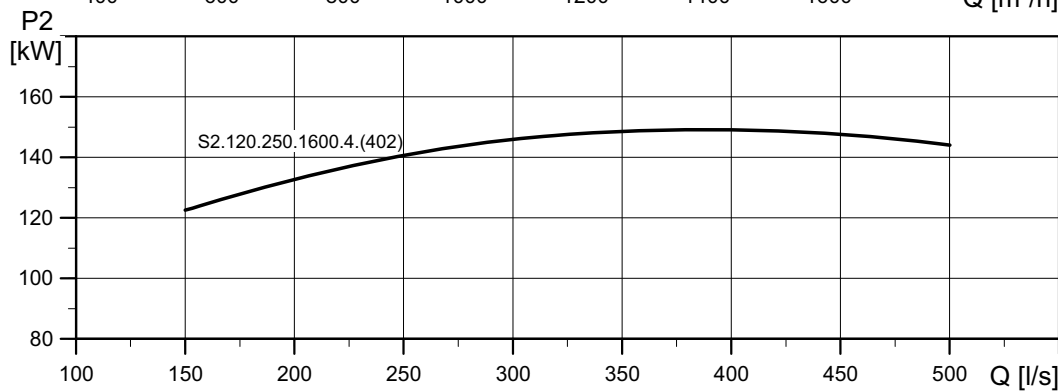
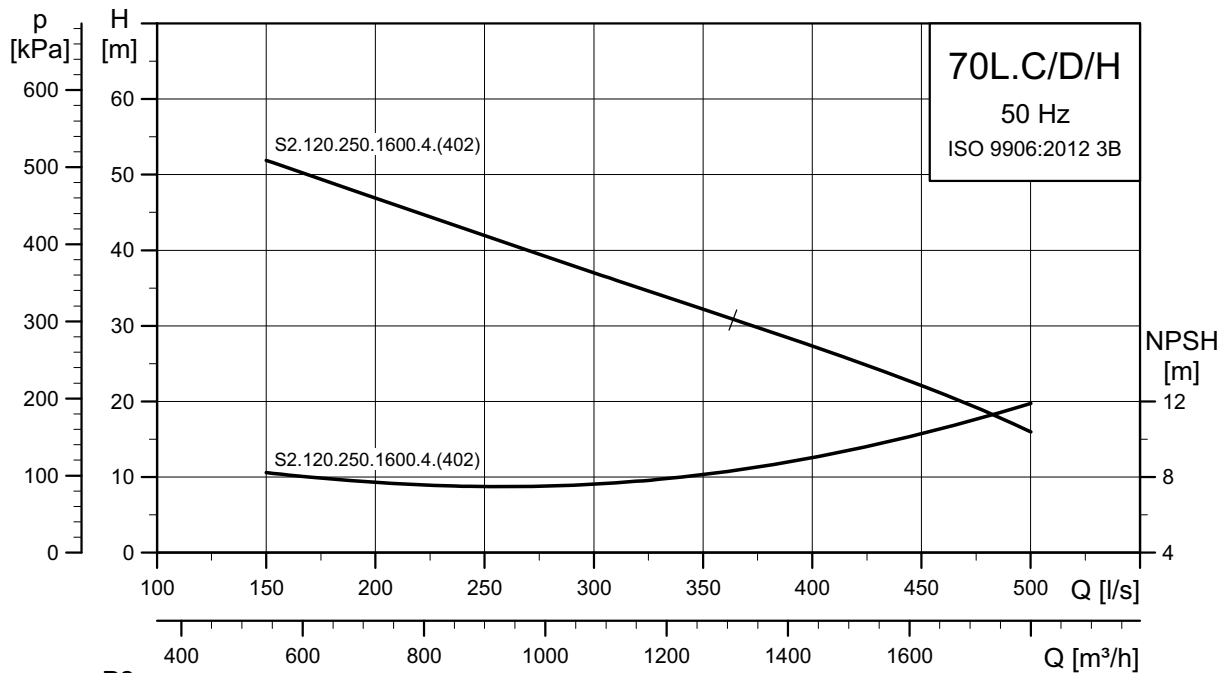
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.120.250.1600.4.70L.S/C/D/H.402...	402	120	10	20

Low pressure - 3 x 415 V

S2.120.250.1600.4



TM04 0689 1914



TM04 0690 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. 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		
S2.120.250.1600.4.70L.S.402...	167	155	4	1468	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414
S2.120.250.1600.4.70L.C.402...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414
S2.120.250.1600.4.70L.D.402...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414
S2.120.250.1600.4.70L.H.402...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414

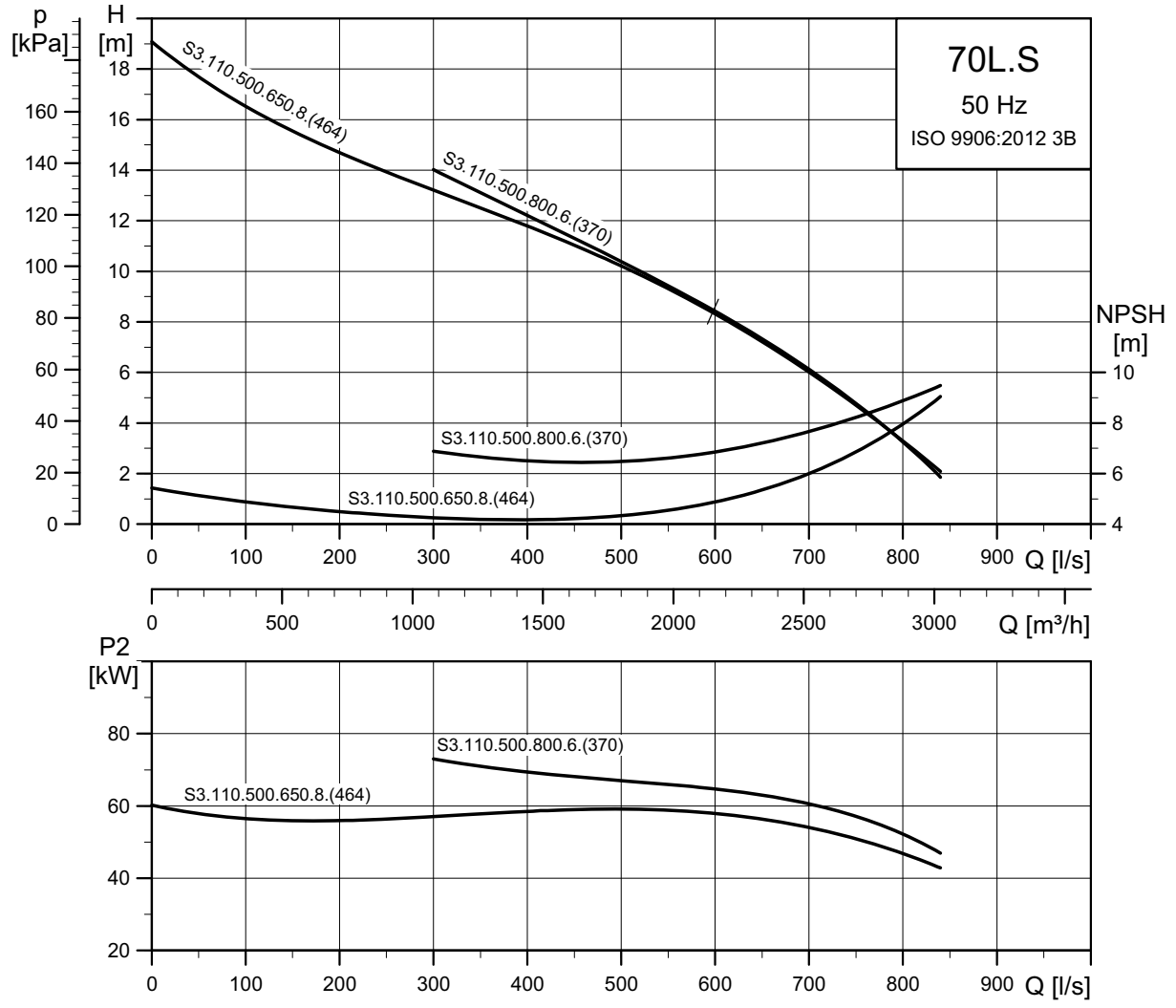
Note: Enclosure class: IP68

Pump data

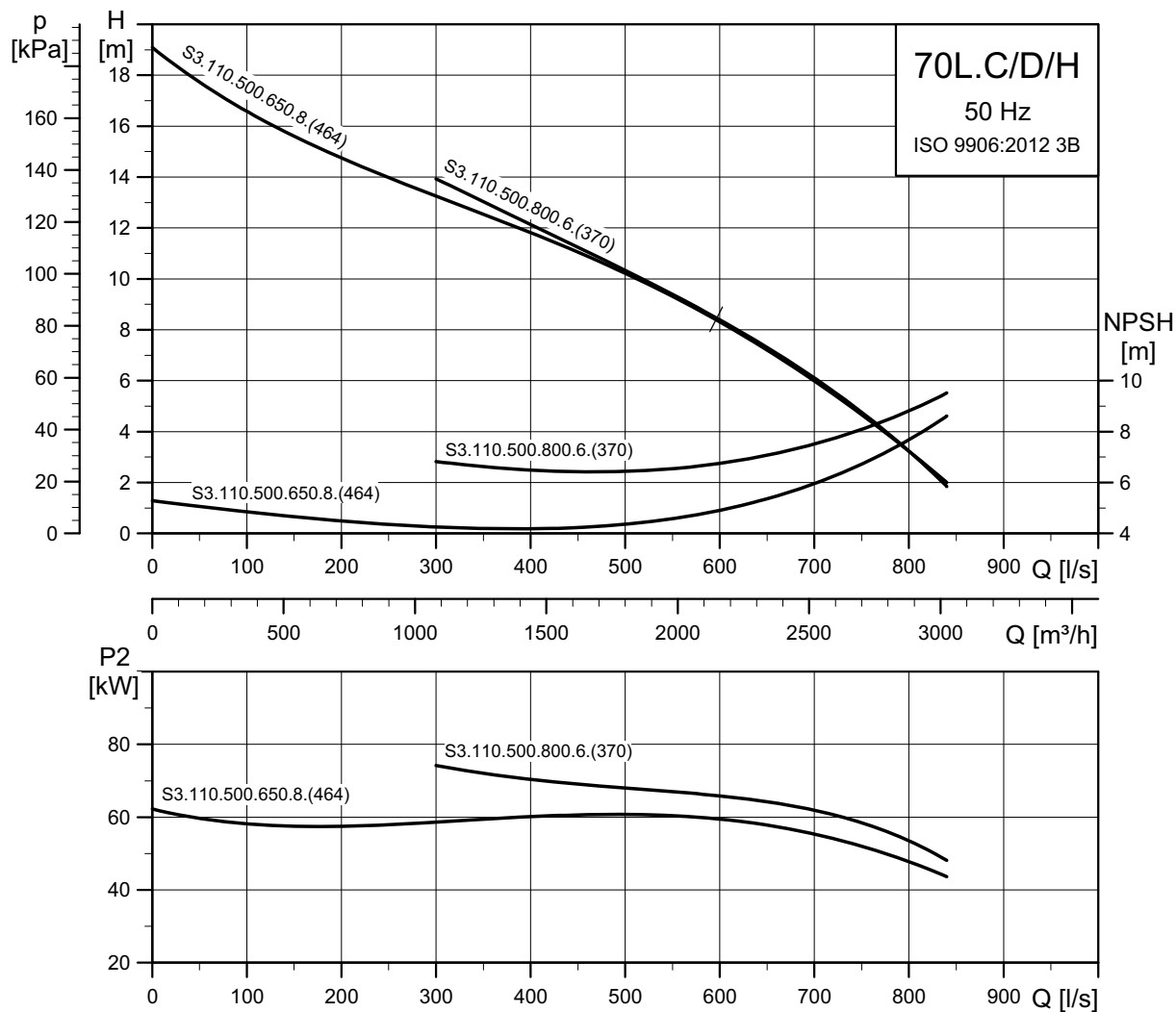
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.120.250.1600.4.70L.S/C/D/H.402...	402	120	10	20

Low pressure - 3 x 400/690 V

S3.110.500.650.8 and S3.110.500.800.6



TM04 0687 1914



TM04 0688 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1			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		
S3.110.500.650.8.70L.S.464...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135	
S3.110.500.650.8.70L.C.464...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135	
S3.110.500.650.8.70L.D.464...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135	
S3.110.500.650.8.70L.H.464...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135	
S3.110.500.800.6.70L.S.370...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090	
S3.110.500.800.6.70L.C.370...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090	
S3.110.500.800.6.70L.D.370...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090	
S3.110.500.800.6.70L.H.370...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090	

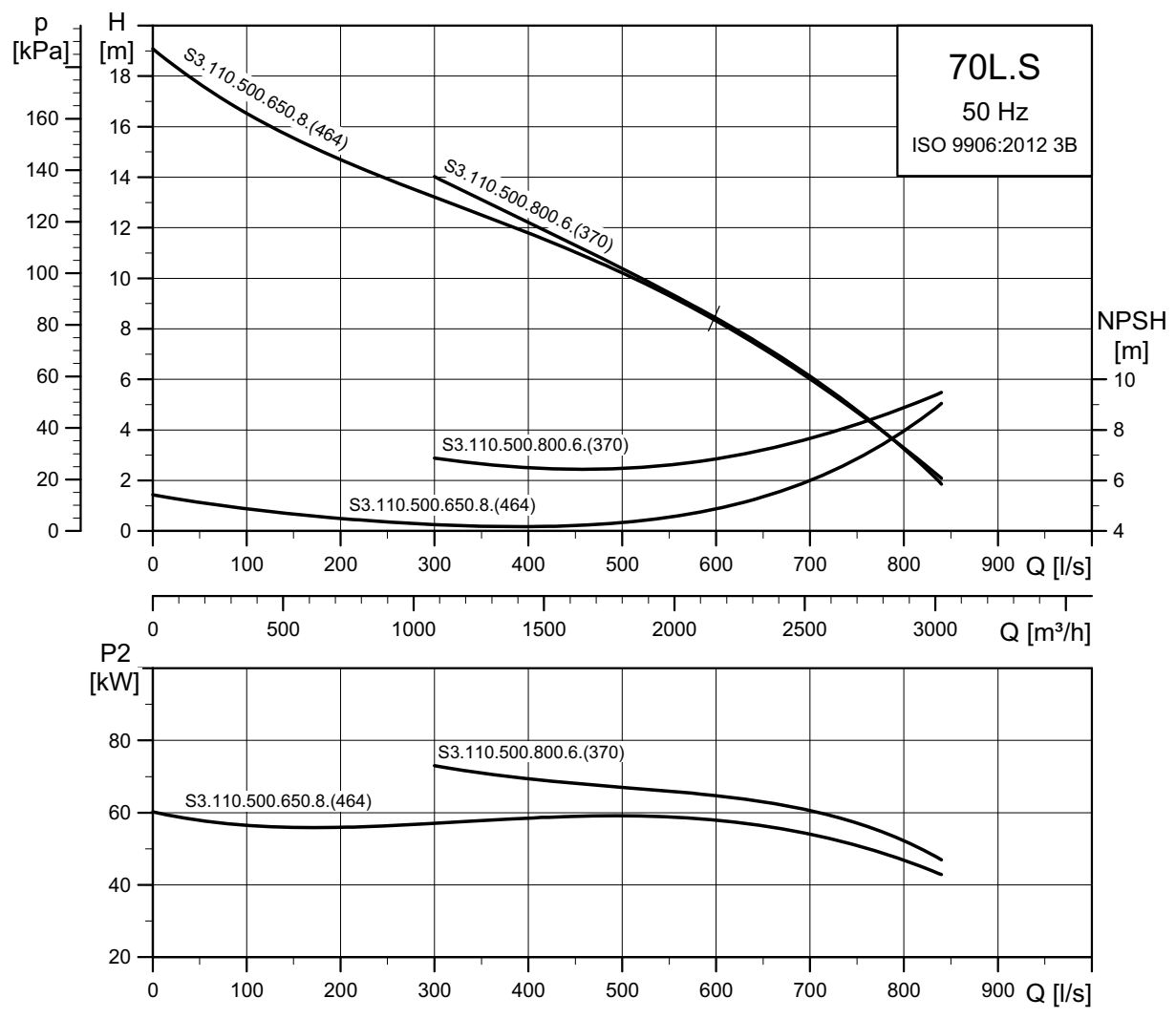
¹ Low/high voltage (400/690 V).

Note: Enclosure class: IP68

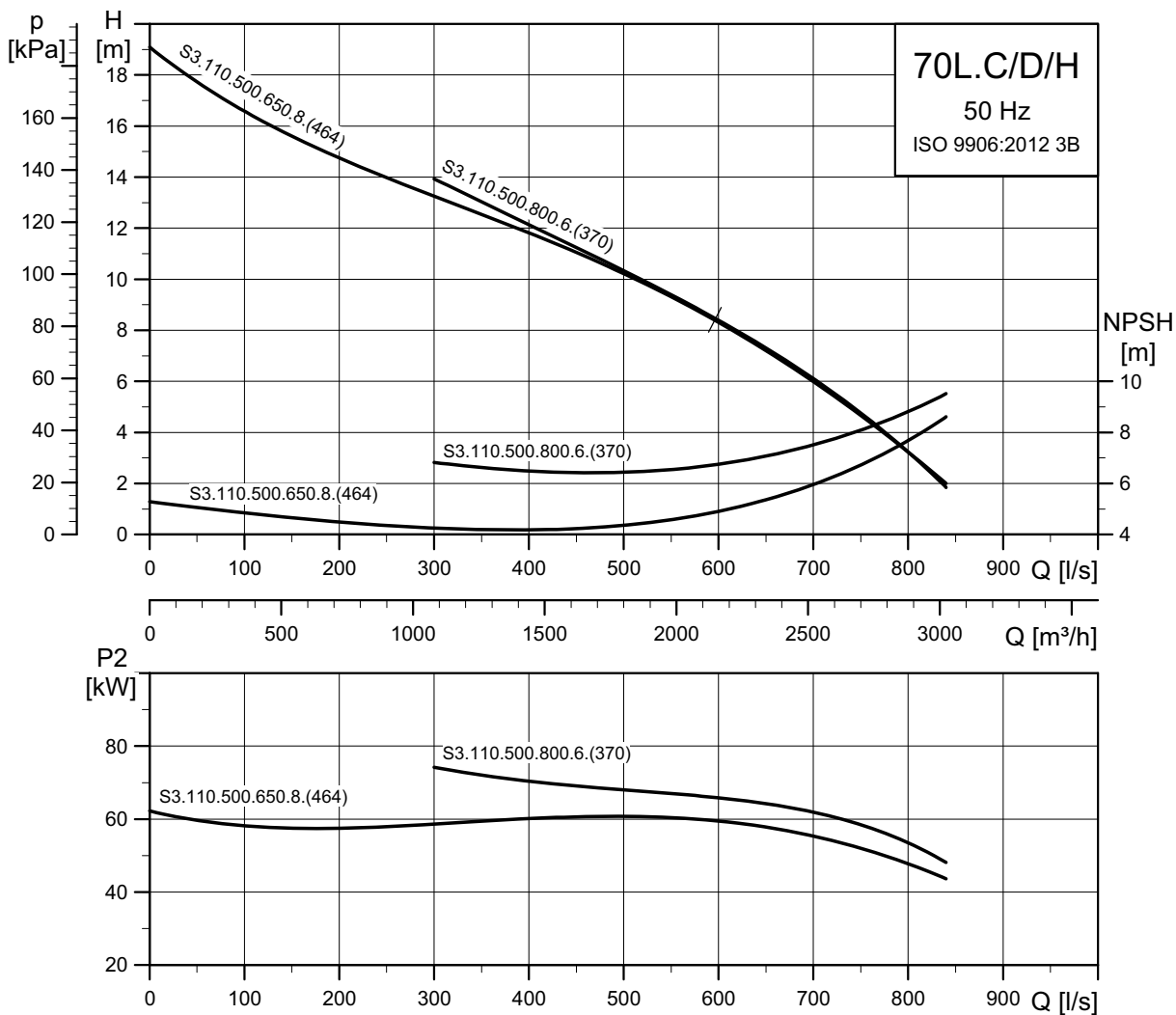
Pump data

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.110.500.650.8.70L.S/C/D/H.464...	464	110	10	20
S3.110.500.800.6.70L.S/C/D/H.370...	370			

Low pressure - 3 x 415 V
S3.110.500.650.8 and S3.110.500.800.6



TM04 0687 1914



TM04 0688 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N		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		
S3.110.500.650.8.70L.S.464...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135
S3.110.500.650.8.70L.C.464...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135
S3.110.500.650.8.70L.D.464...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135
S3.110.500.650.8.70L.H.464...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135
S3.110.500.800.6.70L.S.370...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090
S3.110.500.800.6.70L.C.370...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090
S3.110.500.800.6.70L.D.370...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090
S3.110.500.800.6.70L.H.370...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090

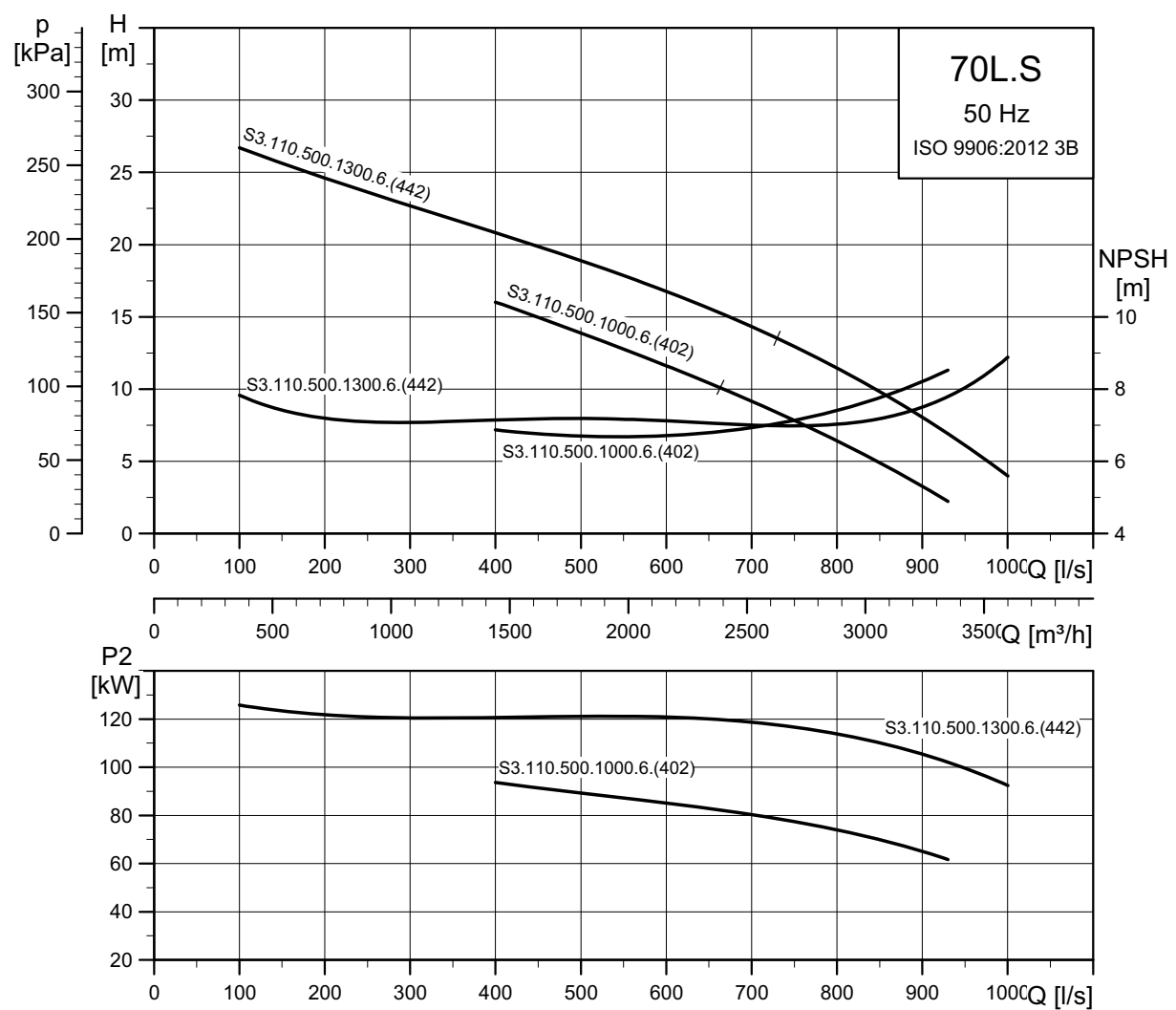
Note: Enclosure class: IP68

Pump data

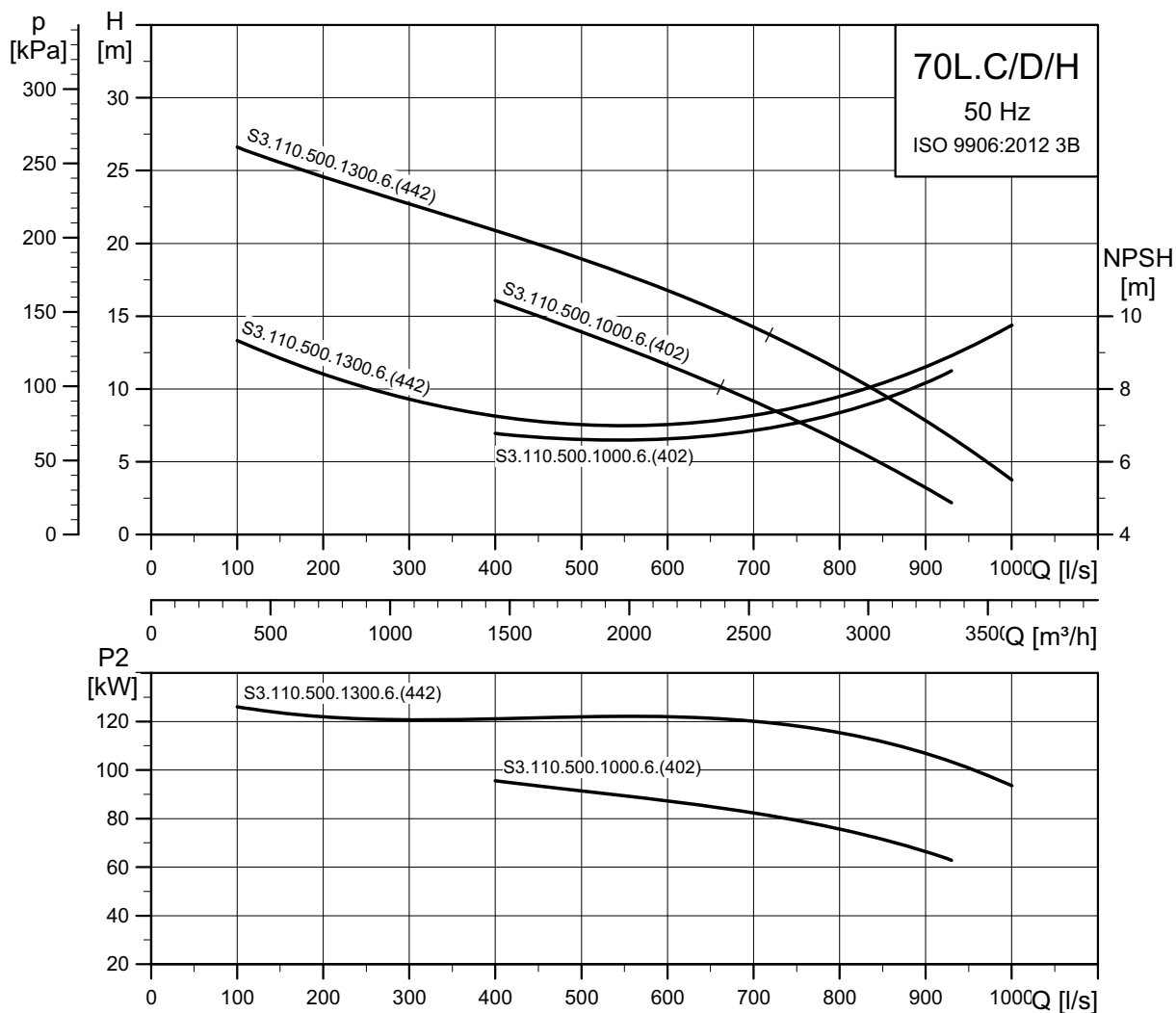
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.110.500.650.8.70L.S/C/D/H.464...	464	110	10	20
S3.110.500.800.6.70L.S/C/D/H.370...	370			

Low pressure - 3 x 400/690 V

S3.110.500.1000.6 and S3.110.500.1300.6



TM04 1929 1914



TM04 1930 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1		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		
S3.110.500.1000.6.70L.S.402...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S3.110.500.1000.6.70L.C.402...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S3.110.500.1000.6.70L.D.402...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S3.110.500.1000.6.70L.H.402...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S3.110.500.1300.6.70L.S.442...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273
S3.110.500.1300.6.70L.C.442...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273
S3.110.500.1300.6.70L.D.442...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273
S3.110.500.1300.6.70L.H.442...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273

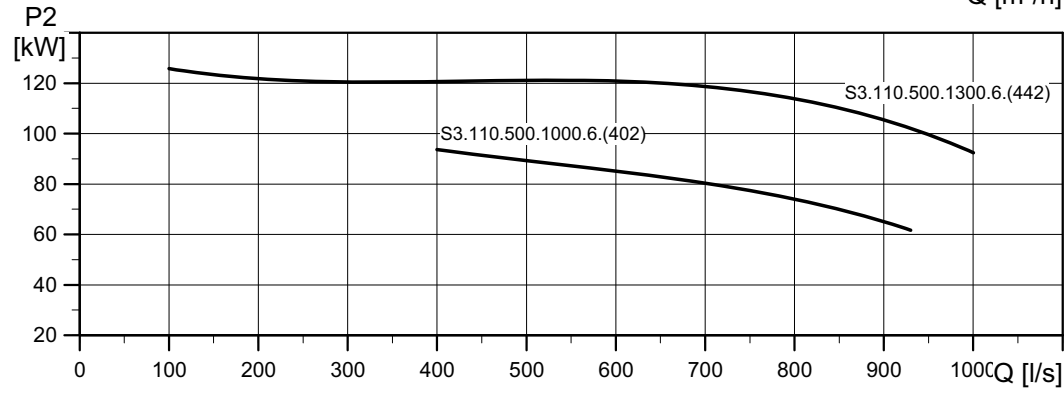
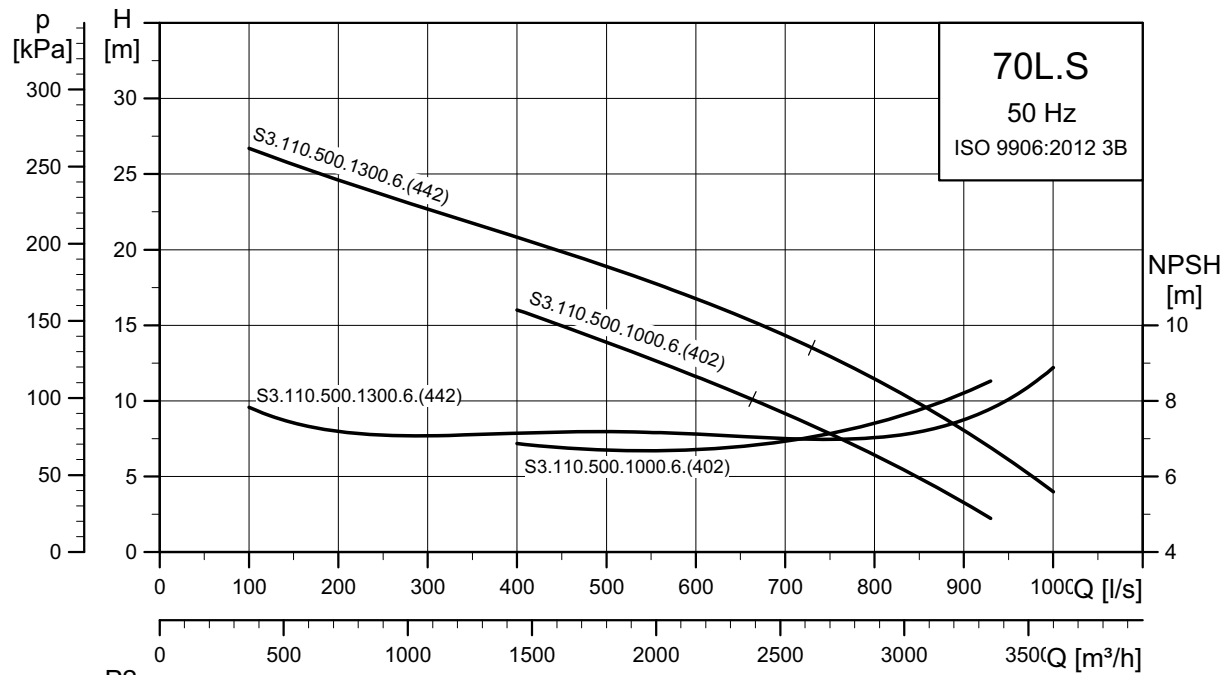
¹ Low/high voltage (400/690 V).

Note: Enclosure class: IP68

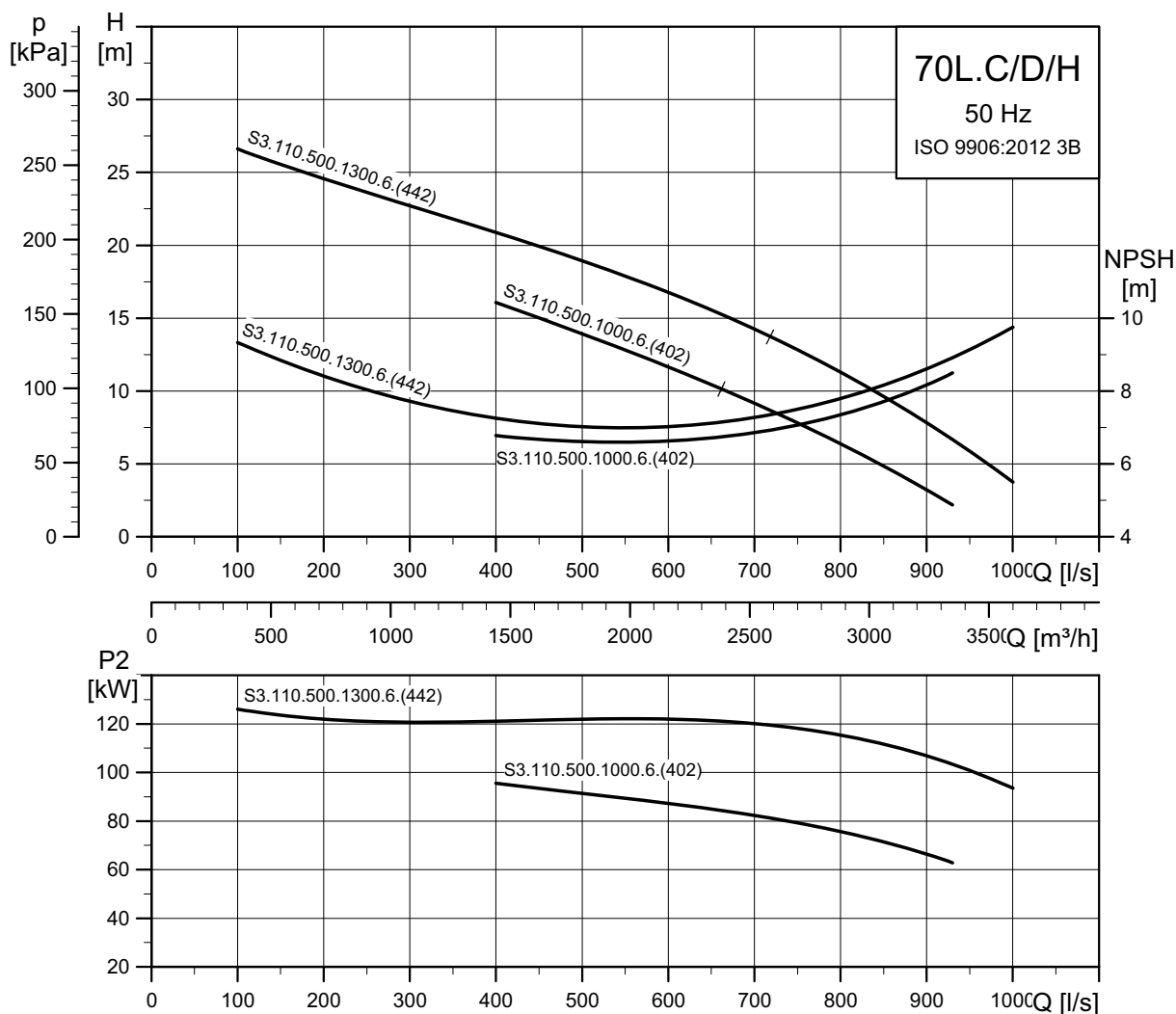
Pump data

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.110.500.1000.6.70L.S/C/D/H.402...	402	110	10	20
S3.110.500.1300.6.70L.S/C/D/H.442...	442			

S3.110.500.1000.6 and S3.110.500.1300.6



TM04 1929 1914



TM04 1930 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N		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		
S3.110.500.1000.6.70L.S.402...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090
S3.110.500.1000.6.70L.C.402...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090
S3.110.500.1000.6.70L.D.402...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090
S3.110.500.1000.6.70L.H.402...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090
S3.110.500.1300.6.70L.S.442...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273
S3.110.500.1300.6.70L.C.442...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273
S3.110.500.1300.6.70L.D.442...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273
S3.110.500.1300.6.70L.H.442...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273

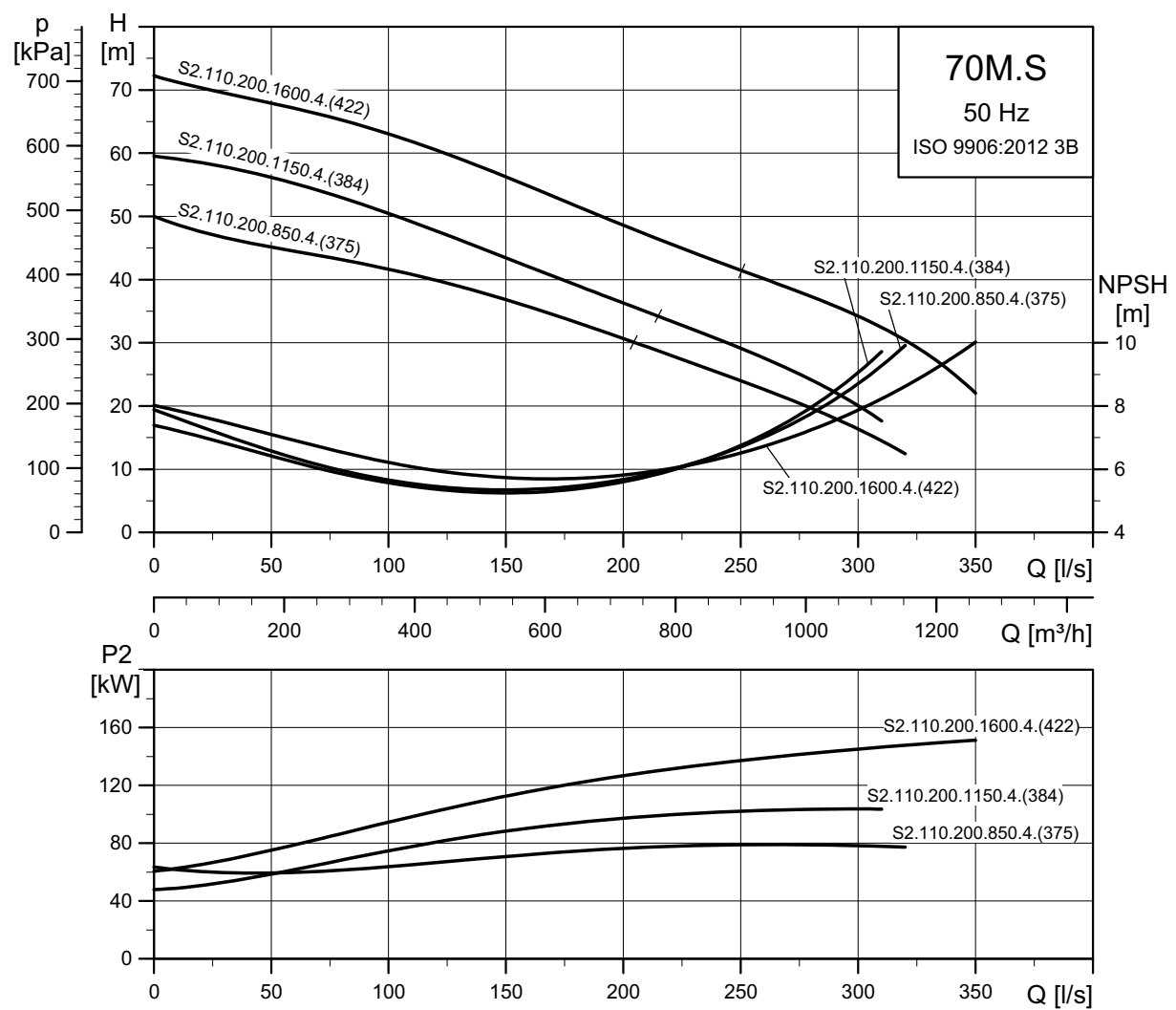
Note: Enclosure class: IP68

Pump data

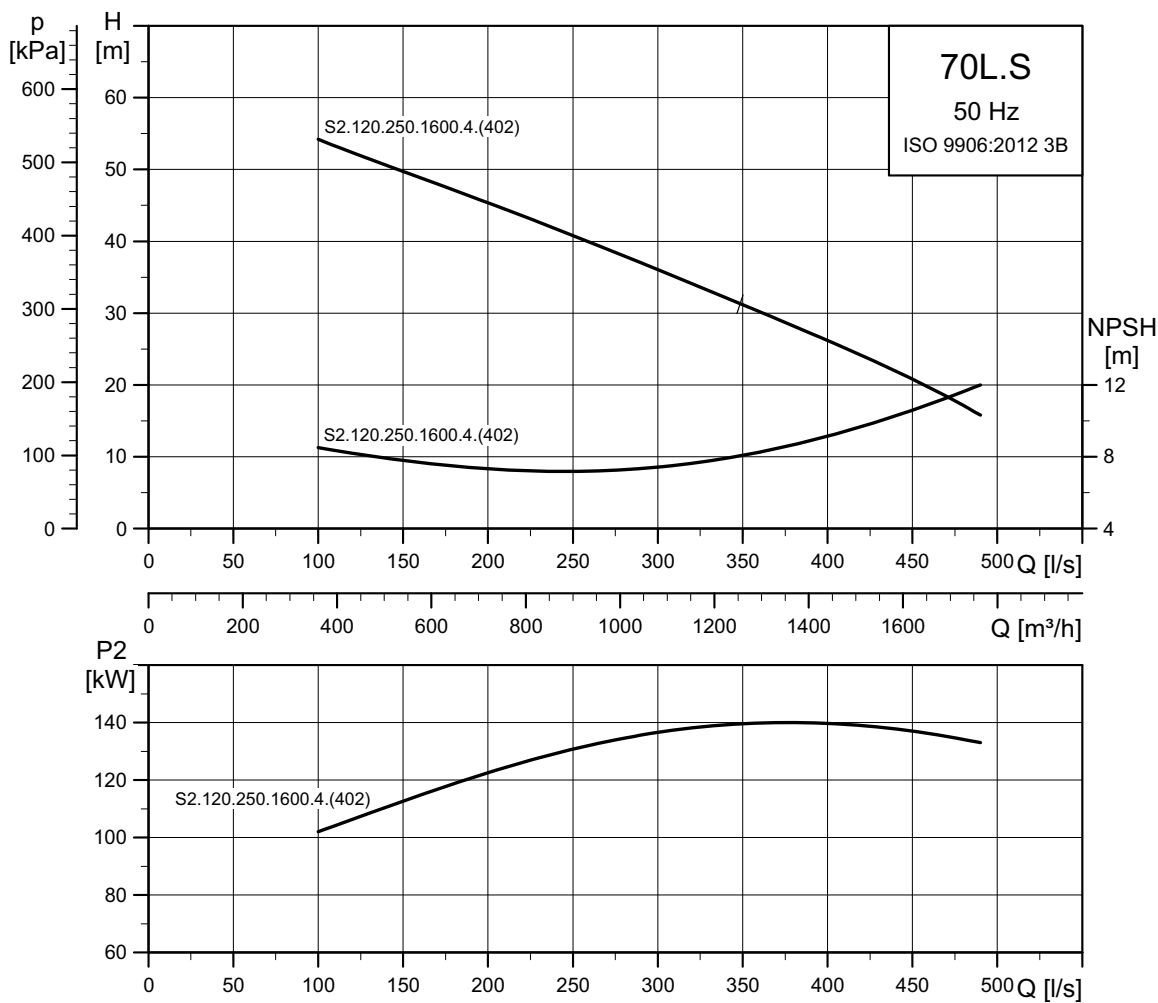
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.110.500.1000.6.70L.S/C/D/H.402...	402	110	10	20
S3.110.500.1300.6.70L.S/C/D/H.442...	442			

Medium pressure - 3 x 400/690 V

S2.110.200.850.4, S2.110.200.1150.4 and S2.110.200.1600.4



TM04 1867 1914



TM04 0689 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1			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		
S2.110.200.850.4.70M.S.375...	90	85	4	1478	Y/D	154/90	1044	94	95	94	0.75	0.83	0.85	0.8500	1647	
S2.110.200.850.4.70M.C.375...	90	85	4	1478	Y/D	154/90	1044	94	95	94	0.75	0.83	0.85	0.8500	1647	
S2.110.200.850.4.70M.H.375...	90	85	4	1478	Y/D	154/90	1044	94	95	94	0.75	0.83	0.85	0.8500	1647	
S2.110.200.850.4.70M.D.375...	90	85	4	1478	Y/D	154/90	1044	94	95	94	0.75	0.83	0.85	0.8500	1647	
S2.110.200.1150.4.70M.S.416...	122	115	4	1475	Y/D	211/122	1430	94	95	94	0.69	0.79	0.84	1.1000	2232	
S2.110.200.1150.4.70M.C.416...	122	115	4	1475	Y/D	211/122	1430	94	95	94	0.69	0.79	0.84	1.1000	2232	
S2.110.200.1150.4.70M.H.416...	122	115	4	1475	Y/D	211/122	1430	94	95	94	0.69	0.79	0.84	1.1000	2232	
S2.110.200.1150.4.70M.D.416...	122	115	4	1475	Y/D	211/122	1430	94	95	94	0.69	0.79	0.84	1.1000	2232	
S2.110.200.1600.4.70M.S.441...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	
S2.110.200.1600.4.70M.C.441...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	
S2.110.200.1600.4.70M.H.441...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	
S2.110.200.1600.4.70M.D.441...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	

¹ Low/high voltage (400/690 V).

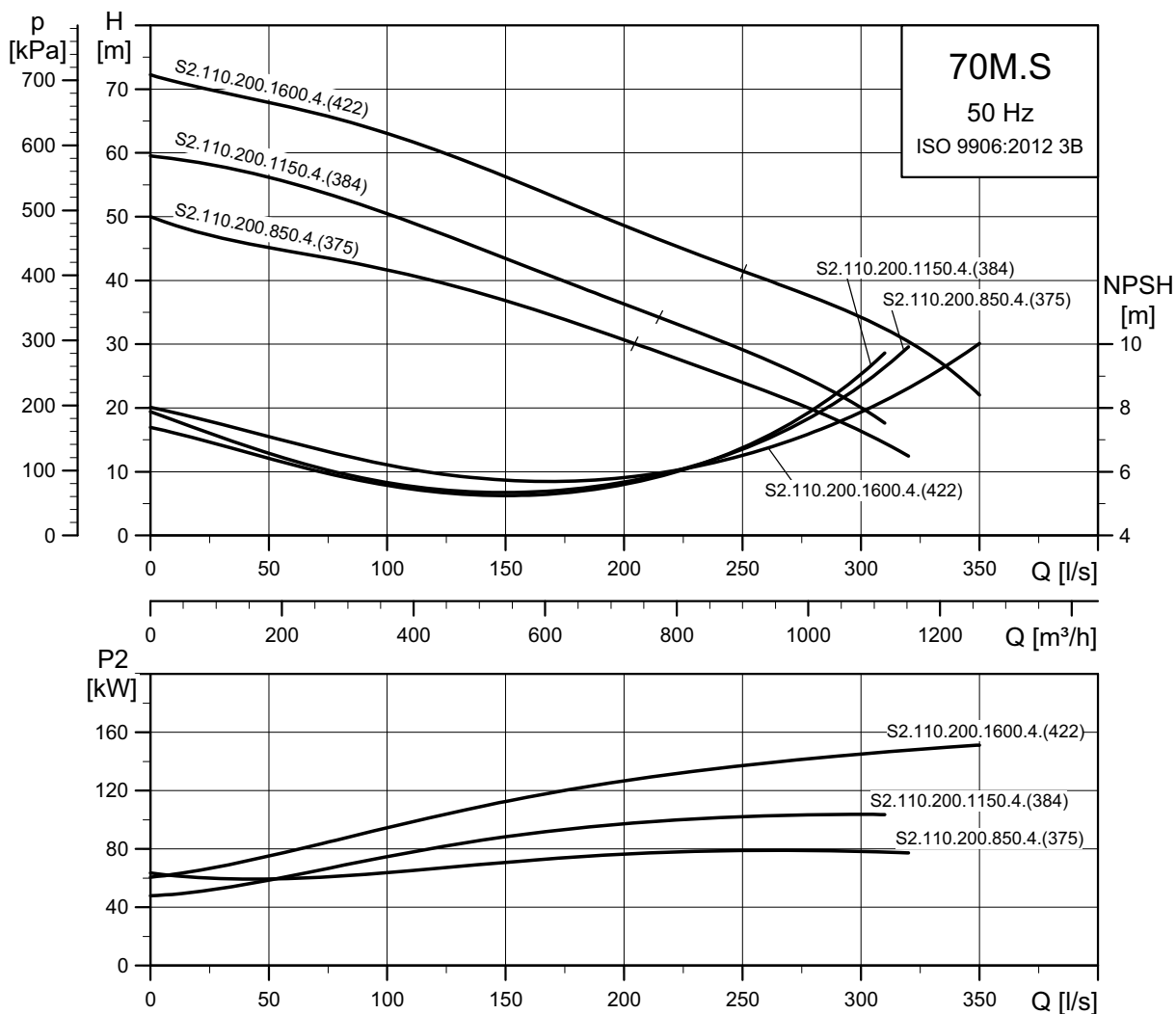
Note: Enclosure class: IP68

Pump data

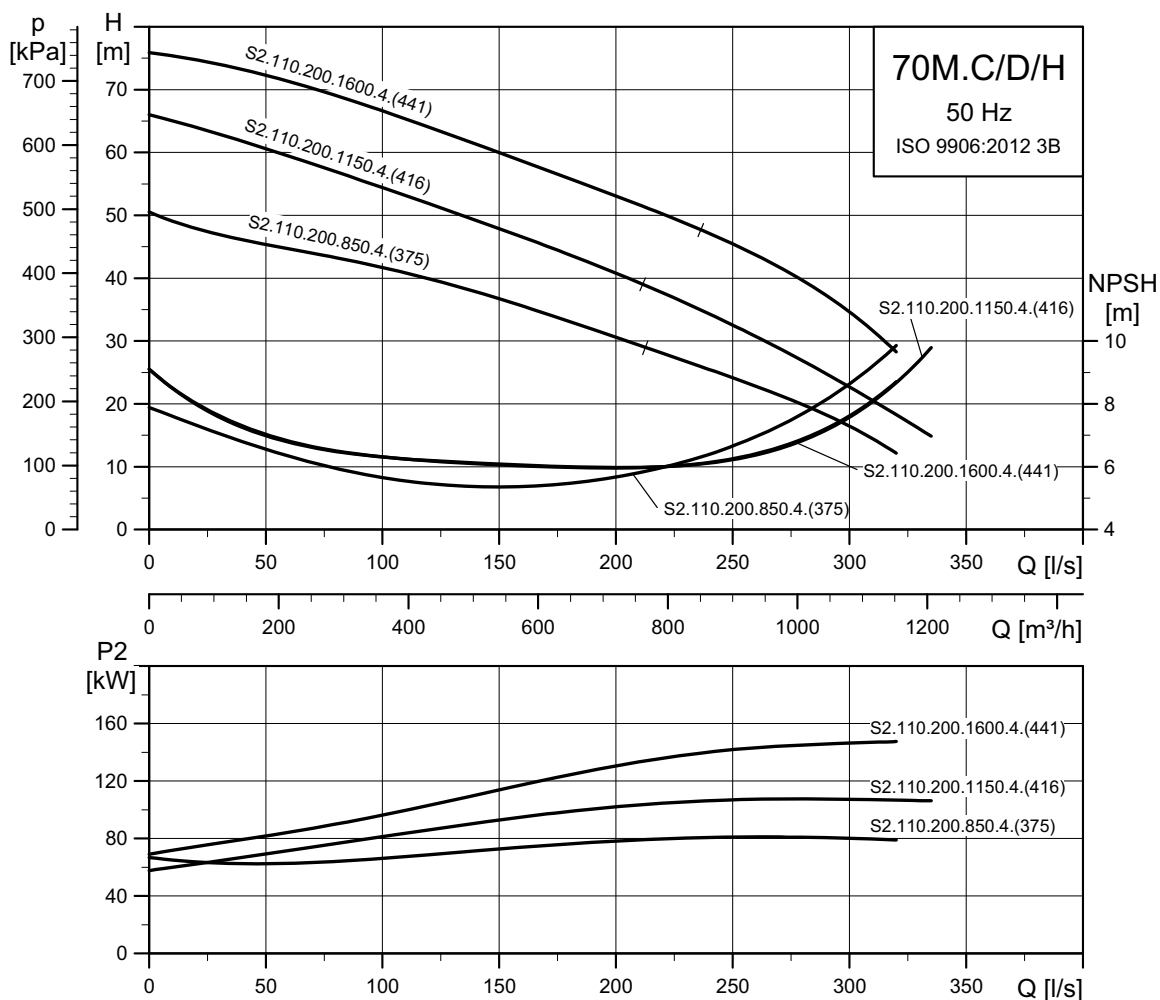
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.110.200.850.4.70M.S/C/D/H.375...	375			
S2.110.200.1150.4.70M.S/C/D/H.416...	416	110	10	20
S2.110.200.1600.4.70M.S/C/D/H.441...	441			

Medium pressure - 3 x 415 V

S2.110.200.850.4, S2.110.200.1150.4 and S2.110.200.1600.4



TM04 1867 1914



TMD4 1868 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_n			I_{start}			η_{motor} [%]			$\cos \phi$			Moment of inertia [kgm ²]	Breakdown torque M_{max} [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
S2.110.200.850.4.70M.S.375...	90	85	4	1478	Y/D	149	1006	94	95	94	0.75	0.83	0.85	0.8500	1647				
S2.110.200.850.4.70M.C.375...	90	85	4	1478	Y/D	149	1006	94	95	94	0.75	0.83	0.85	0.8500	1647				
S2.110.200.850.4.70M.D.375...	90	85	4	1478	Y/D	149	1006	94	95	94	0.75	0.83	0.85	0.8500	1647				
S2.110.200.850.4.70M.H.375...	90	85	4	1478	Y/D	149	1006	94	95	94	0.75	0.83	0.85	0.8500	1647				
S2.110.200.1150.4.70M.S.416...	122	115	4	1475	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232				
S2.110.200.1150.4.70M.C.416...	122	115	4	1475	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232				
S2.110.200.1150.4.70M.D.416...	122	115	4	1475	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232				
S2.110.200.1150.4.70M.H.416...	122	115	4	1475	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232				
S2.110.200.1600.4.70M.S.441...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414				
S2.110.200.1600.4.70M.C.441...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414				
S2.110.200.1600.4.70M.D.441...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414				
S2.110.200.1600.4.70M.H.441...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414				

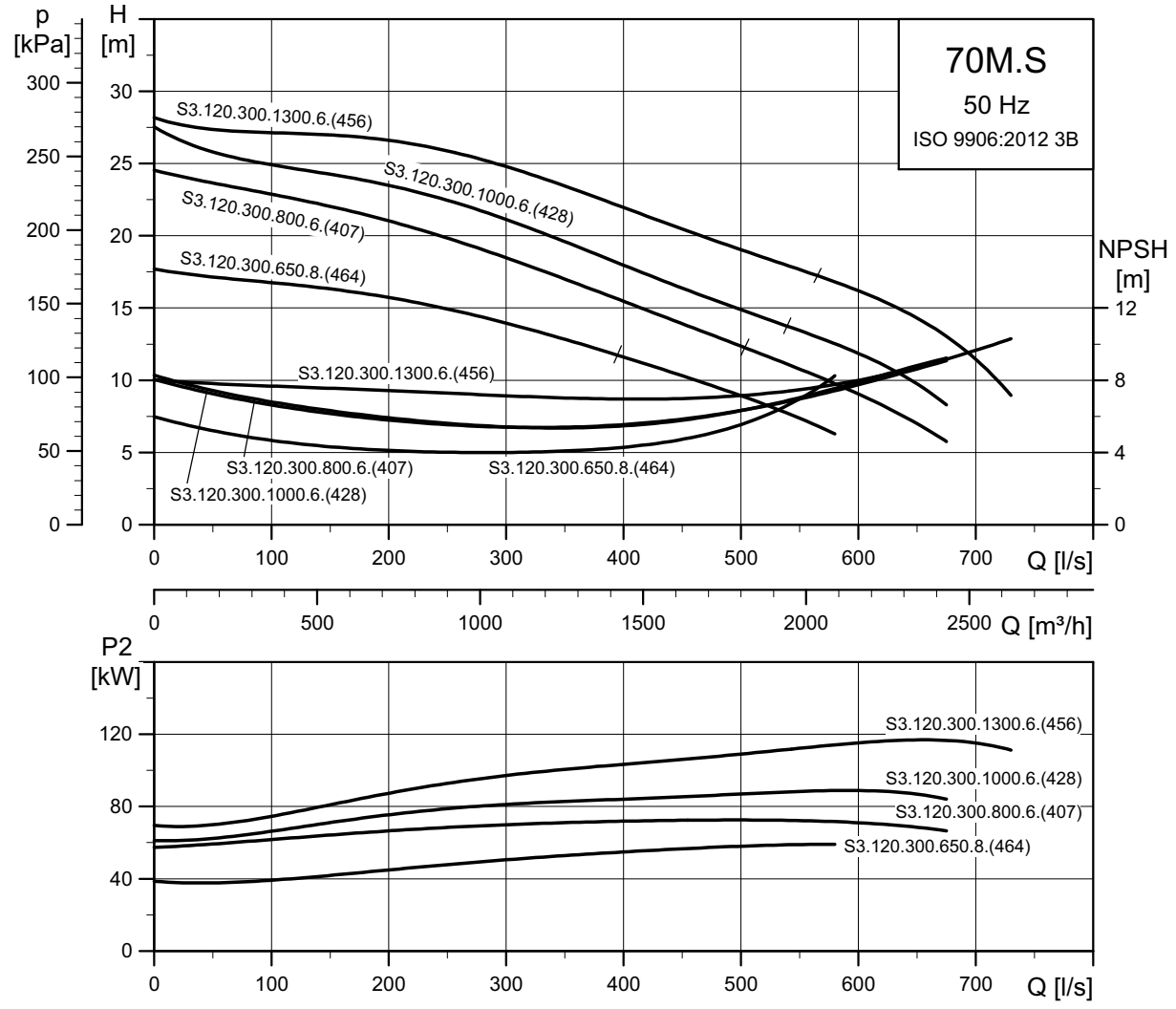
Note: Enclosure class: IP68

Pump data

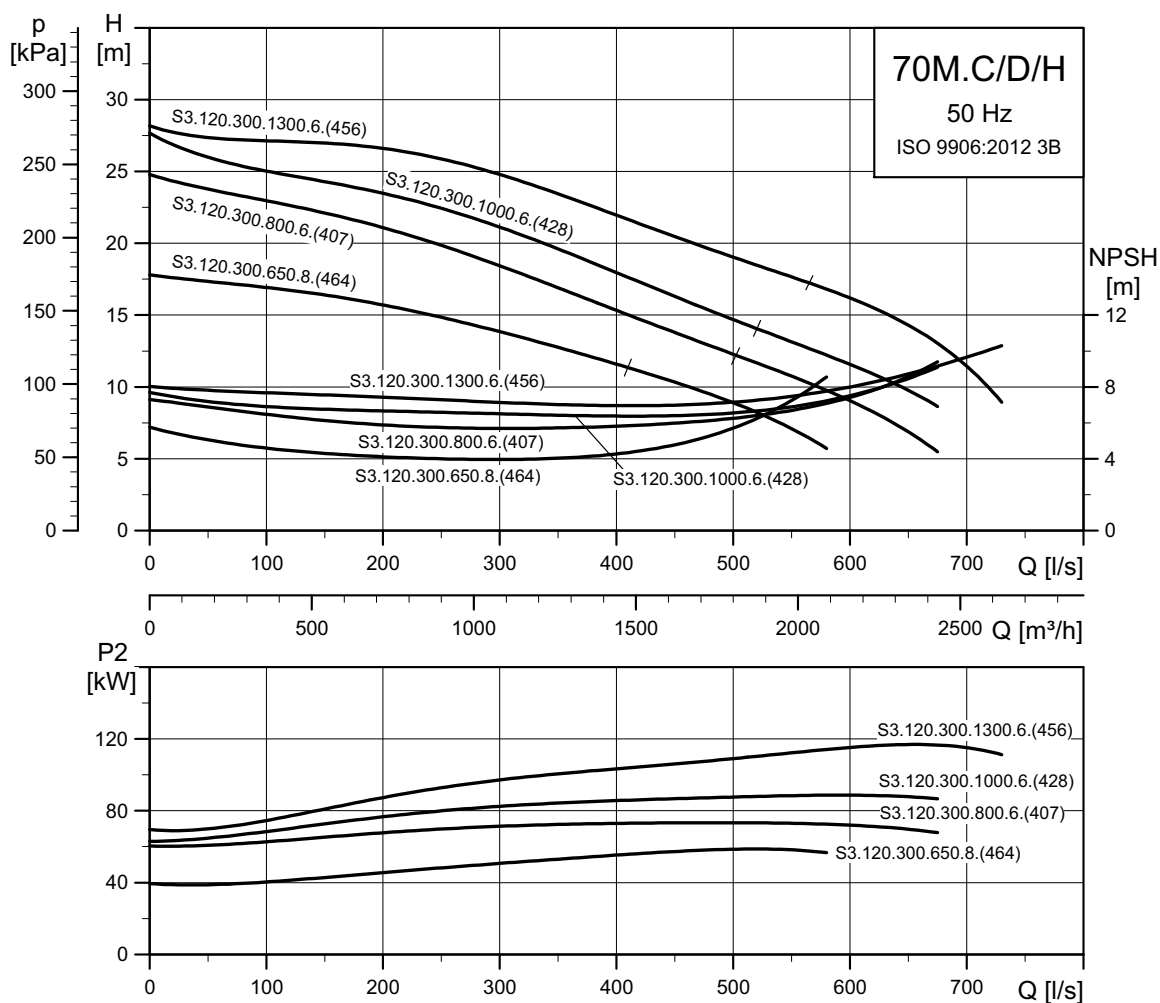
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.110.200.850.4.70M.S/C/D/H.375...	375			
S2.110.200.1150.4.70M.S/C/D/H.416...	416	110	10	20
S2.110.200.1600.4.70M.S/C/D/H.441...	441			

Medium pressure - 3 x 400/690 V

S3.120.300.650.8 and S3.120.300.800.6



TM04 1869 1914



TM04 1870 1914

Electrical data

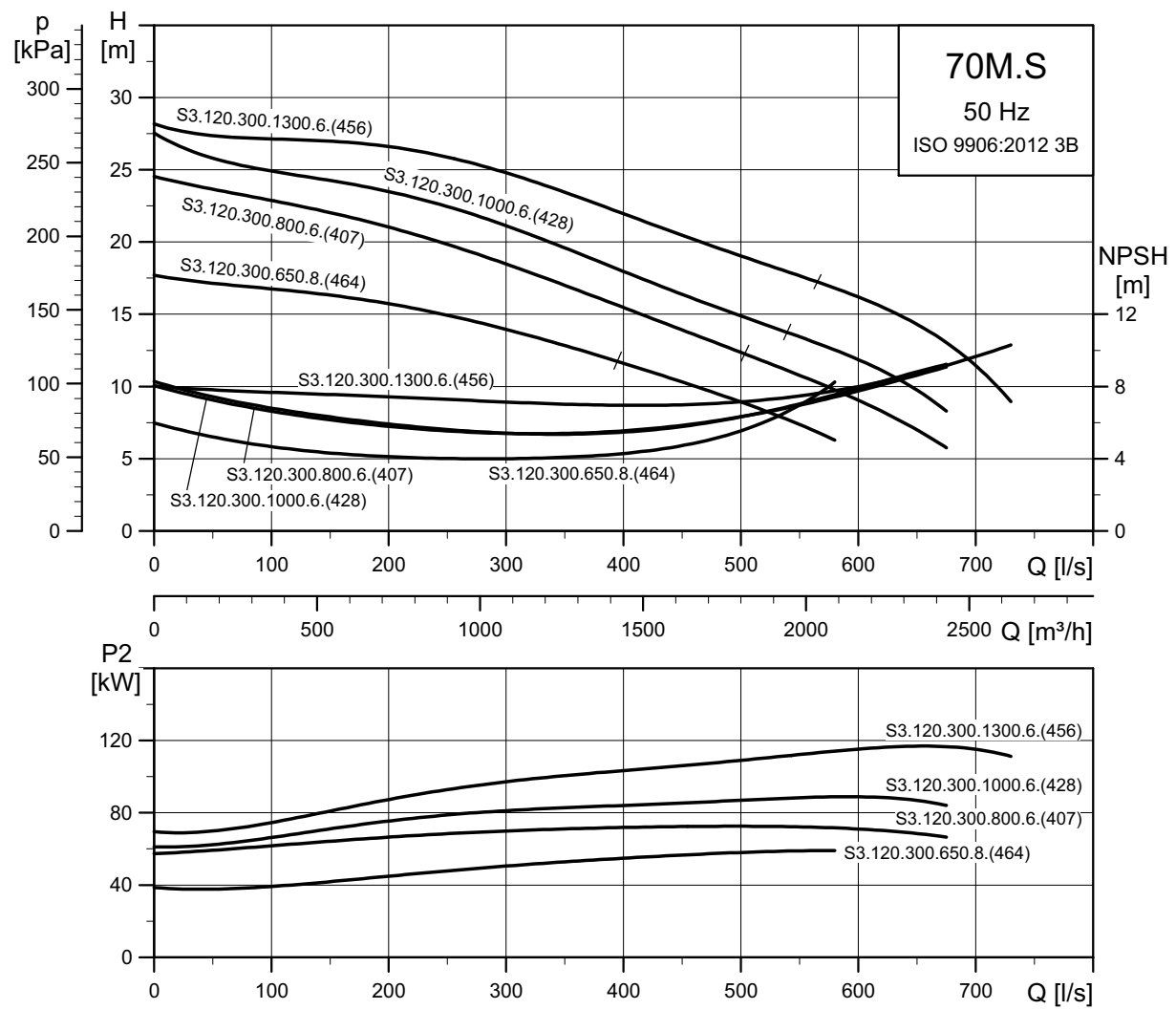
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1		I_{start}			η_{motor} [%]			$\cos \phi$			Moment of inertia [kgm ²]	Breakdown torque M_{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
S3.120.300.650.8.70M.S.464...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135			
S3.120.300.650.8.70M.C.464...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135			
S3.120.300.650.8.70M.D.464...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135			
S3.120.300.650.8.70M.H.464...	70	65	8	732	Y/D	123/72	733	94	94	91	0.70	0.80	0.84	2.1000	2135			
S3.120.300.800.6.70M.S.407...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090			
S3.120.300.800.6.70M.C.407...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090			
S3.120.300.800.6.70M.D.407...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090			
S3.120.300.800.6.70M.H.407...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090			

¹ Low/high voltage (400/690 V).
Note: Enclosure class: IP68

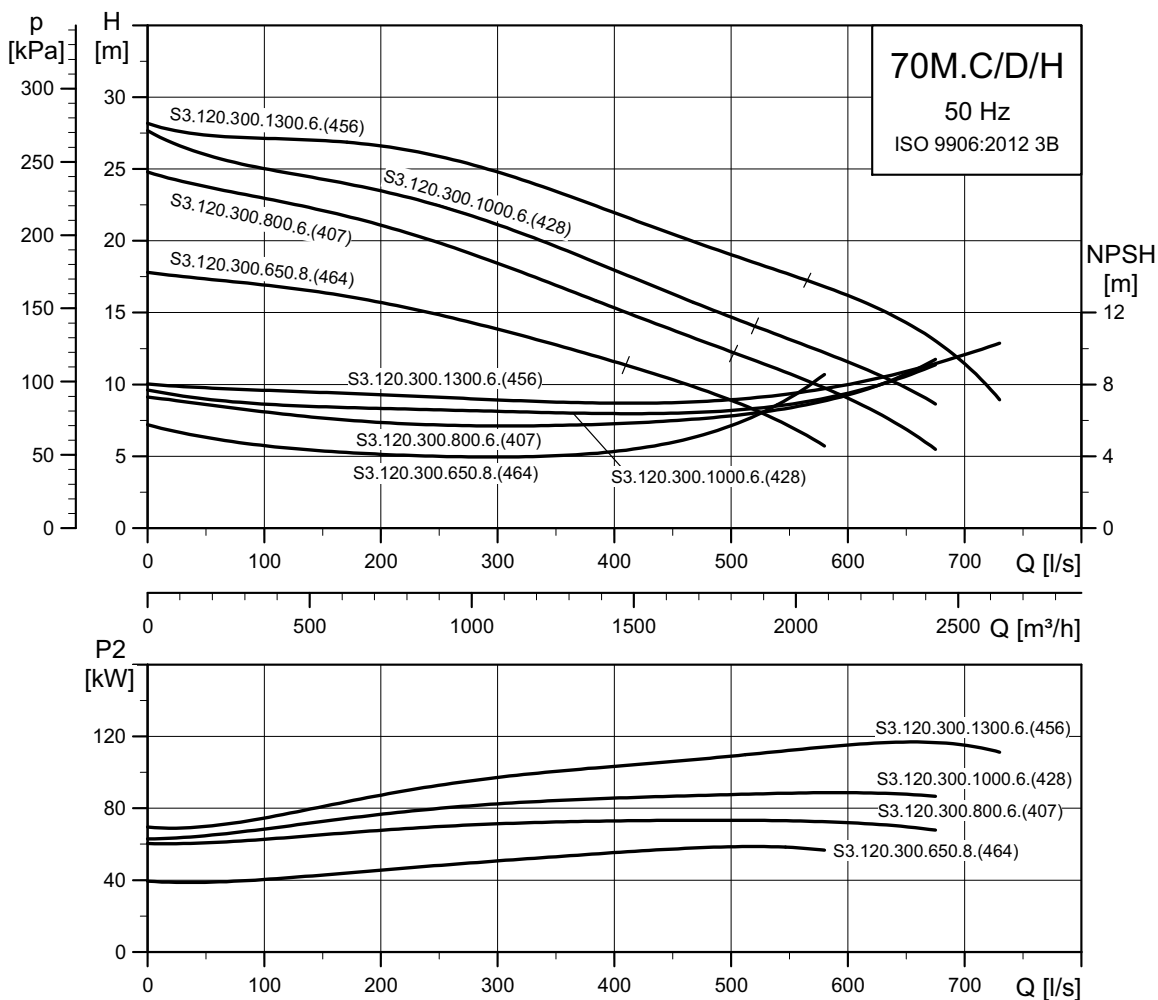
Pump data

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.120.300.650.8.70M.S/C/D/H.464...	464	120	10	20
S3.120.300.800.6.70M.S/C/D/H.407...	407			

Medium pressure - 3 x 415 V
S3.120.300.650.8 and S3.120.300.800.6



TM04 1869 1914



TM04 1870 1914

Electrical data

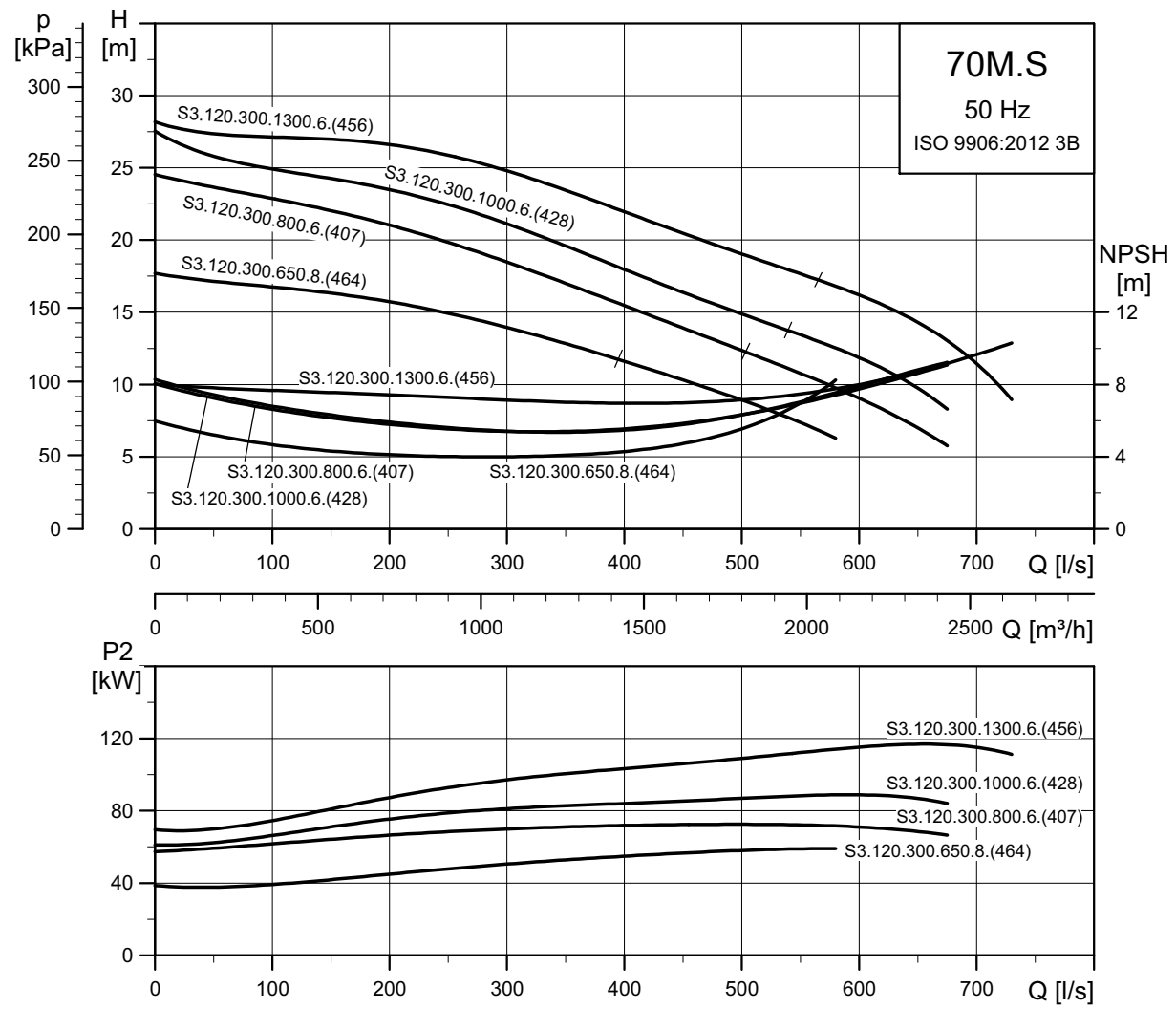
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N		I_{start}			η_{motor} [%]			$\cos \phi$			Moment of inertia [kgm ²]	Breakdown torque M_{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
S3.120.300.650.8.70M.S.464...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135			
S3.120.300.650.8.70M.C.464...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135			
S3.120.300.650.8.70M.D.464...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135			
S3.120.300.650.8.70M.H.464...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135			
S3.120.300.800.6.70M.S.407...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090			
S3.120.300.800.6.70M.C.407...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090			
S3.120.300.800.6.70M.D.407...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090			
S3.120.300.800.6.70M.H.407...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090			

Note: Enclosure class: IP68

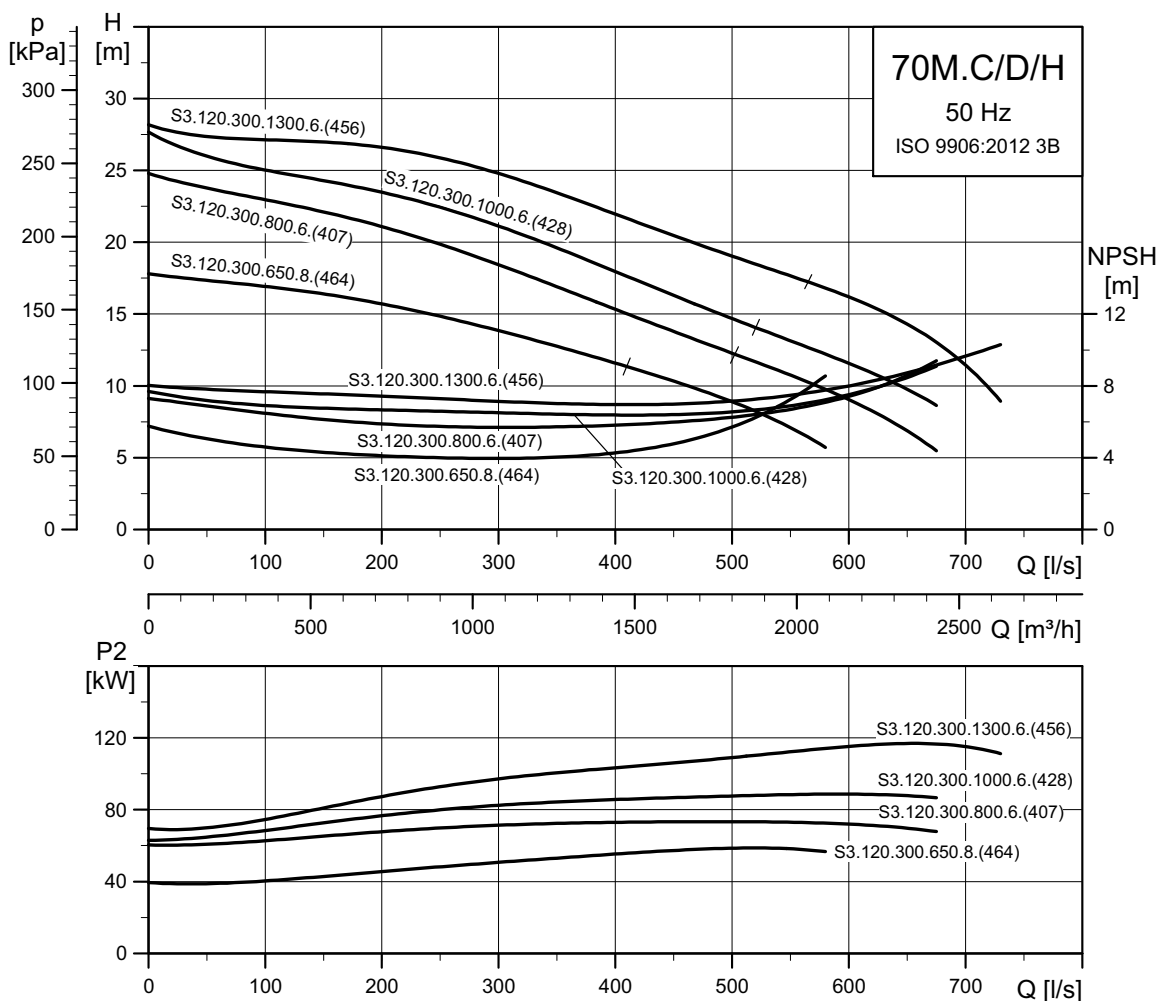
Pump data

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.120.300.650.8.70M.S/C/D/H.464...	464	120	10	20
S3.120.300.800.6.70M.S/C/D/H.407...	407			

Medium pressure - 3 x 400/690 V
S3.120.300.1000.6 and S3.120.300.1300.6



TM04 1869 1914



TM04 1870 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1		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		
S3.120.300.1000.6.70M.S.428...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S3.120.300.1000.6.70M.C.428...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S3.120.300.1000.6.70M.D.428...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S3.120.300.1000.6.70M.H.428...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S3.120.300.1300.6.70M.S.456...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273
S3.120.300.1300.6.70M.C.456...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273
S3.120.300.1300.6.70M.D.456...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273
S3.120.300.1300.6.70M.H.456...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273

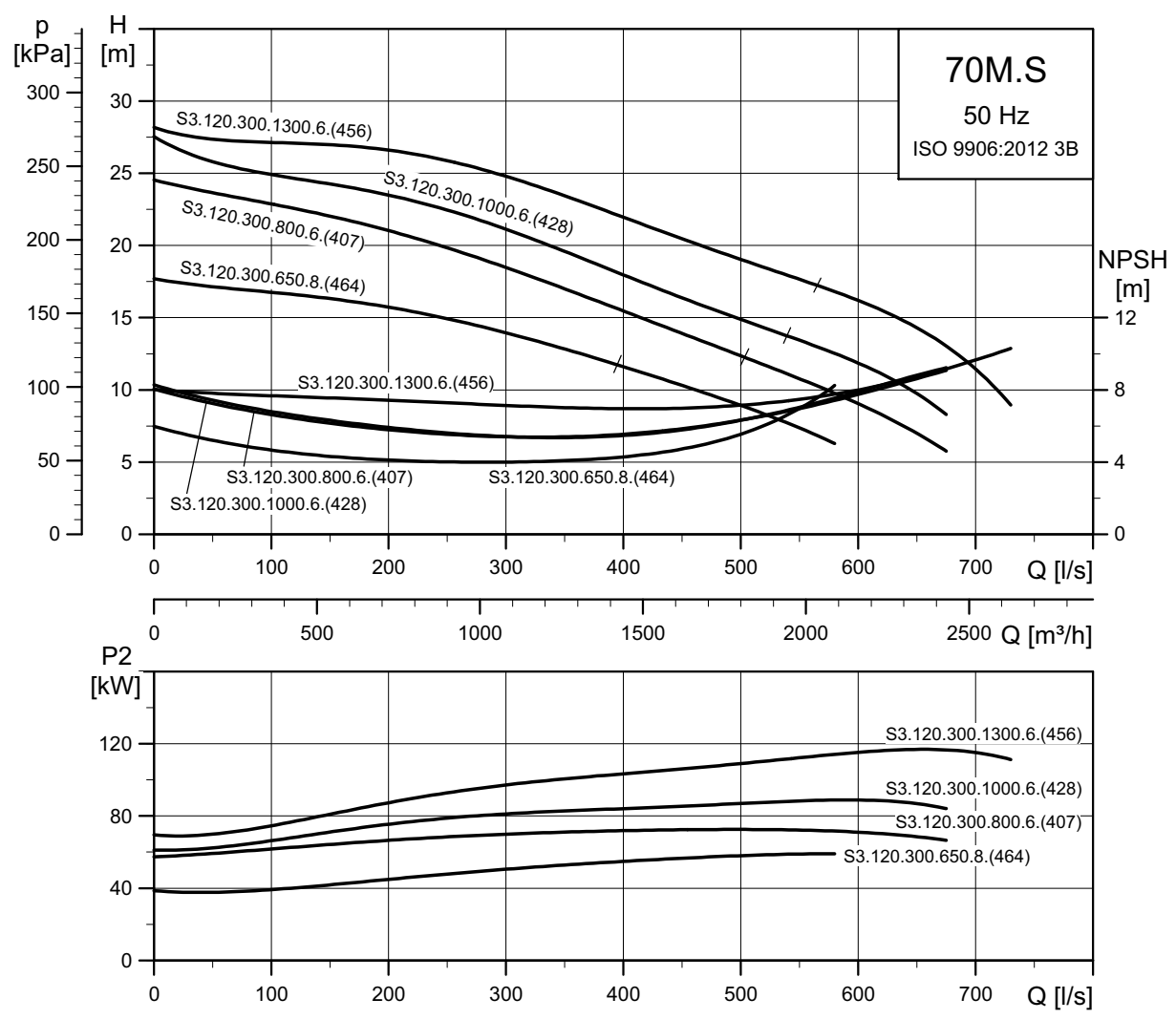
¹ Low/high voltage (400/690 V).

Note: Enclosure class: IP68

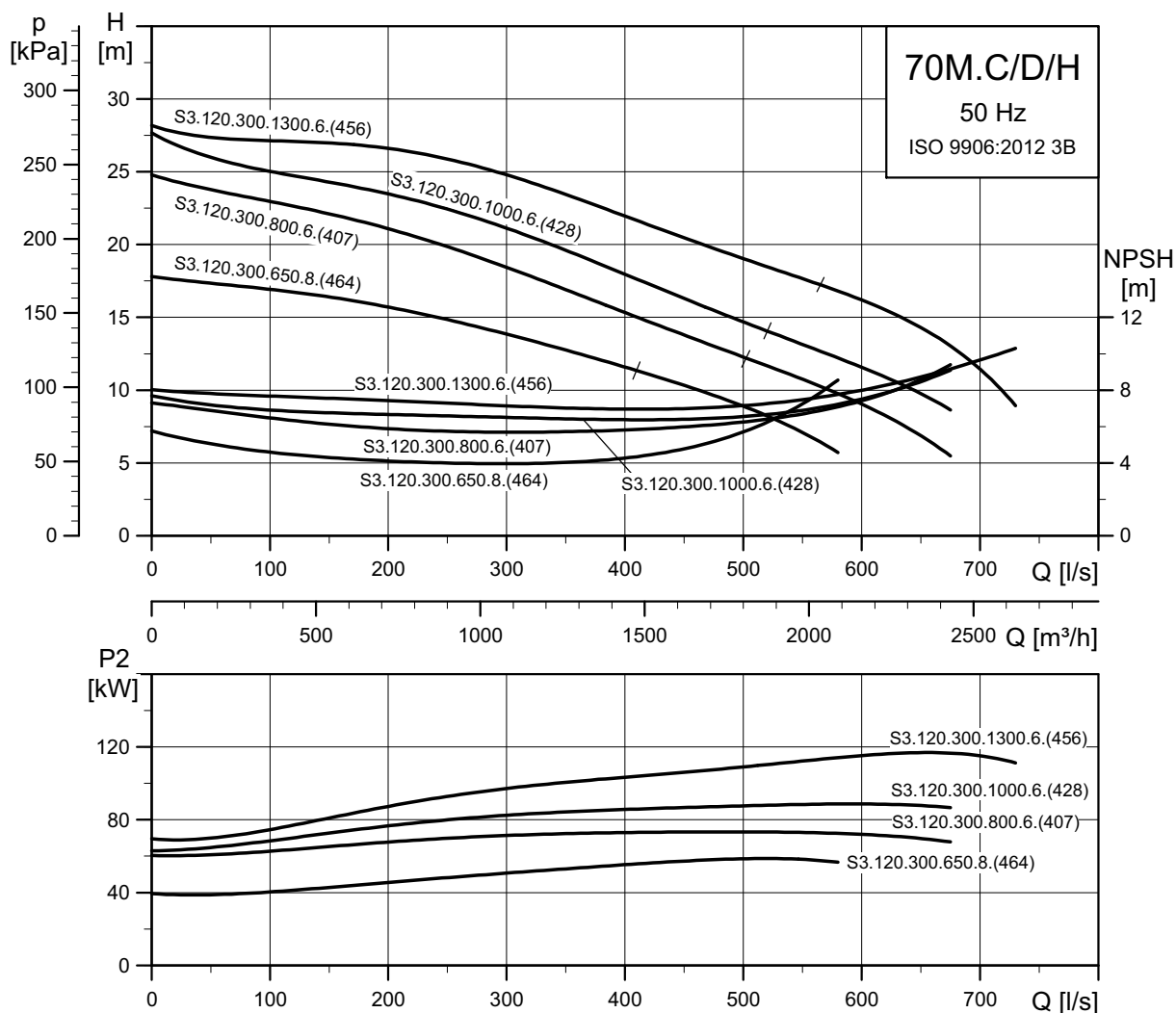
Pump data

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.120.300.1000.6.70M.S/C/D/H.428...	428	120	10	20
S3.120.300.1300.6.70M.S/C/D/H.456...	456			

Medium pressure - 3 x 415 V
S3.120.300.1000.6 and S3.120.300.1300.6



TM04 1869 1914



TM04 1870 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N			I_{start}			$\eta_{motor} [\%]$			$\cos \phi$			Moment of inertia [kgm ²]	Breakdown torque M_{max} [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
S3.120.300.1000.6.70M.S.428...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090				
S3.120.300.1000.6.70M.C.428...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090				
S3.120.300.1000.6.70M.D.428...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090				
S3.120.300.1000.6.70M.H.428...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090				
S3.120.300.1300.6.70M.S.456...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273				
S3.120.300.1300.6.70M.C.456...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273				
S3.120.300.1300.6.70M.D.456...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273				
S3.120.300.1300.6.70M.H.456...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273				

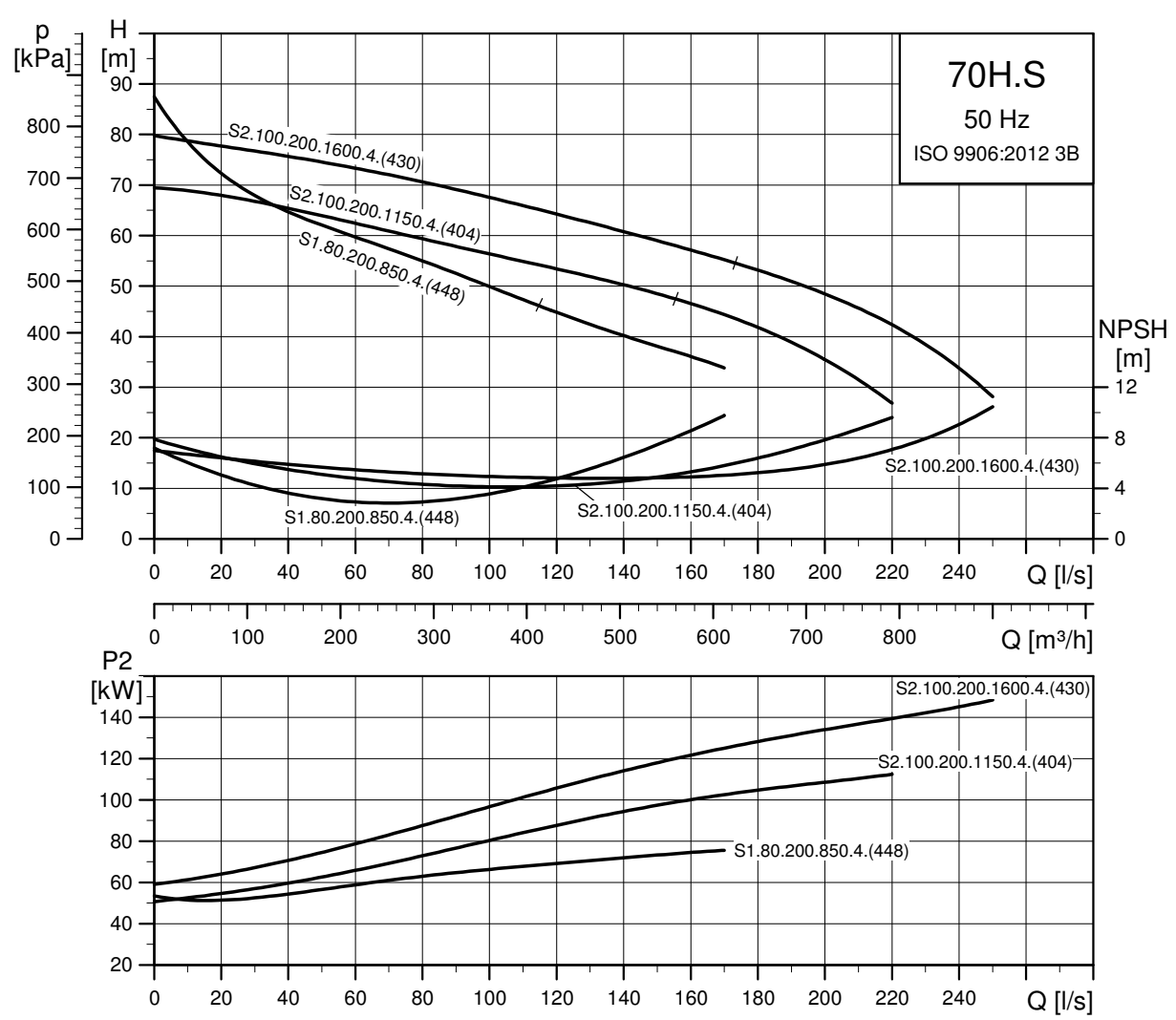
Note: Enclosure class: IP68

Pump data

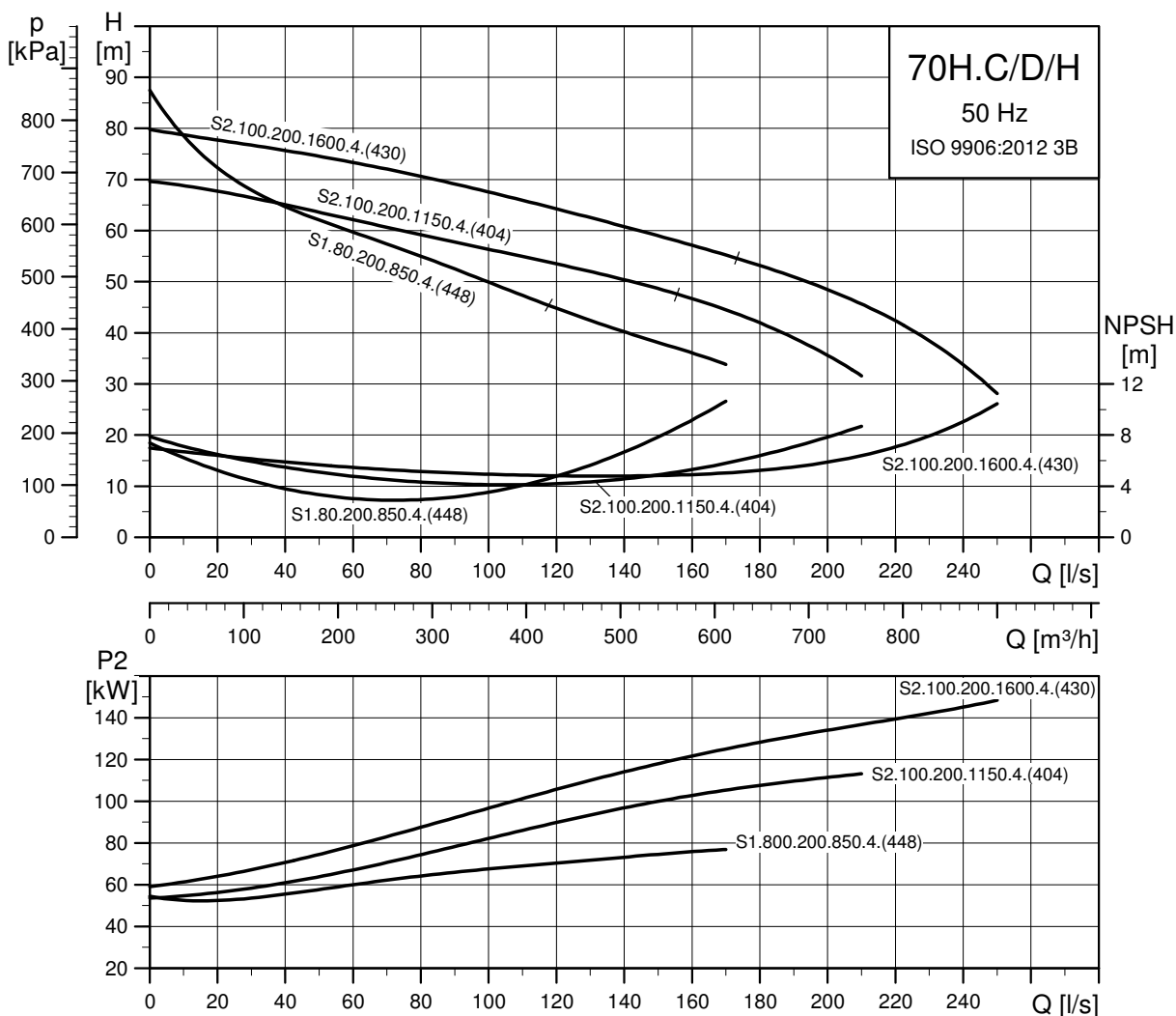
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S3.120.300.1000.6.70M.S/C/D/H.428...	428	120	10	20
S3.120.300.1300.6.70M.S/C/D/H.456...	456			

High pressure - 3 x 400/690 V

S1.80.200.850.4, S2.100.200.1150.4 and S2.100.200.1600.4



TM04 0685 4818



Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1			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		
S1.80.200.850.4.70H.S.432...	90	85	4	1478	Y/D	154/90	1044		94	95	94	0.75	0.83	0.85	0.8500	1647
S1.80.200.850.4.70H.C.432...	90	85	4	1478	Y/D	154/90	1044		94	95	94	0.75	0.83	0.85	0.8500	1647
S1.80.200.850.4.70H.D.432...	90	85	4	1478	Y/D	154/90	1044		94	95	94	0.75	0.83	0.85	0.8500	1647
S1.80.200.850.4.70H.H.432...	90	85	4	1478	Y/D	154/90	1044		94	95	94	0.75	0.83	0.85	0.8500	1647
S2.100.200.1150.4.70H.S.404...	122	115	4	1475	Y/D	211/122	1430		94	95	94	0.69	0.79	0.84	1.1000	2232
S2.100.200.1150.4.70H.C.404...	122	115	4	1475	Y/D	211/122	1430		94	95	94	0.69	0.79	0.84	1.1000	2232
S2.100.200.1150.4.70H.D.404...	122	115	4	1475	Y/D	211/122	1430		94	95	94	0.69	0.79	0.84	1.1000	2232
S2.100.200.1150.4.70H.H.404...	122	115	4	1475	Y/D	211/122	1430		94	95	94	0.69	0.79	0.84	1.1000	2232
S2.100.200.1600.4.70H.S.430...	167	155	4	1475	Y/D	280/163	2098		94	94	93	0.72	0.82	0.86	1.5000	3414
S2.100.200.1600.4.70H.C.430...	167	155	4	1475	Y/D	280/163	2098		94	94	93	0.72	0.82	0.86	1.5000	3414
S2.100.200.1600.4.70H.D.430...	167	155	4	1475	Y/D	280/163	2098		94	94	93	0.72	0.82	0.86	1.5000	3414
S2.100.200.1600.4.70H.H.430...	167	155	4	1475	Y/D	280/163	2098		94	94	93	0.72	0.82	0.86	1.5000	3414

¹ Low/high voltage (400/690 V).

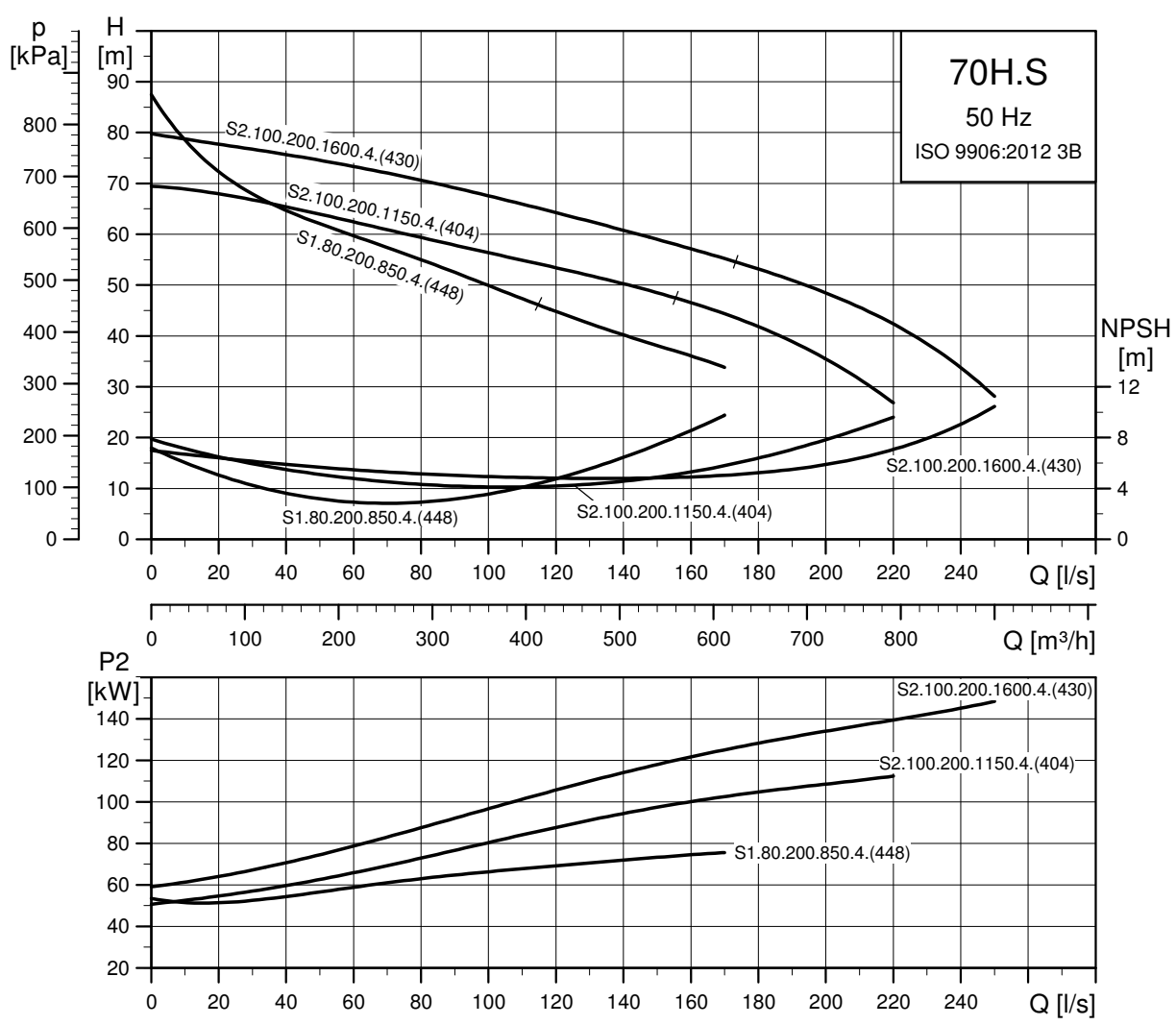
Note: Enclosure class: IP68

Pump data

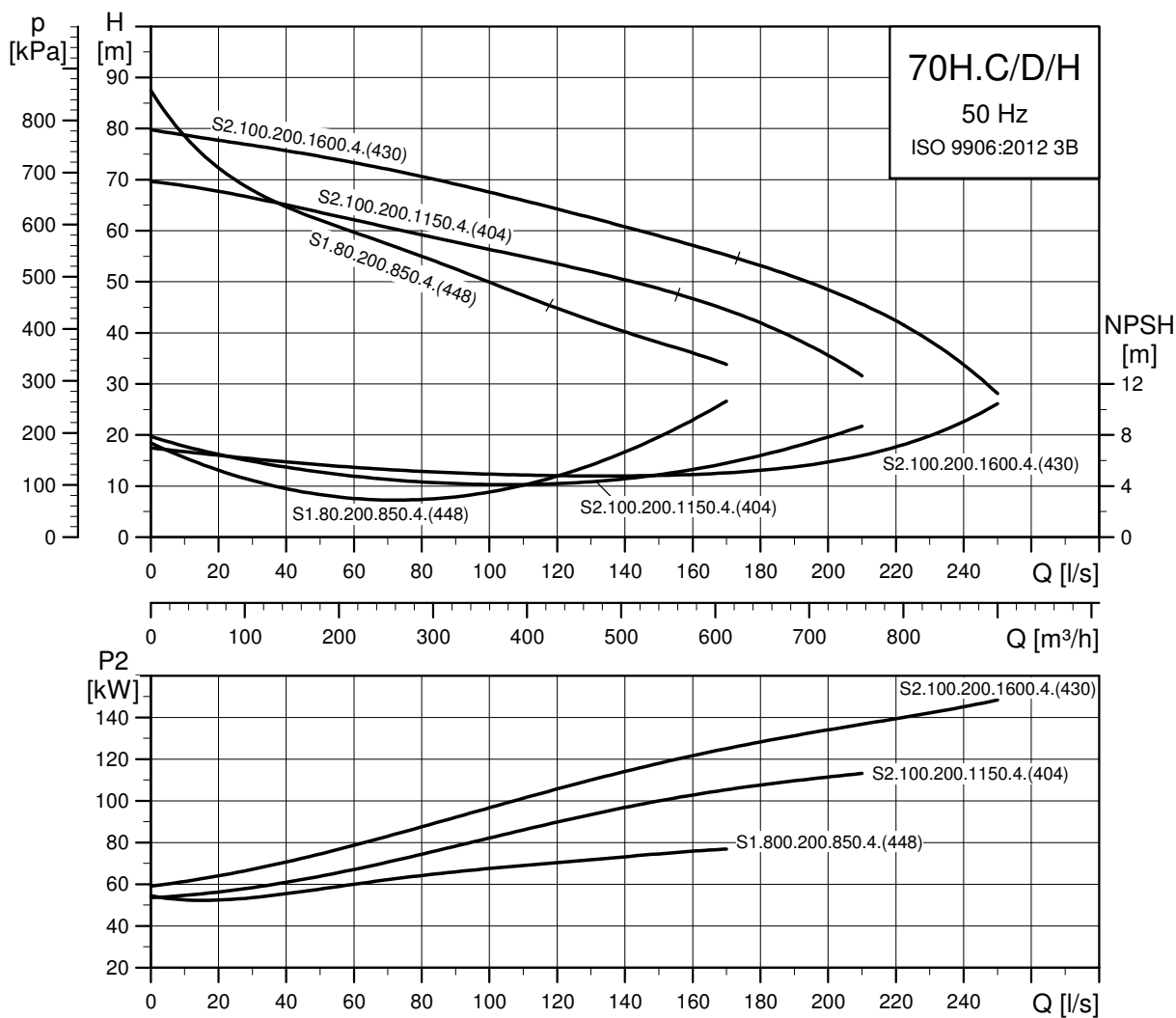
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S1.100.200.850.4.70H.S/C/D/H.432...	432			
S2.100.200.1150.4.70H.S/C/D/H.404...	404	100	10	20
S2.100.200.1600.4.70H.S/C/D/H.430...	430			

High pressure - 3 x 415 V

S1.80.200.850.4, S2.100.200.1150.4 and S2.100.200.1600.4



TM04 0685 4818



TM04 0686 4218

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N		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		
S1.80.200.850.4.70H.S.448...	90	85	4	1478	Y/D	149	1006	94	95	94	0.75	0.83	0.85	0.8500	1647
S1.80.200.850.4.70H.C.448...	90	85	4	1478	Y/D	149	1006	94	95	94	0.75	0.83	0.85	0.8500	1647
S1.80.200.850.4.70H.D.448...	90	85	4	1478	Y/D	149	1006	94	95	94	0.75	0.83	0.85	0.8500	1647
S1.80.200.850.4.70H.H.448...	90	85	4	1478	Y/D	149	1006	94	95	94	0.75	0.83	0.85	0.8500	1647
S2.100.200.1150.4.70H.S.404...	122	115	4	1475	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232
S2.100.200.1150.4.70H.C.404...	122	115	4	1475	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232
S2.100.200.1150.4.70H.D.404...	122	115	4	1475	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232
S2.100.200.1150.4.70H.H.404...	122	115	4	1475	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232
S2.100.200.1600.4.70H.S.430...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414
S2.100.200.1600.4.70H.C.430...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414
S2.100.200.1600.4.70H.D.430...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414
S2.100.200.1600.4.70H.H.430...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414

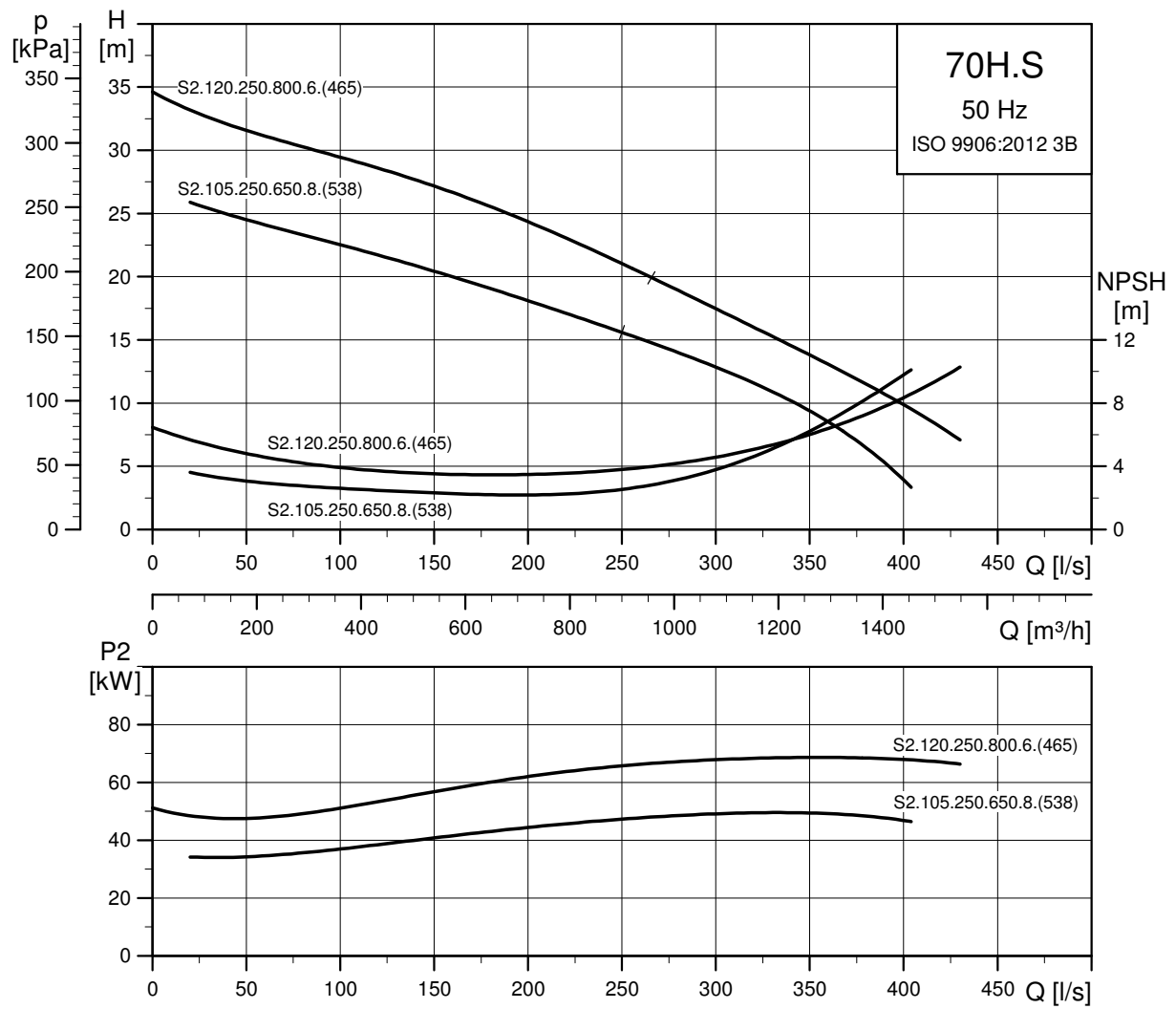
Note: Enclosure class: IP68

Pump data

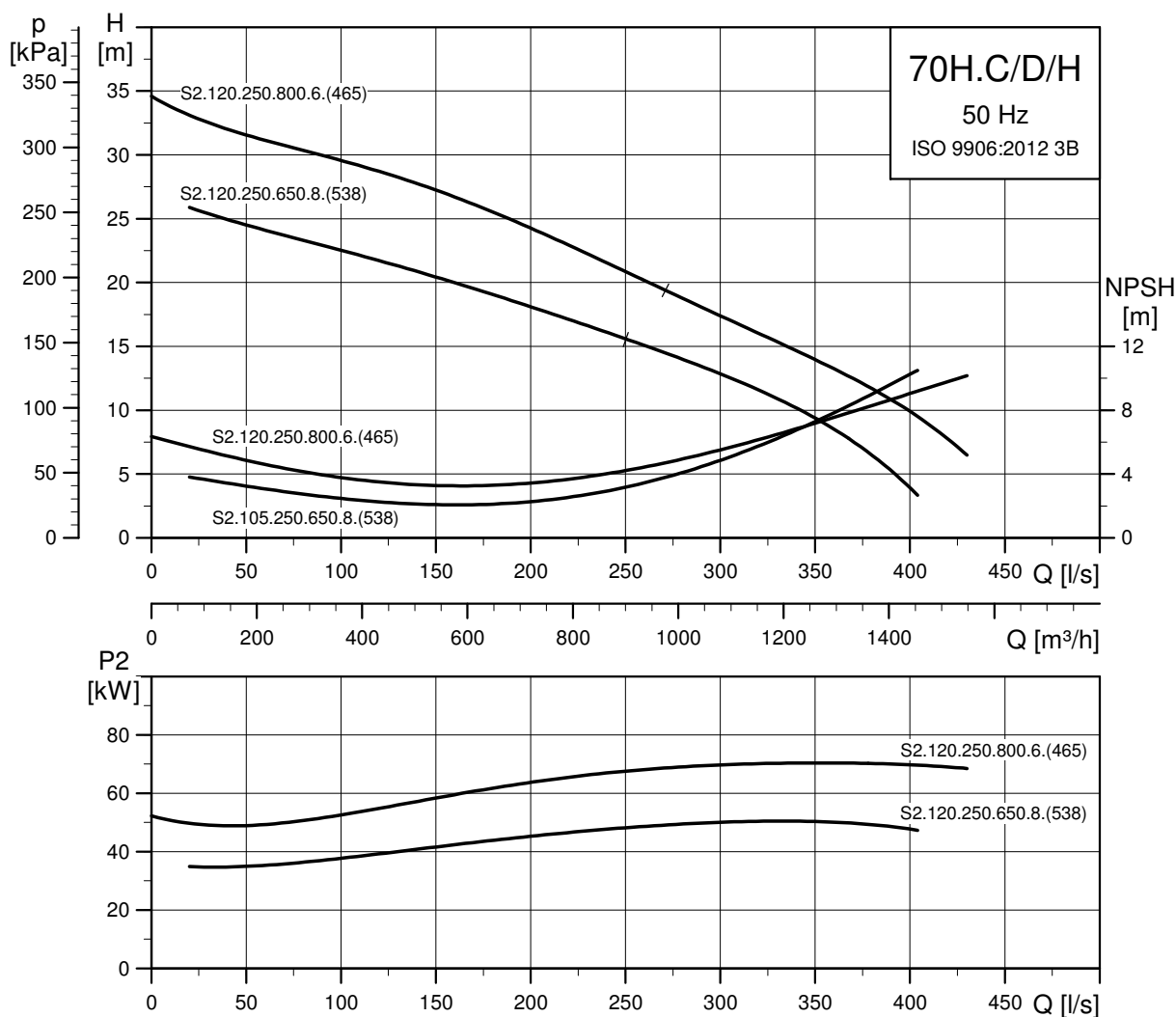
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S1.80.200.850.4.70H.S/C/D/H.448...	448	80		
S2.100.200.1150.4.70H.S/C/D/H.404...	404		10	20
S2.100.200.1600.4.70H.S/C/D/H.430...	430			

High pressure - 3 x 400/690 V

S2.120.250.650.8 and S2.120.250.800.6



TM04 1932 4818



TM04 1934 4818

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1			η_{motor} [%]			$\cos \phi$			Moment of inertia [kgm ²]	Breakdown torque M_{max} [Nm]
						[A]	[A]		1/2	3/4	1/1	1/2	3/4	1/1		
S2.105.250.650.8.70H.S.538...	70	65	8	732	Y/D	123/72	733	94	94	91	0.71	0.79	0.84	2.1000	2135	
S2.105.250.650.8.70H.C.538...	70	65	8	732	Y/D	123/72	733	94	94	91	0.71	0.79	0.84	2.1000	2135	
S2.105.250.650.8.70H.D.538...	70	65	8	732	Y/D	123/72	733	94	94	91	0.71	0.79	0.84	2.1000	2135	
S2.105.250.650.8.70H.H.538...	70	65	8	732	Y/D	123/72	733	94	94	91	0.71	0.79	0.84	2.1000	2135	
S2.120.250.800.6.70H.S.465...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090	
S2.120.250.800.6.70H.C.465...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090	
S2.120.250.800.6.70H.D.465...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090	
S2.120.250.800.6.70H.H.465...	87	80	6	988	Y/D	168/98	1249	91	92	92	0.61	0.68	0.75	2.1000	2090	

¹ Low/high voltage (400/690 V).

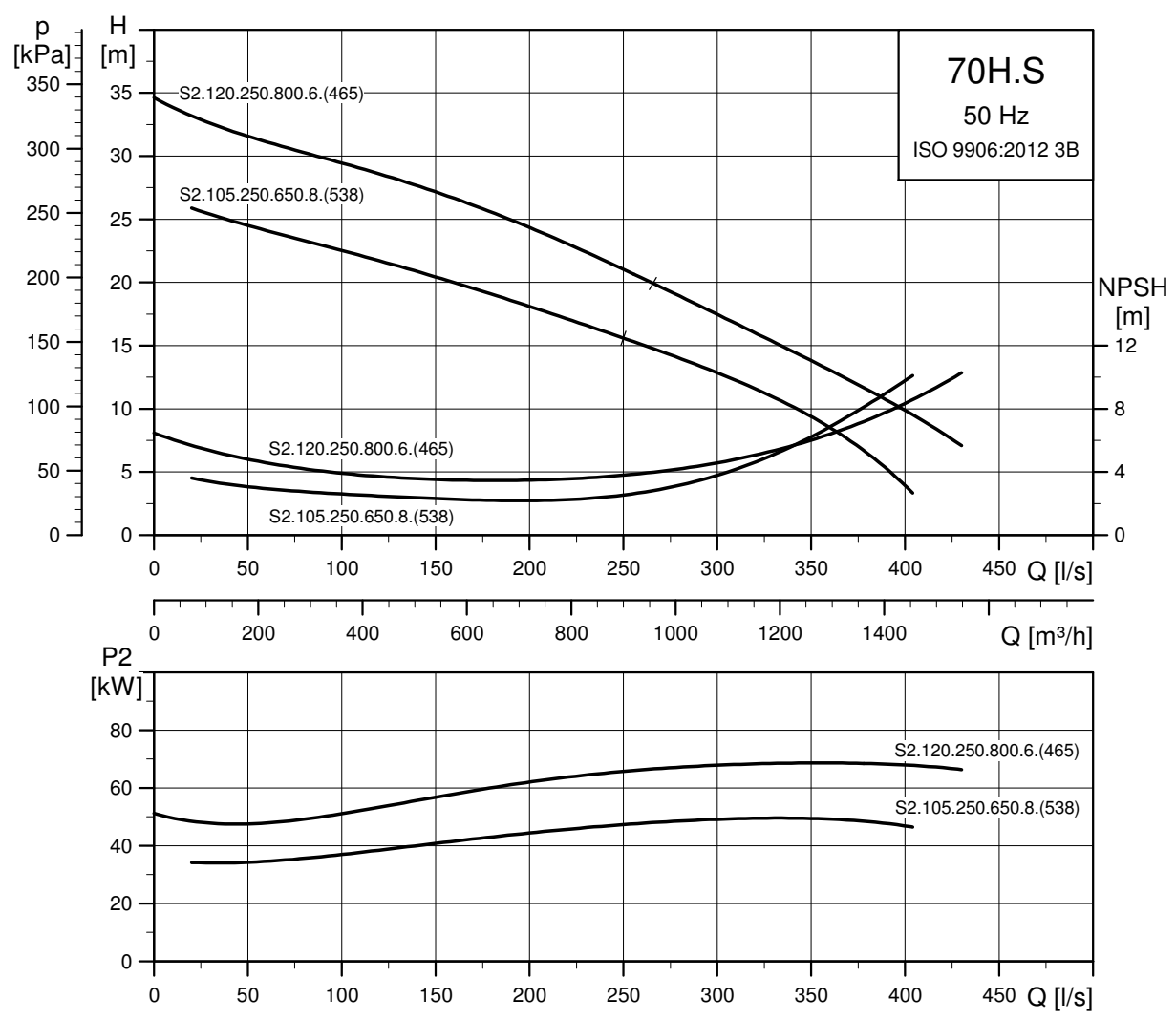
Note: Enclosure class: IP68

Pump data

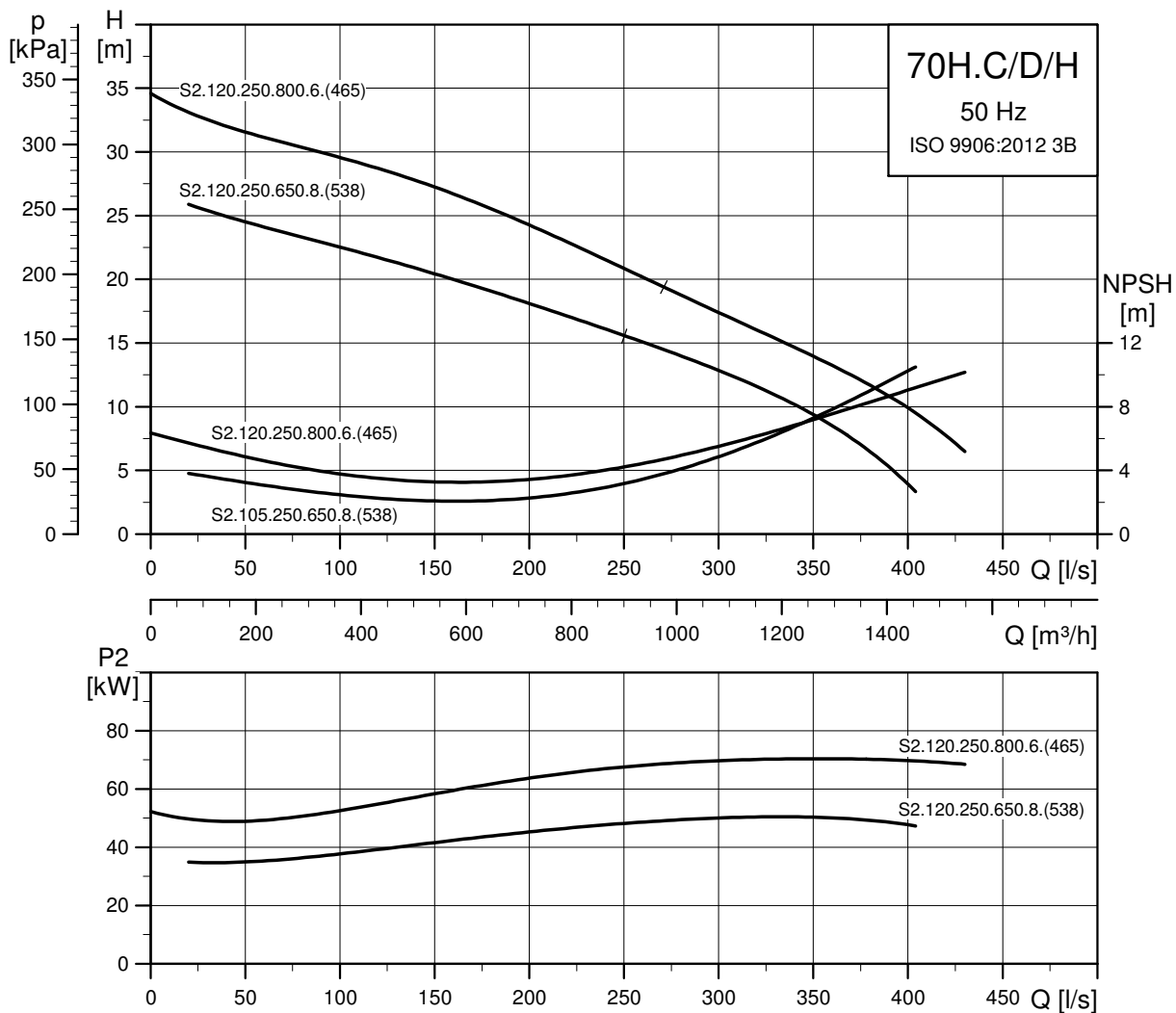
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.105.250.650.8.70H.S/C/D/H.538...	538	105	10	20
S2.120.250.800.6.70H.S/C/D/H.465...	465	120		

High pressure - 3 x 415 V

S2.105.250.650.8 and S2.120.250.800.6



TM04 1932 4818



TM04 1934 4818

Electrical data

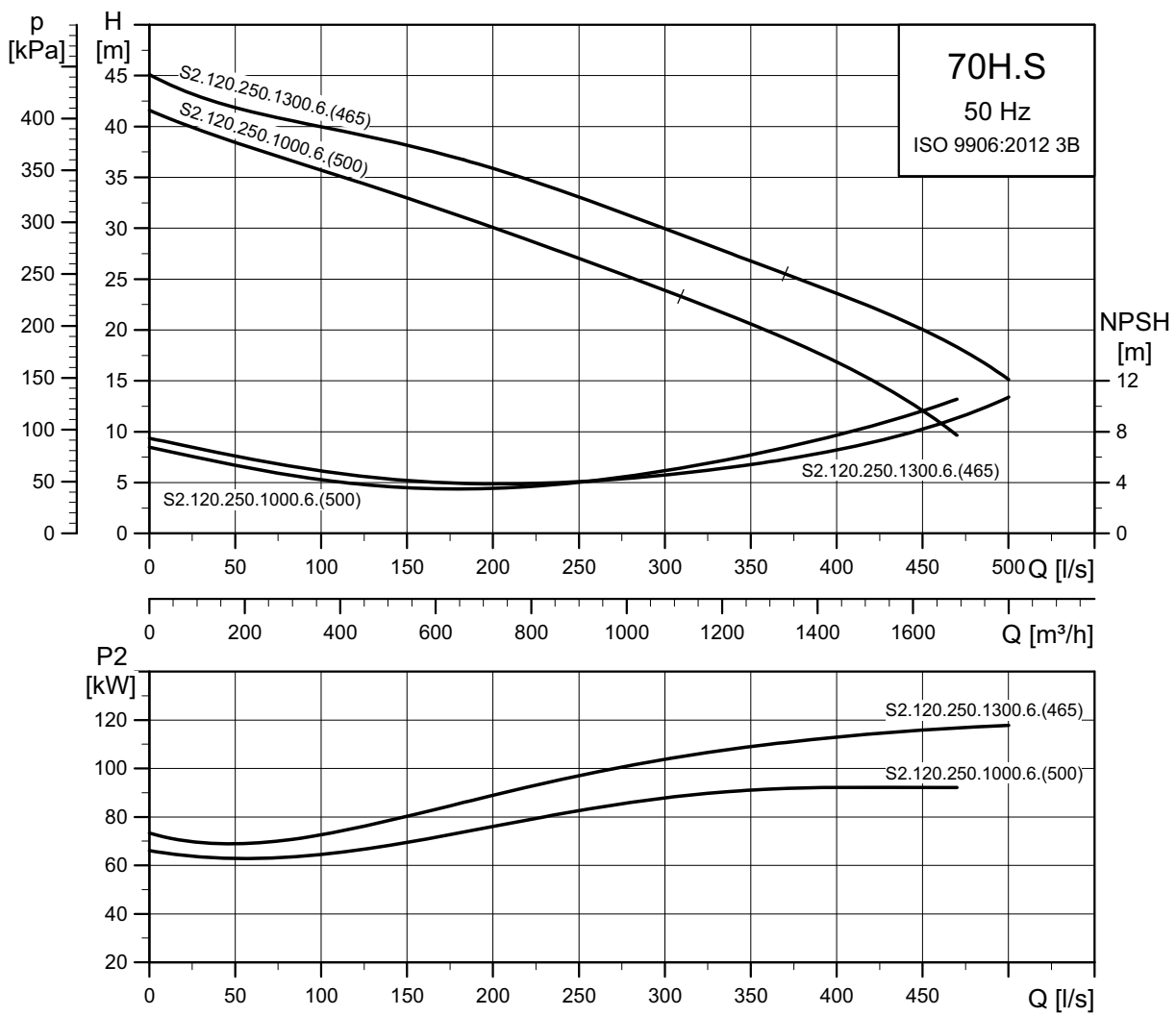
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N			η_{motor} [%]			Cos ϕ			Moment of inertia [kgm ²]	Breakdown torque M_{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1			
S2.105.250.650.8.70H.S.538...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135	
S2.105.250.650.8.70H.C.538...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135	
S2.105.250.650.8.70H.D.538...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135	
S2.105.250.650.8.70H.H.538...	70	65	8	732	Y/D	116	706	94	94	93	0.70	0.80	0.84	2.1000	2135	
S2.120.250.800.6.70H.S.465...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090	
S2.120.250.800.6.70H.C.465...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090	
S2.120.250.800.6.70H.D.465...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090	
S2.120.250.800.6.70H.H.465...	87	80	6	988	Y/D	149	1203	91	92	92	0.64	0.75	0.81	2.1000	2090	

Note: Enclosure class: IP68

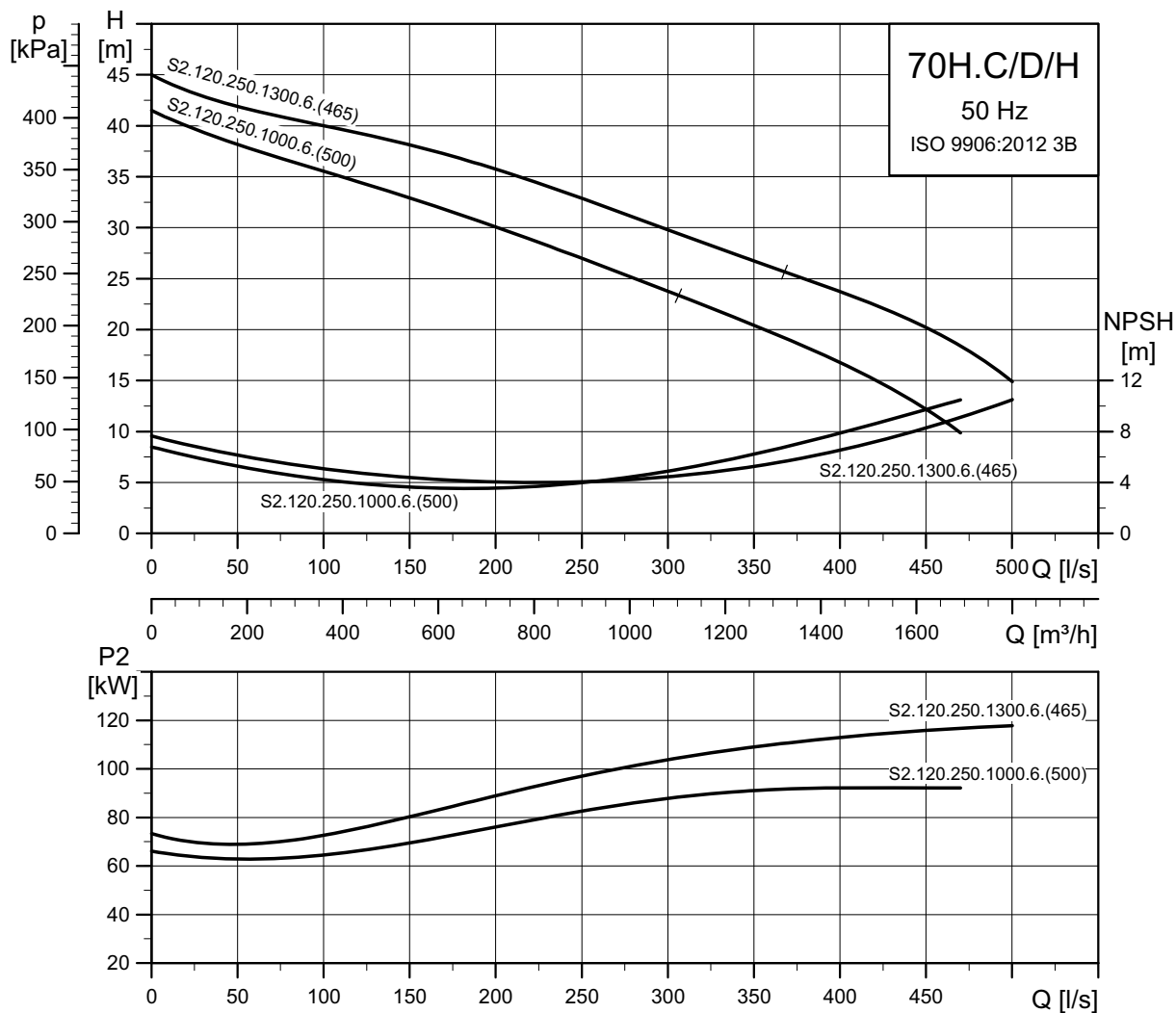
Pump data

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.105.250.650.8.70H.S/C/D/H.538...	538	105	10	20
S2.120.250.800.6.70H.S/C/D/H.465...	465	120		

High pressure - 3 x 400/690 V
S2.120.250.1000.6 and S2.120.250.1300.6



TM04 1931 1914



TM04 1933 1914

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1		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		
S2.120.250.1000.6.70H.S.500...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S2.120.250.1000.6.70H.C.500...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S2.120.250.1000.6.70H.D.500...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S2.120.250.1000.6.70H.H.500...	109	100	6	984	Y/D	189/110	1249	91	92	92	0.64	0.73	0.83	2.1000	2090
S2.120.250.1300.6.70H.S.528...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273
S2.120.250.1300.6.70H.C.528...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273
S2.120.250.1300.6.70H.D.528...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273
S2.120.250.1300.6.70H.H.528...	141	130	6	984	Y/D	265/154	1965	90	92	92	0.62	0.72	0.77	2.8000	3273

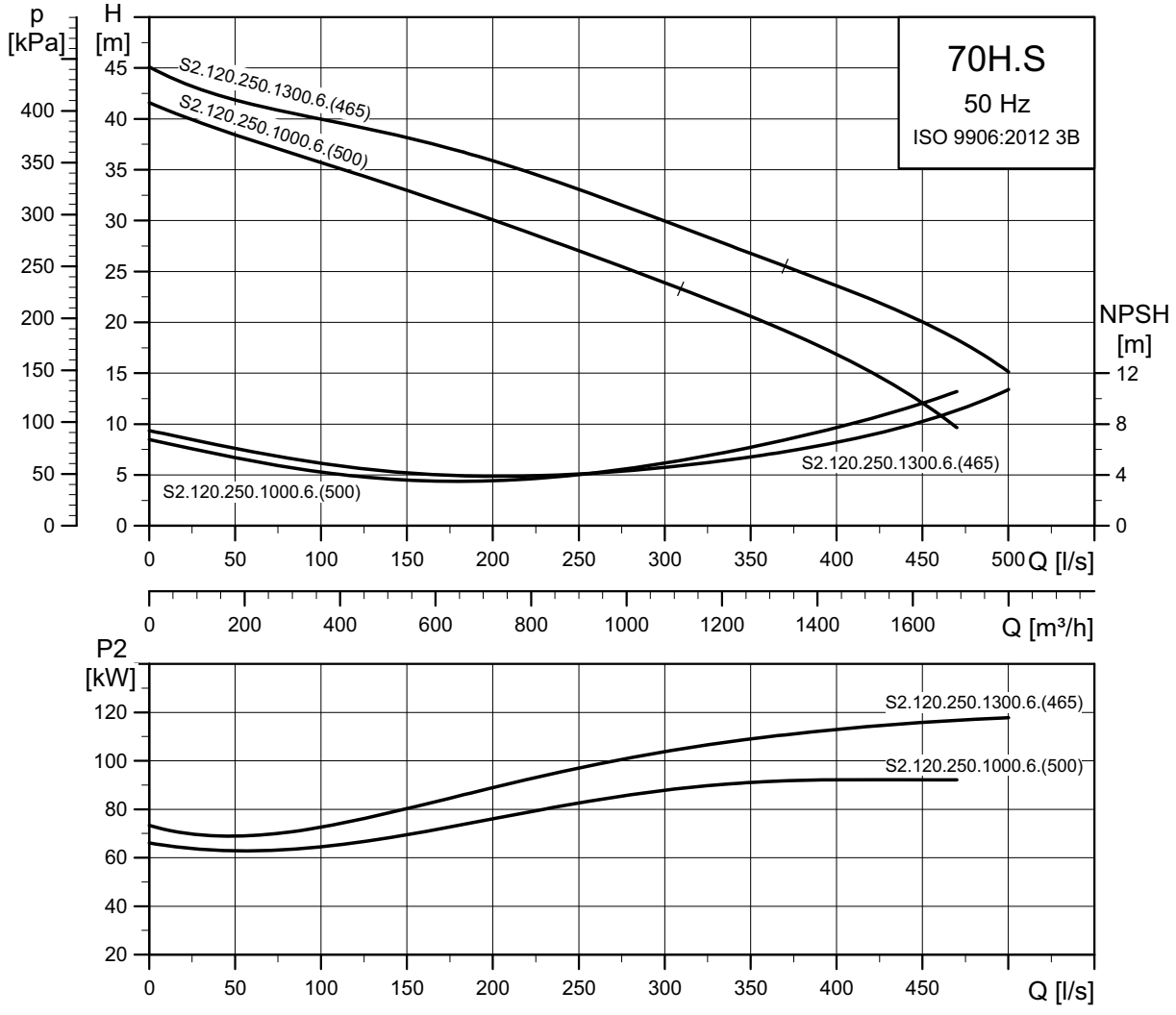
¹ Low/high voltage (400/690 V).
Note: Enclosure class: IP68

Pump data

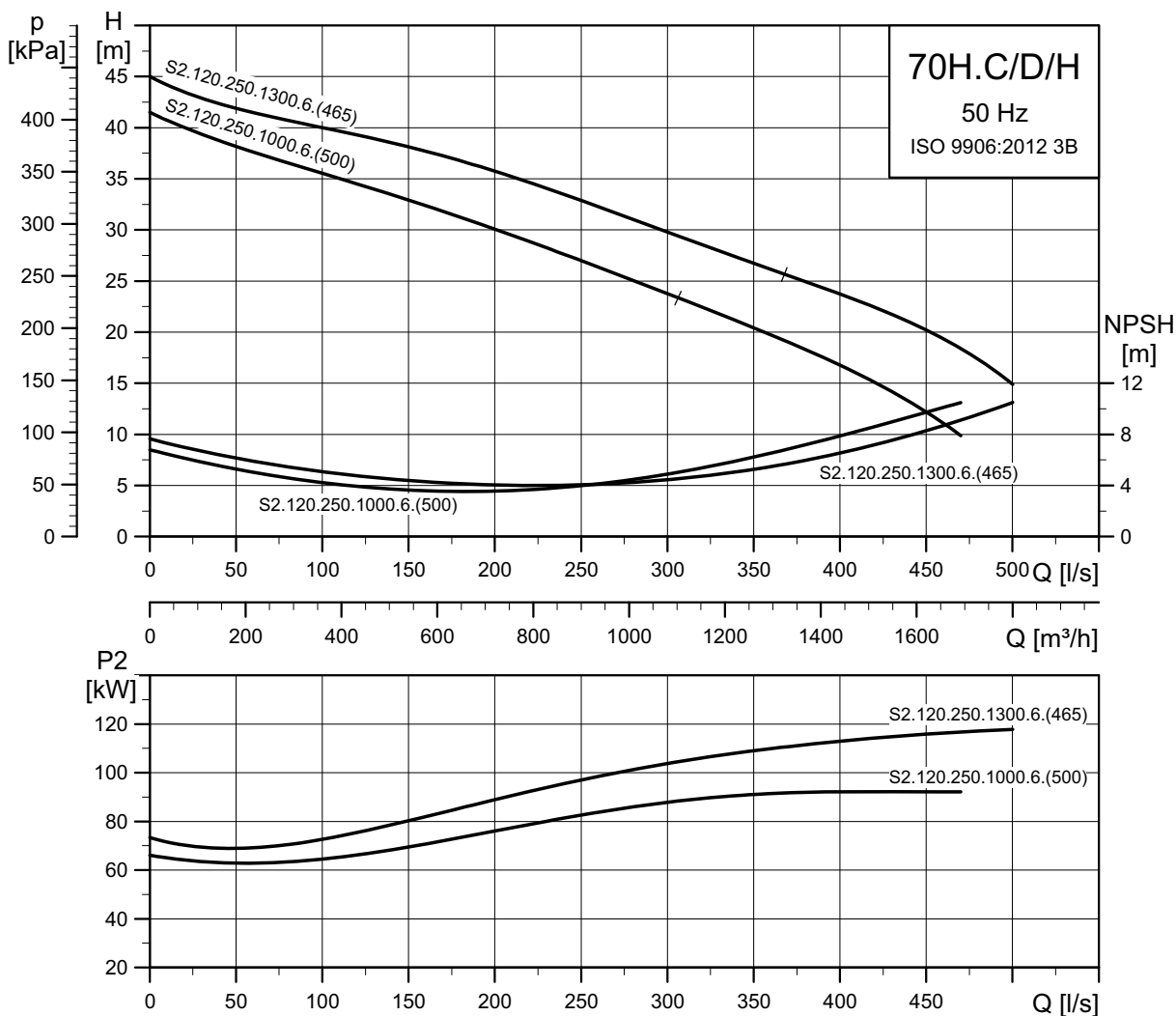
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.120.250.1000.6.70H.S/C/D/H.500...	500	120	10	20
S2.120.250.1300.6.70H.S/C/D/H.528...	528			

High pressure - 3 x 415 V

S2.120.250.1000.6 and S2.120.250.1300.6



TM04 1931 0908



TM04 1933 0908

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. 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]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
S2.120.250.1000.6.70H.S.500...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090				
S2.120.250.1000.6.70H.C.500...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090				
S2.120.250.1000.6.70H.D.500...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090				
S2.120.250.1000.6.70H.H.500...	109	100	6	984	Y/D	183	1203	91	92	92	0.70	0.80	0.83	2.1000	2090				
S2.120.250.1300.6.70H.S.528...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273				
S2.120.250.1300.6.70H.C.528...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273				
S2.120.250.1300.6.70H.D.528...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273				
S2.120.250.1300.6.70H.H.528...	141	130	6	984	Y/D	256	1894	90	92	92	0.62	0.72	0.77	2.8000	3273				

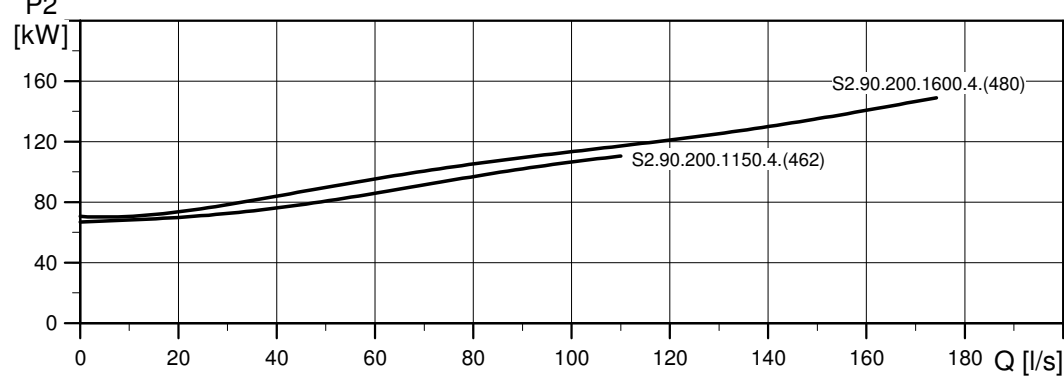
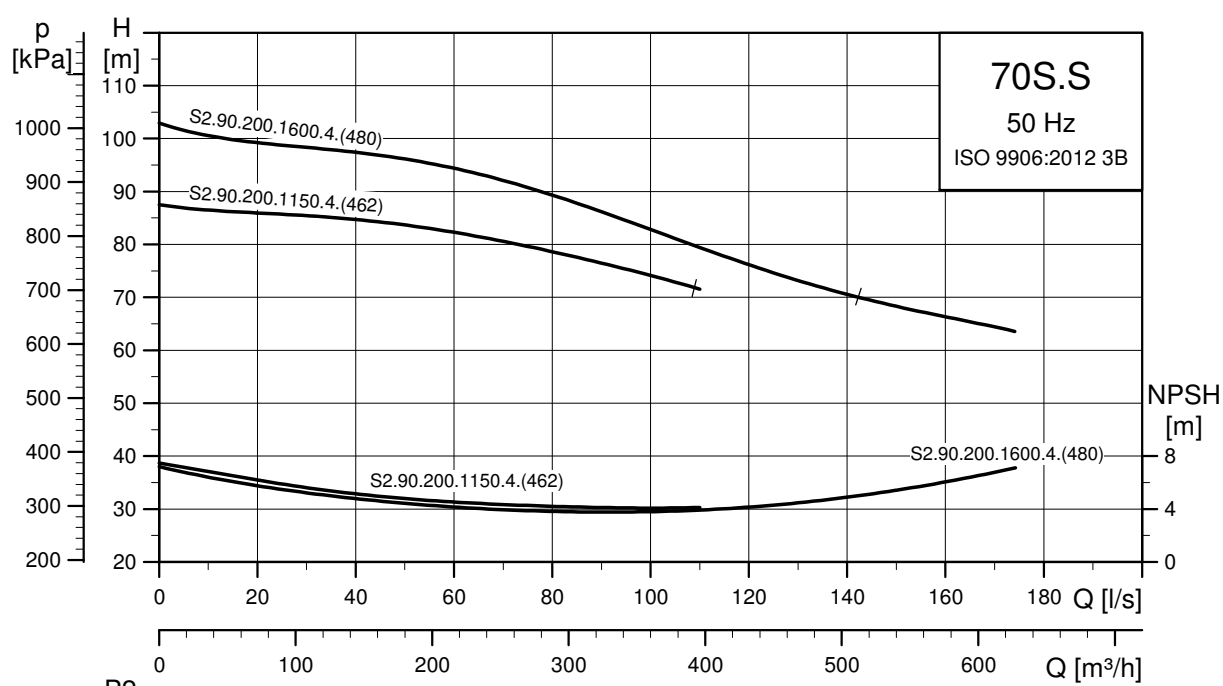
Note: Enclosure class: IP68

Pump data

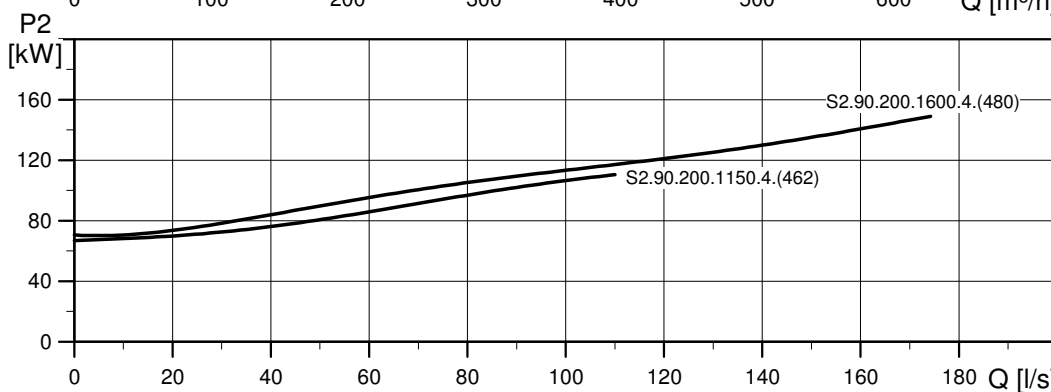
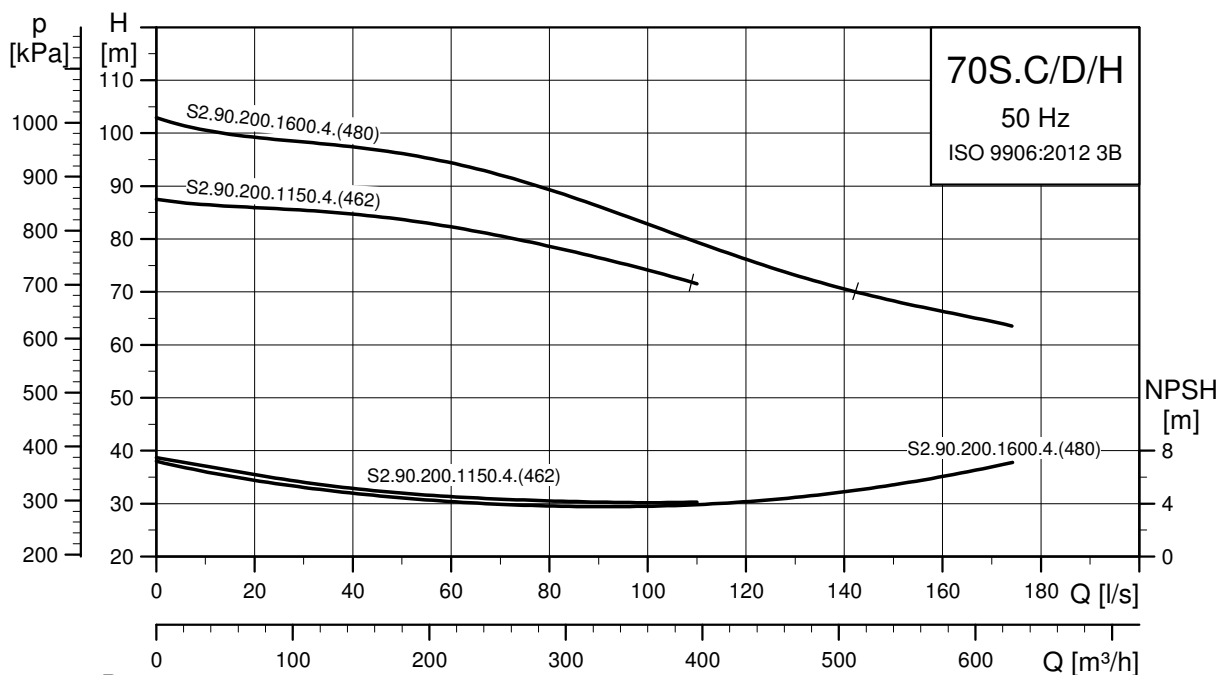
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.120.250.1000.6.70H.S/C/D/H.500...	500	120	10	20
S2.120.250.1300.6.70H.S/C/D/H.528...	528			

Super-high pressure - 3 x 400/690 V

S2.90.200.1150.4 and S2.90.200.1600.4



TM04 1871 1117



TM04 1872 1117

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N^1			η_{motor} [%]			Cos ϕ			Moment of inertia [kgm ²]	Breakdown torque M_{max} [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
S2.90.200.1150.4.70S.S.462...	122	115	4	1483	Y/D	211/122	1430	94	95	94	0.69	0.79	0.84	1.1000	2232	
S2.90.200.1150.4.70S.C.462...	122	115	4	1483	Y/D	211/122	1430	94	95	94	0.69	0.79	0.84	1.1000	2232	
S2.90.200.1150.4.70S.H.462...	122	115	4	1483	Y/D	211/122	1430	94	95	94	0.69	0.79	0.84	1.1000	2232	
S2.90.200.1150.4.70S.D.462...	122	115	4	1483	Y/D	211/122	1430	94	95	94	0.69	0.79	0.84	1.1000	2232	
S2.90.200.1600.4.70S.S.480...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	
S2.90.200.1600.4.70S.C.480...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	
S2.90.200.1600.4.70S.H.480...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	
S2.90.200.1600.4.70S.D.480...	167	155	4	1475	Y/D	280/163	2098	94	94	93	0.72	0.82	0.86	1.5000	3414	

¹ Low/high voltage (400/690 V).

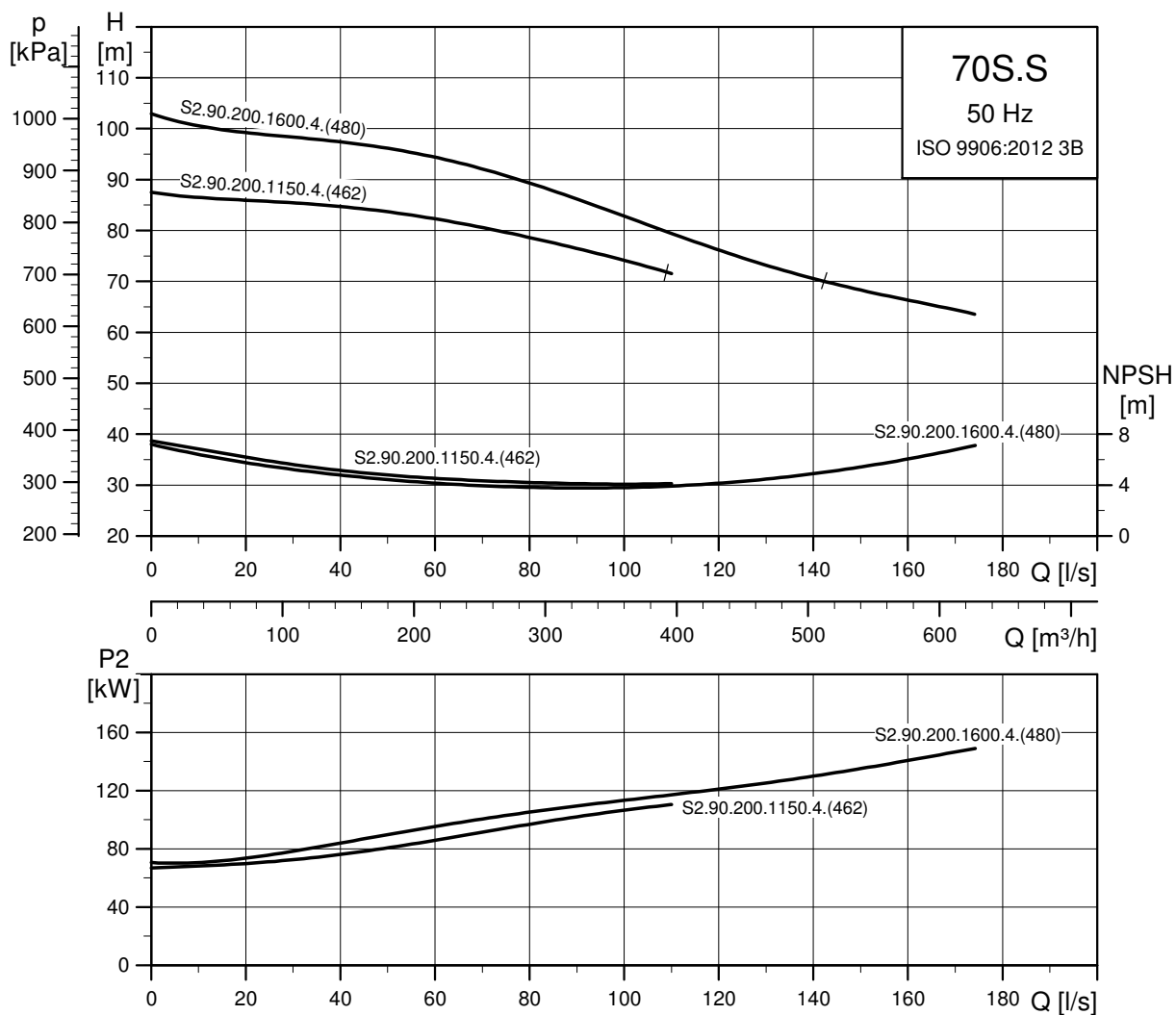
Note: Enclosure class: IP68

Pump data

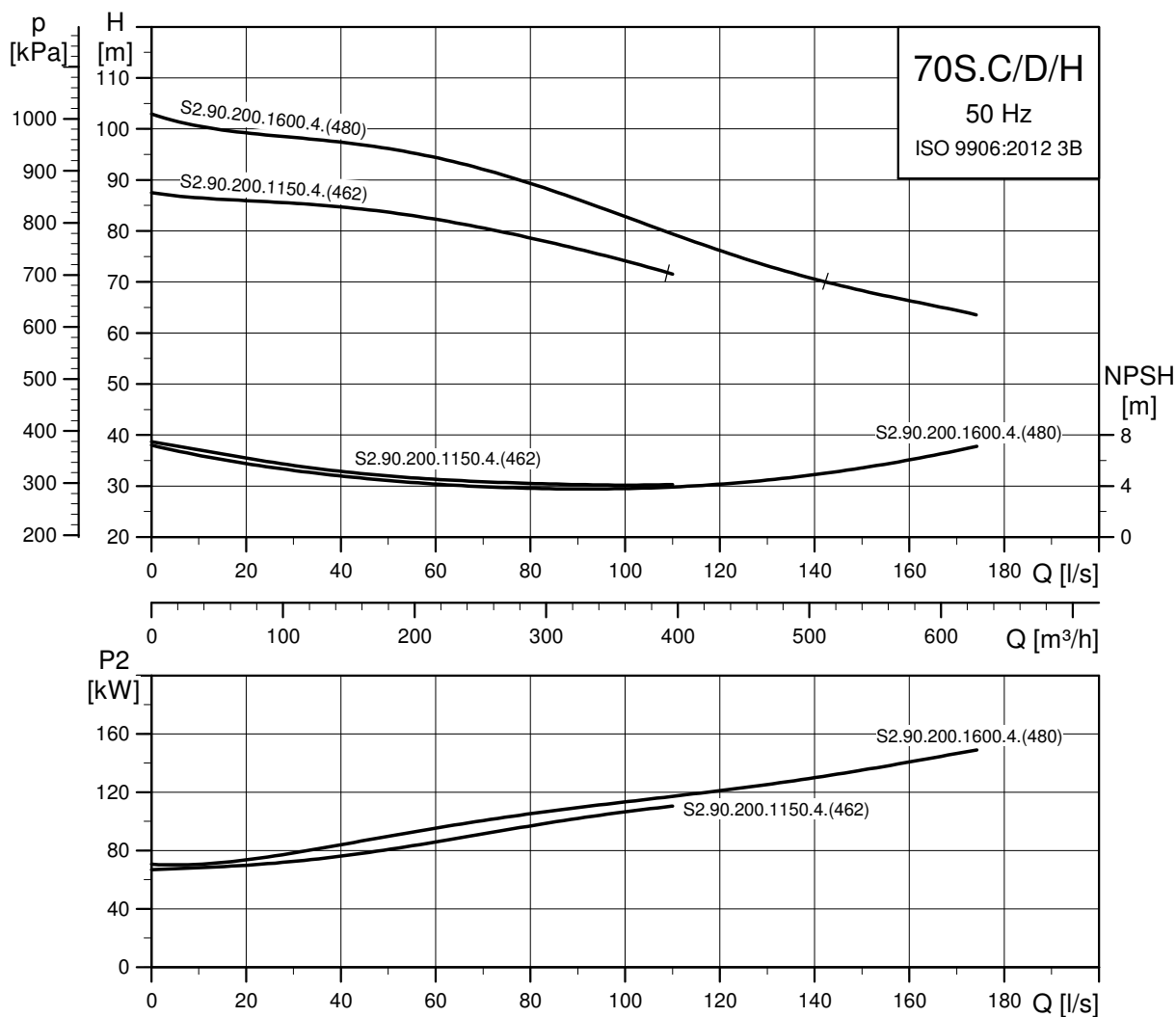
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.90.200.1150.4.70S.S/C/D/H.462...	462	90	10	20
S2.90.200.1600.4.70S.S/C/D/H.480...	480			

Super-high pressure - 3 x 415 V

S2.90.200.1150.4 and S2.90.200.1600.4



TM04 1871 1117



TM04 1872 1117

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N		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		
S2.90.200.1150.4.70S.S.462...	122	115	4	1483	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232
S2.90.200.1150.4.70S.C.462...	122	115	4	1483	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232
S2.90.200.1150.4.70S.D.462...	122	115	4	1483	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232
S2.90.200.1150.4.70S.H.462...	122	115	4	1483	Y/D	203	1378	94	95	94	0.69	0.79	0.84	1.1000	2232
S2.90.200.1600.4.70S.S.480...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414
S2.90.200.1600.4.70S.C.480...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414
S2.90.200.1600.4.70S.D.480...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414
S2.90.200.1600.4.70S.H.480...	167	155	4	1475	Y/D	270	2022	94	94	93	0.72	0.82	0.86	1.5000	3414

Note: Enclosure class: IP68


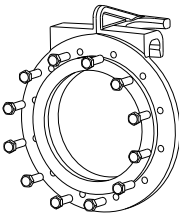
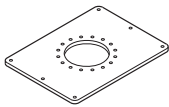
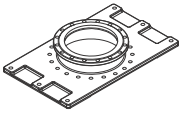
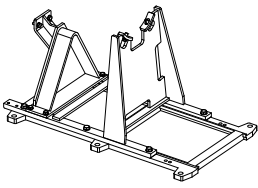
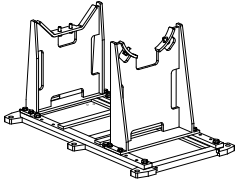
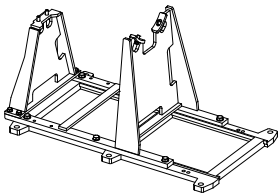
Pump data

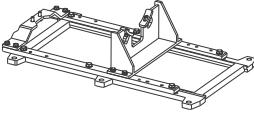
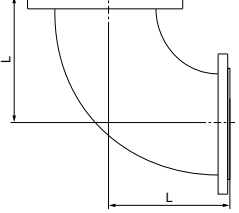
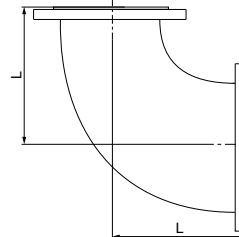
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth
	[mm]	[mm]	PN	[m]
S2.90.200.1150.4.70S.S/C/D/H.462...	462	90	10	20
S2.90.200.1600.4.70S.S/C/D/H.480...	480			

11. Accessories



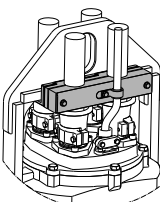





Accessories (for installation)

Pump type	Installation accessories
Range 50-70 S and C	DN 80-200 without a guide claw (guide claw included in auto-coupling kit)
Range 50-70 S and C	DN 250-600 with a guide claw mounted on the pump
Range 50-70 D	Pump without installation accessories (accessories as separate kit)
Range 50-70 H	Base stand for horizontal, dry installation supplied together with the pump

Pictures	Description	Size	Weight [kg]	PN	Product numbers
	TM06 9868 3417 Cast iron, epoxy-coated auto-coupling system complete with: <ul style="list-style-type: none"> • guide claw¹ • base unit • upper guide rail bracket • gaskets and bolts. 	DN 200	250	10	96641489
		DN 250	225		96255838
		DN 300	275		96782484
		DN 500	705		96782485
		DN 600	900		96782486
¹ Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.					
Intermediate guide rail bracket	For guide rails longer than 6 m	DN 200-600	8		96255842
Guide rails	Standard pipes. Not supplied by Grundfos				
	TM06 5164 3915 Adapter for Flygt auto-coupling with: <ul style="list-style-type: none"> • flange seal • bolts. 	Grundfos flange/Flygt flange			
		DN 200/DN 200 - 3"	25	10	97908872
		DN 250/DN 250 - 3"	33		97908887
		DN 300/DN 300 - 3"	120		97908892
		DN 300/DN 300 - 4"	120		97908893
DN 250	90	96308240			
	TM03 2015 3505 Steel, epoxy-coated. Base plate for vertical, dry installation with: <ul style="list-style-type: none"> • gaskets • bolts. 	DN 300	87		96308241
		DN 500	167		96308245
	TM04 3693 4908 Cast iron, epoxy-coated. Base plate for vertical, dry installation with: <ul style="list-style-type: none"> • gaskets • bolts. 	DN 400	195		96308244
	TM04 4158 0909 Base stand for horizontal, dry installation products: <ul style="list-style-type: none"> • S2.120.250.800/1000/1300.6.70H.H • S2.105.250.650.8.70H.H • S2.90.200.1150/1600.4.70S.H • S3.110.500.800/1000/1300.6.70L.H • S3.110.500.650.8.70L.H • S3.120.300.1300.6.70M.H • S3.120.300.350.8.70M.H • S3.120.600.1000/1300.6.70E.H • S3.120.600.650.8.70E.H 	Version 1	140		96308192
	TM04 4160 0909 Base stand for horizontal, dry installation products: <ul style="list-style-type: none"> • S1.80.200.850.4.70H.H • S2.100.200.1150/1600.4.70H.H • S2.110.200.850/1150/1600.4.70M.H • S2.120.250.1600.4.70L.H 	Version 2	140		96308212
	Base stand for horizontal, dry installation product: <ul style="list-style-type: none"> • S2.120.300.800/1000.6.70M.H 	Version 3	125		96308255

Pictures	Description	Size	Weight [kg]	PN	Product numbers
	TM06 4971 3415 Special base stand for horizontal, dry installation with customized height.				Contact Grundfos.
	Bend Cast iron, epoxy-coated	Pipe/pump inlet			
	L = 350 mm	DN 250	64	10	99035998
	L = 400 mm	DN 300	81		99035999
	L = 600 mm	DN 400	148		99036000
	L = 700 mm	DN 500	351		99036001
	Reducing bend Cast iron, epoxy-coated	Pipe/pump inlet			
	L = 400 mm	DN 300/DN 250	76	10	99036011
	L = 450 mm	DN 350/DN 250	93		99036012
	L = 500 mm	DN 400/DN 250	118		99036013
	L = 500 mm	DN 400/DN 300	128		99036014
	L = 600 mm	DN 500/DN 300	276		99359560
	L = 600 mm	DN 500/DN 400	306		99036015
	L = 700 mm	DN 600/DN 300	361		99359561
	L = 700 mm	DN 600/DN 500	411		99031225
	L = 900 mm	DN 800/DN 500	644		99359562

Other accessories

Pictures	Description	Size	Product number
	TM02 2626 5,02 Galvanised lifting chain with lifting link and safety hook. Certified. Maximum lifting capacity 3200 kg.	4 m	98425788
		6 m	98425789
		8 m	98425790
		10 m	98425791
		4 m	98425805
		6 m	98425806
	TM02 2626 5,02 Stainless steel lifting chain with lifting link and safety hook. Certified. Maximum lifting capacity 3200 kg.	8 m	98425807
		10 m	98425808
	TM06 4974 3415 Cable support bracket (case by case)		Contact Grundfos
	AMD.07.18.1430 mixer, 3 x 400 V, 50 Hz		99018155
	TM06 5110 3815 Bracket for wall mounting	2" thread	96115291
	Bracket for floor mounting	2" thread	96115292
	Bracket for suspended mounting	2" thread	96115293
	Tube for suspended mounting, length 3 m	2" thread	96115294
	TM01 6982 3999 Float switch	10 m cable	96003332
		20 m cable	96003695
		10 m cable	96003421
		20 m cable	96003536
	TM02 0670 5000 Bracket for float switches		
	Float switches with bracket		
	2 switches, 1 pump without alarm		62500013
	3 switches, 1 pump with alarm	10 m cable	62500014
	3 switches, 2 pumps with alarm		62500014
	3 switches, 2 pumps with alarm		62500015
	Float switches with bracket for use in potentially explosive environments		
	2 switches, 1 pump without alarm		62500016
	3 switches, 1 pump with alarm	10 m cable	62500017
	3 switches, 2 pumps with alarm		62500017
	3 switches, 2 pumps with alarm		62500018
	TM02 8860 0904 Bracket for level electrodes	For 38 mm mounting pipe	91713196

12. Dimensions

Recommendation for pump foundations

Note: This applies only to pumps above 15 kW.

All rotating equipment generates vibrations as a mass, such as an impeller or rotor, is turning at high speeds. Proper installation and anchorage of Grundfos pumps and installation accessories is critical to limit vibrations and achieve reliable, trouble-free installation. It is important to note that all mechanically connected pipes, fittings and supports of the pump are part of a single system.

The rotating mass of the entire pump together with the forces from the motor and hydraulics will generate disturbances related to the speed of the motor.

Unbalance and impeller vane pass in hydraulics are the two most important frequencies affecting vibration.

When these frequencies coincide with the natural frequency of the entire mechanical system, the vibration level will increase substantially.

Pumps from Grundfos are designed and produced according to the highest quality standards. The method and grade of balancing is specified by the manufacturer in order to achieve acceptable vibration levels. Although the pump itself can withstand rather high vibration levels under operating conditions without considerable lifetime reduction, the pipes and supportive structure might suffer and crack if vibration levels are too high. Furthermore, noticeable noise levels might be generated.

The likelihood of high vibration levels occurring is increased in variable-speed applications where the pump is operated over a range of speeds rather than at a single constant speed. Most variable-speed drives provide the possibility to exclude certain frequency ranges to avoid operating areas with high vibrations.

To ensure acceptable vibration levels in the field, all parts of the system must be sufficiently stiff and firmly anchored to minimise vibrations:

- The foundation and concrete must be of adequate strength to support the weight of the pump including accessories, the weight of the liquid passing through the pump and the forces generated by the pump.
- As a rule of thumb, the mass of the concrete foundation must be a minimum of three to five times the mass of the supported equipment and must have sufficient rigidity to withstand the axial, transverse and torsional loadings generated by the equipment.

- The foundation must be 15 cm wider than the base plate for pumps up to 350 kW and 25 cm wider for larger pumps.
- The concrete used in the foundation must have a minimum tensile strength of 250 N/cm². Epoxy grout must always be used to mate the secure the pump base plate to the foundation.

Pull-out strengths for anchor bolts

Submerged installation on auto-coupling (type S and C):

Auto-coupling base unit	Bolts	Pull-out resistance [kN]
DN 100	4 x M16	5
DN 125/150 ¹		8
DN 200		16
DN 250	4 x M24	30
DN 300		40
DN 500	6 x M30	40
DN 600		40

¹ Pump outlet DN 125 and base plate outlet DN 150.

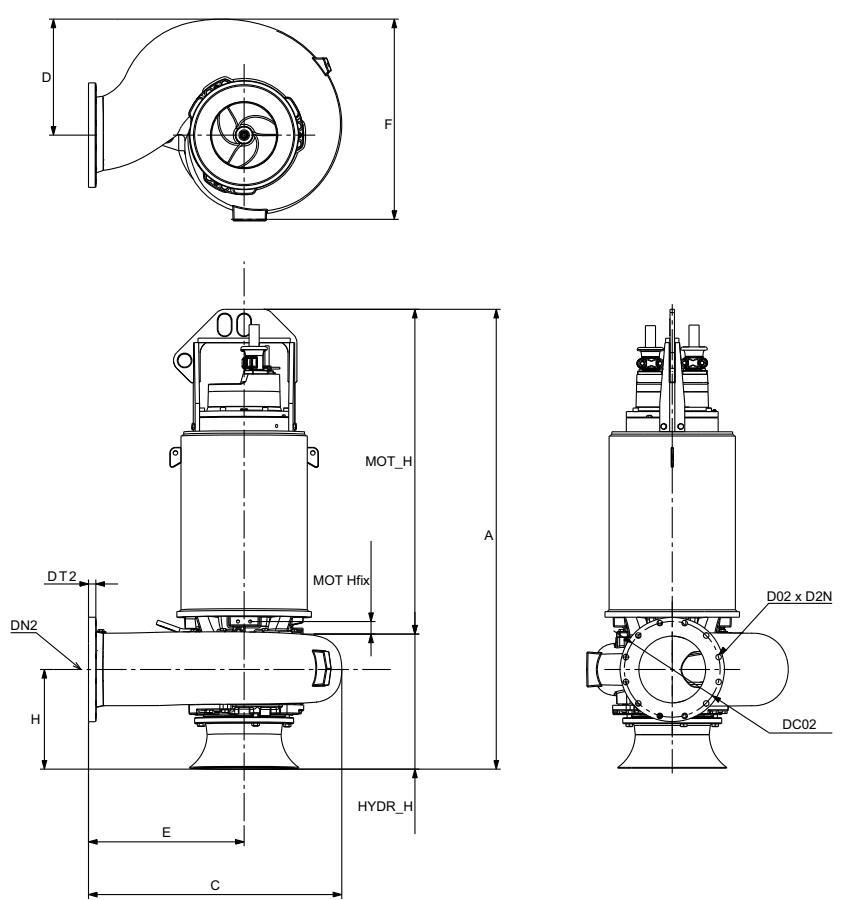
Dry installation (type H and D):

Dry installation	Anchor bolts	Pull-out resistance [kN]
DN 100	3 x M20	18
DN 150	6 x M20	18
DN 200		18
DN 250	6 x M24	25
DN 300		25
DN 500/400 ¹		25
DN 500		25

¹ Base plate inlet DN 500 and pump inlet DN 400.

Basic pump

Installation types S and C



Installation types D and H

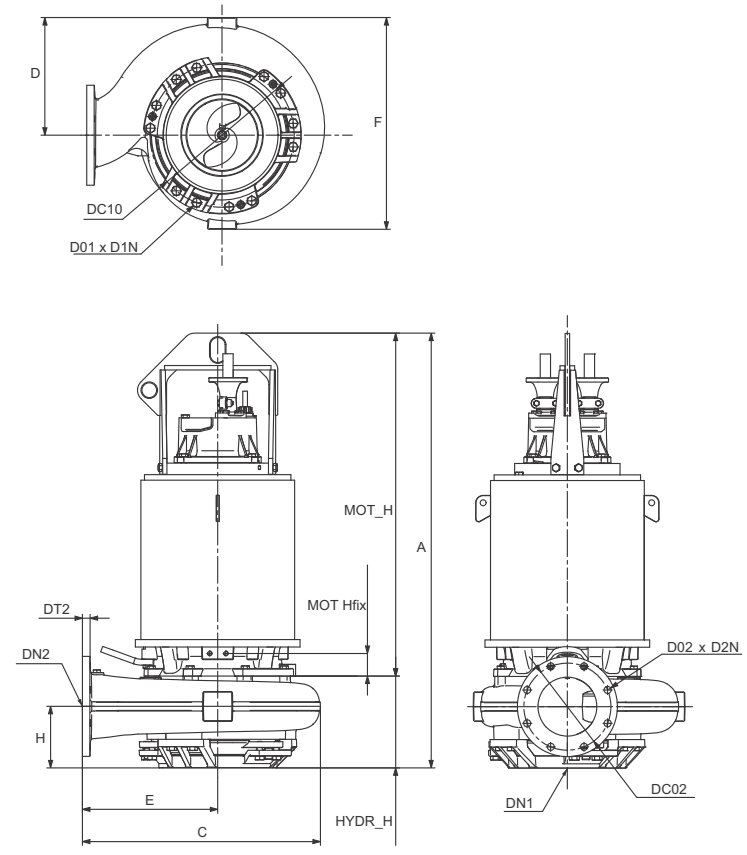


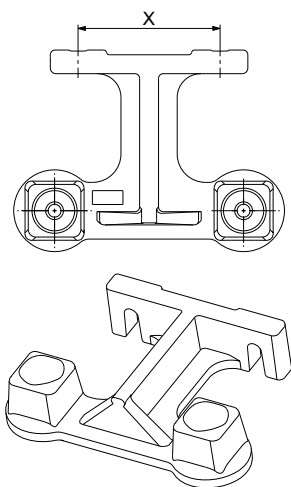
Fig. 34 Basic pumps

TM04 2412 2018 - TM07 1653 2018

Pump type	A	C	D	D01	D02	D1N	D2N	DC02	DC10	DN1	DN2	DT2	E	F	H	HYDR H	MOT H	MOT Hfix
S3.120.300.1000.6.70M.C	1915	1139	522	-	24	-	12	400	-	-	DN 300	33	700	907	450	595	1320	20
S3.120.300.1000.6.70M.D	1744	1139	522	M20	24	12	12	400	400	DN 300	DN 300	33	700	907	279	242	1320	20
S3.120.300.1000.6.70M.H	1744	1139	522	M20	24	12	12	400	400	DN 300	DN 300	33	700	907	279	242	1320	20
S3.120.300.1000.6.70M.S	1915	1139	522	-	24	-	12	400	-	-	DN 300	33	700	907	450	595	1320	20
S3.120.300.1300.6.70M.C	2070	1284	570	-	24	-	12	400	-	-	DN 300	33	760	1041	455	595	1475	20
S3.120.300.1300.6.70M.D	1899	1284	570	M20	24	12	12	400	400	DN 300	DN 300	33	760	1041	283	424	1475	20
S3.120.300.1300.6.70M.H	1899	1284	570	M20	24	12	12	400	400	DN 300	DN 300	33	760	1041	283	424	1475	20
S3.120.300.1300.6.70M.S	2070	1284	570	-	24	-	12	400	-	-	DN 300	33	760	1041	455	595	1475	20
S3.120.600.650.8.70E.C	1911	2124	886	-	30	-	20	725	-	-	DN 600	40	1350	1506	450	591	1320	20
S3.120.600.650.8.70E.D	1877	2124	886	M24	30	20	20	725	620	DN 500	DN 600	40	1350	1506	417	557	1320	20
S3.120.600.650.8.70E.H	1877	2124	886	M24	30	20	20	725	620	DN 500	DN 600	40	1350	1506	417	557	1320	20
S3.120.600.650.8.70E.S	1911	2124	886	-	30	-	20	725	-	-	DN 600	40	1350	1506	450	591	1320	20
S3.120.600.1000.6.70E.C	1911	2124	886	-	30	-	20	725	-	-	DN 600	40	1350	1506	450	591	1320	20
S3.120.600.1000.6.70E.D	1877	2124	886	M24	30	20	20	725	620	DN 500	DN 600	40	1350	1506	417	557	1320	20
S3.120.600.1000.6.70E.H	1877	2124	886	M24	30	20	20	725	620	DN 500	DN 600	40	1350	1506	417	557	1320	20
S3.120.600.1000.6.70E.S	1911	2124	886	-	30	-	20	725	-	-	DN 600	40	1350	1506	450	591	1320	20
S3.120.600.1300.6.70E.C	2066	2124	886	-	30	-	20	725	-	-	DN 600	40	1350	1506	450	591	1475	20
S3.120.600.1300.6.70E.D	2032	2124	886	M24	30	20	20	725	620	DN 500	DN 600	40	1350	1506	417	557	1475	20
S3.120.600.1300.6.70E.H	2032	2124	886	M24	30	20	20	725	620	DN 500	DN 600	40	1350	1506	417	557	1475	20
S3.120.600.1300.6.70E.S	2066	2124	886	-	30	-	20	725	-	-	DN 600	40	1350	1506	450	591	1475	20

Installation on auto-coupling system

Upper guide rail bracket dimensions

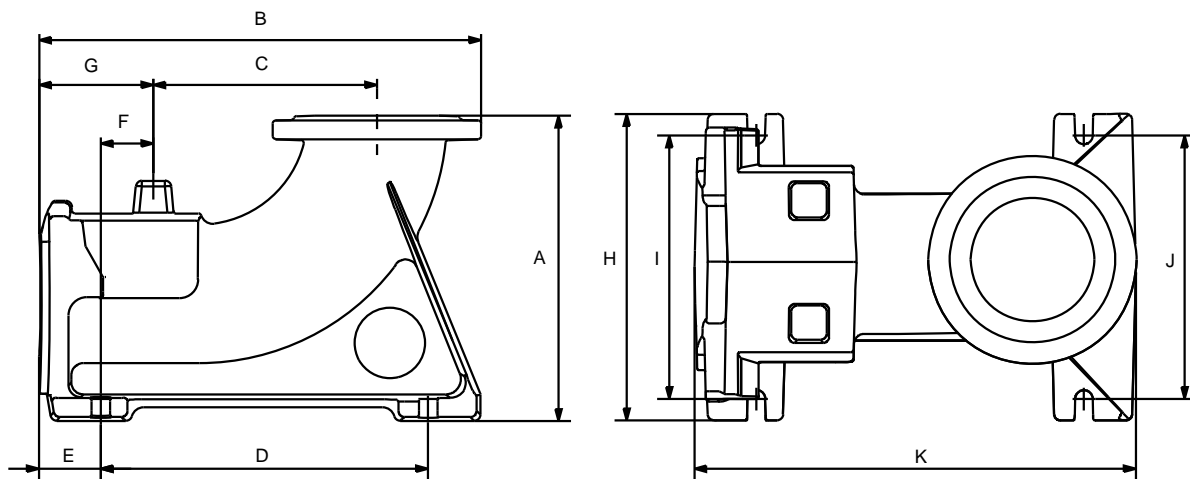


TM06 9915 3617

Fig. 35 Installation dimensions for upper guide rail bracket

Auto-coupling		X [mm]
Product number	Size	
96641489	DN 200	150
96782483	DN 250	
96782484	DN 300	
96782485	DN 500	
96782486	DN 600	

Auto-coupling dimensions



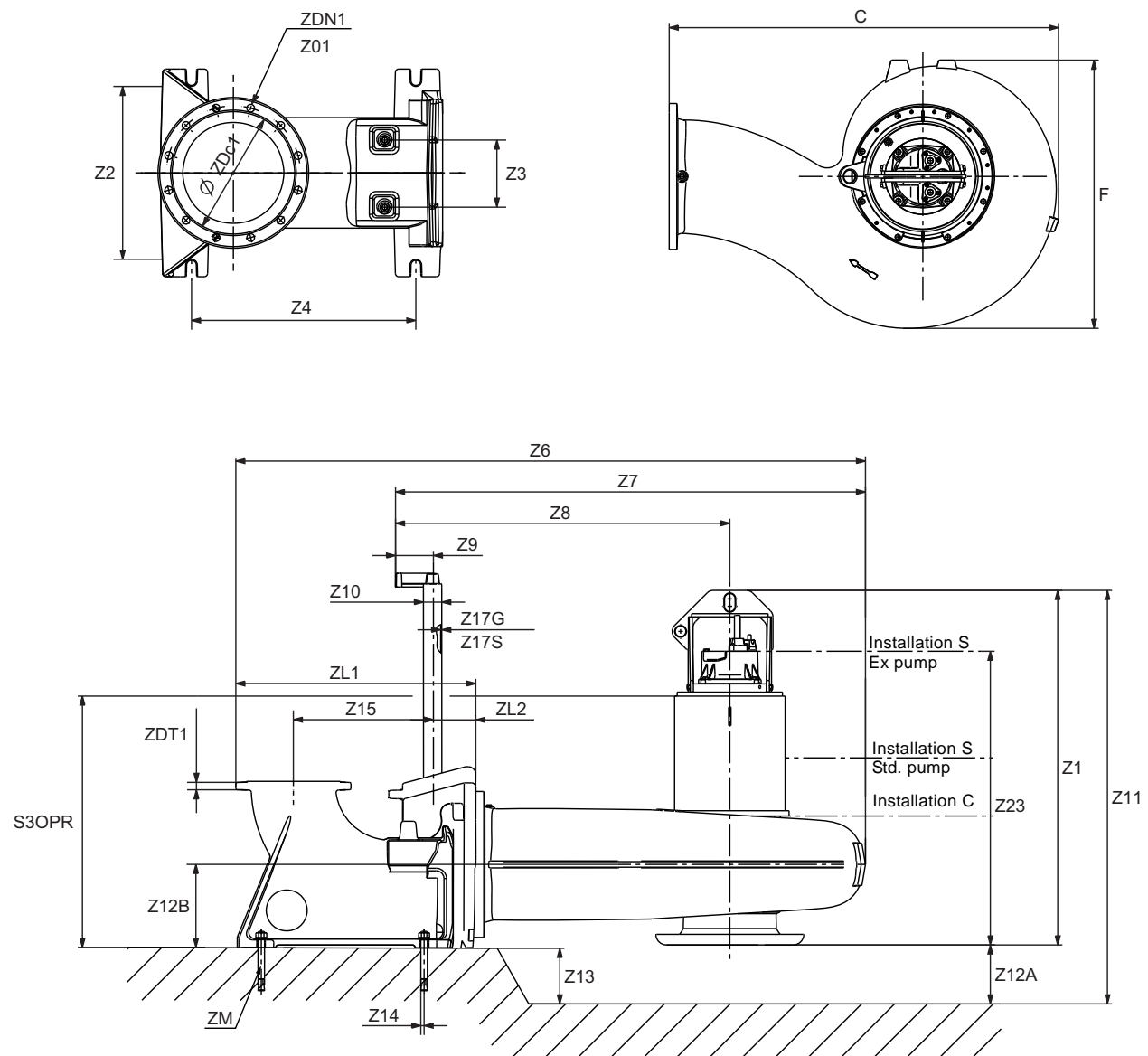
TM06 6497 1516

Fig. 36 Dimension for cast-iron base unit

Product number	Size	Dimensions [mm]										
		A	B	C	D	E	F	G	H	I	J	K
96641489	DN 200	485	710	365	535	89	86	175	500	430	430	710
96255838	DN 250	545	753	375	565	89	86	175	540	470	470	745
96782484	DN 300	650	860	450	670	80	95	175	620	550	550	845
96782485	DN 500	890	1148	564	735/150 ¹	127	99	226	720	660	6660	1120
96782486	DN 600	1050	1260	614	830/160 ¹	127	99	226	780	710	710	1230

¹ Six-bolt installation: distance between the front bolt hole and the middle bolt hole / distance between the middle bolt hole and the back bolt hole.

Pump installation dimensions



TM06 8504 2518

Fig. 37 Installation on auto-coupling system - version 1 (base unit with 4 anchor bolts)

- Note:** Z12A is the minimum recommended distance from pit bottom to bottom of pump inlet side.
- Note:** Z11 is the total height of pump installed on Grundfos installation accessory in the pit.
- Note:** The pump in this figure might not equal Z12A + Z1.

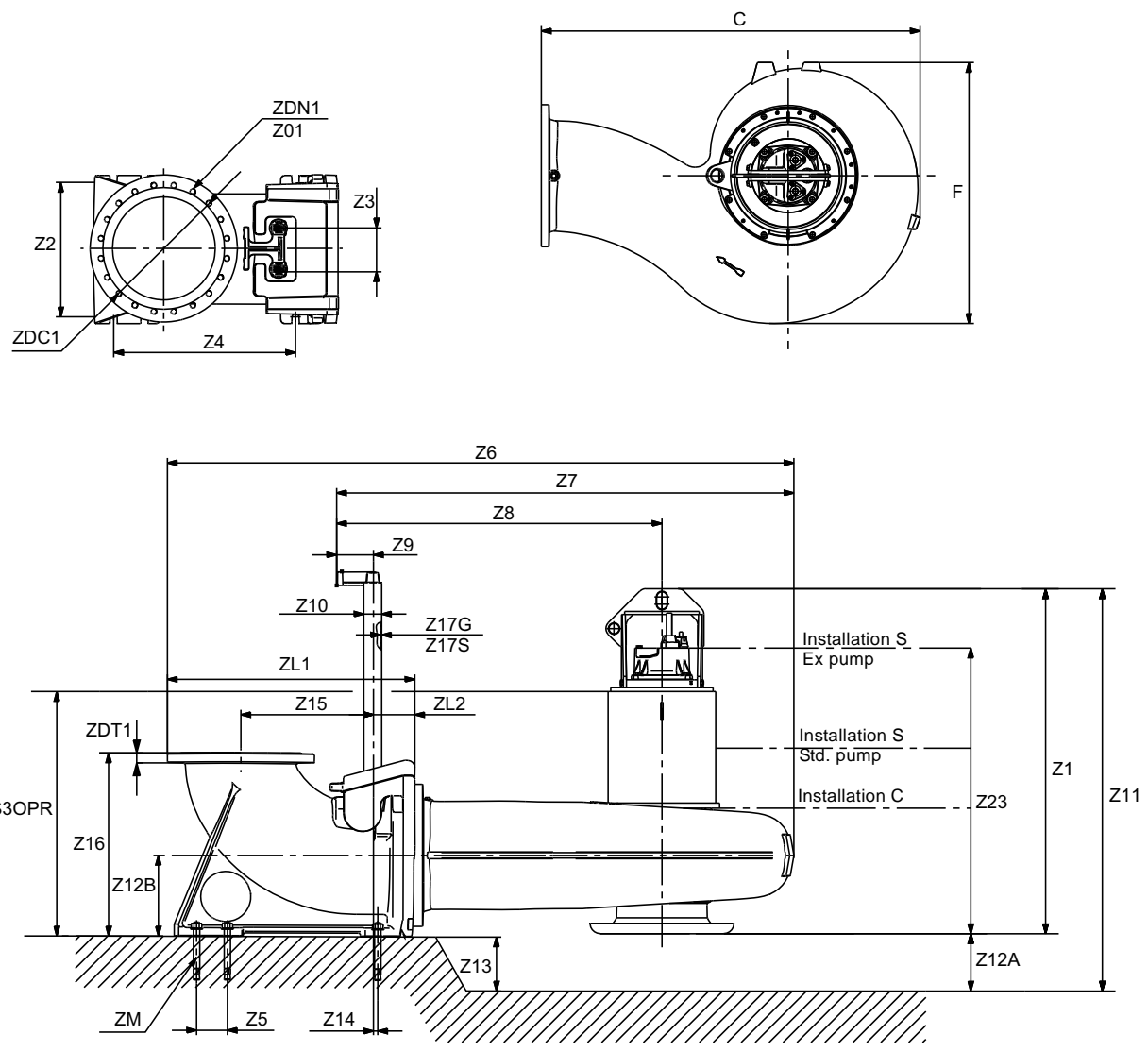


Fig. 38 Installation on auto-coupling system - version 2 (base unit with 6 anchor bolts)

- Note:** Z12A is the minimum recommended distance from pit bottom to bottom of pump inlet side.
- Note:** Z11 is the total height of pump installed on Grundfos installation accessory in the pit.
- Note:** The pump in this figure might not equal Z12A + Z1.

TM04 2418 2018

Pump type	C	F	Z01	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9	Z10	Z11	Z12A	Z12B
S3.110.500.650.8.70L.S/C	1843	1269	20 x 27	1830	657	200	885	150	3028	2297	1654	170	88.0	2030	200	380
S3.110.500.800.6.70L.S/C	1843	1269	20 x 27	1830	657	200	885	150	3028	2297	1654	170	88.0	2030	250	380
S3.110.500.1000.6.70L.S/C	1843	1269	20 x 27	1830	657	200	885	150	3028	2297	1654	170	88.0	2080	250	380
S3.110.500.1300.6.70L.S/C	1843	1269	20 x 27	1985	657	200	885	150	3028	2297	1654	170	88.0	2235	250	380
S3.120.600.650.8.70E.S/C	2124	1506	20 x 31	1911	710	200	990	160	3444	2574	1800	170	88.0	2142	231	431
S3.120.600.1000.6.70E.S/C	2124	1506	20 x 31	1911	710	200	990	160	3444	2574	1800	170	88.0	2192	281	431
S3.120.600.1300.6.70E.S/C	2124	1506	20 x 31	2066	710	200	990	160	3444	2574	1800	170	88.0	2347	281	431

Pump type	Z13	Z14	Z15	Z16	Z17		Z23		S3OPR		ZDC1	DN1	ZDT1	ZL1	ZL2	ZM
					G	S	Std.	Ex	Std.	Ex						
S3.110.500.650.8.70L.C	200	98	565	890	3	3	627	627	627	627	620	DN 500	42	1185	284	6 x M30
S3.110.500.650.8.70L.S	200	98	565	890	3	3	985	1534	985	1534	620	DN 500	42	1185	284	6 x M30
S3.110.500.800.6.70L.C	250	98	565	890	3	3	627	627	627	627	620	DN 500	42	1185	284	6 x M30
S3.110.500.800.6.70L.S	250	98	565	890	3	3	985	1534	985	1534	620	DN 500	42	1185	284	6 x M30
S3.110.500.1000.6.70L.C	250	98	565	890	3	3	627	627	627	627	620	DN 500	42	1185	284	6 x M30
S3.110.500.1000.6.70L.S	250	98	565	890	3	3	985	1534	985	1534	620	DN 500	42	1185	284	6 x M30
S3.110.500.1300.6.70L.C	250	98	565	890	3	3	627	627	627	627	620	DN 500	42	1185	284	6 x M30
S3.110.500.1300.6.70L.S	250	98	565	890	3	3	1062	1689	1062	1689	620	DN 500	42	1185	284	6 x M30
S3.120.600.650.8.70E.C	250	98	615	1050	3	3	708	708	689	689	725	DN 600	48	1320	280	6 x M30
S3.120.600.650.8.70E.S	250	98	615	1050	3	3	1066	1615	1047	1596	725	DN 600	48	1320	280	6 x M30
S3.120.600.1000.6.70E.C	300	98	615	1050	3	3	708	708	689	689	725	DN 600	48	1320	280	6 x M30
S3.120.600.1000.6.70E.S	300	98	615	1050	3	3	1066	1615	1047	1596	725	DN 600	48	1320	280	6 x M30
S3.120.600.1300.6.70E.C	300	98	615	1050	3	3	708	708	689	689	725	DN 600	48	1320	280	6 x M30
S3.120.600.1300.6.70E.S	300	98	615	1050	3	3	1143	1770	1124	1751	725	DN 600	48	1320	280	6 x M30

Dry, vertical installation on concrete foundation

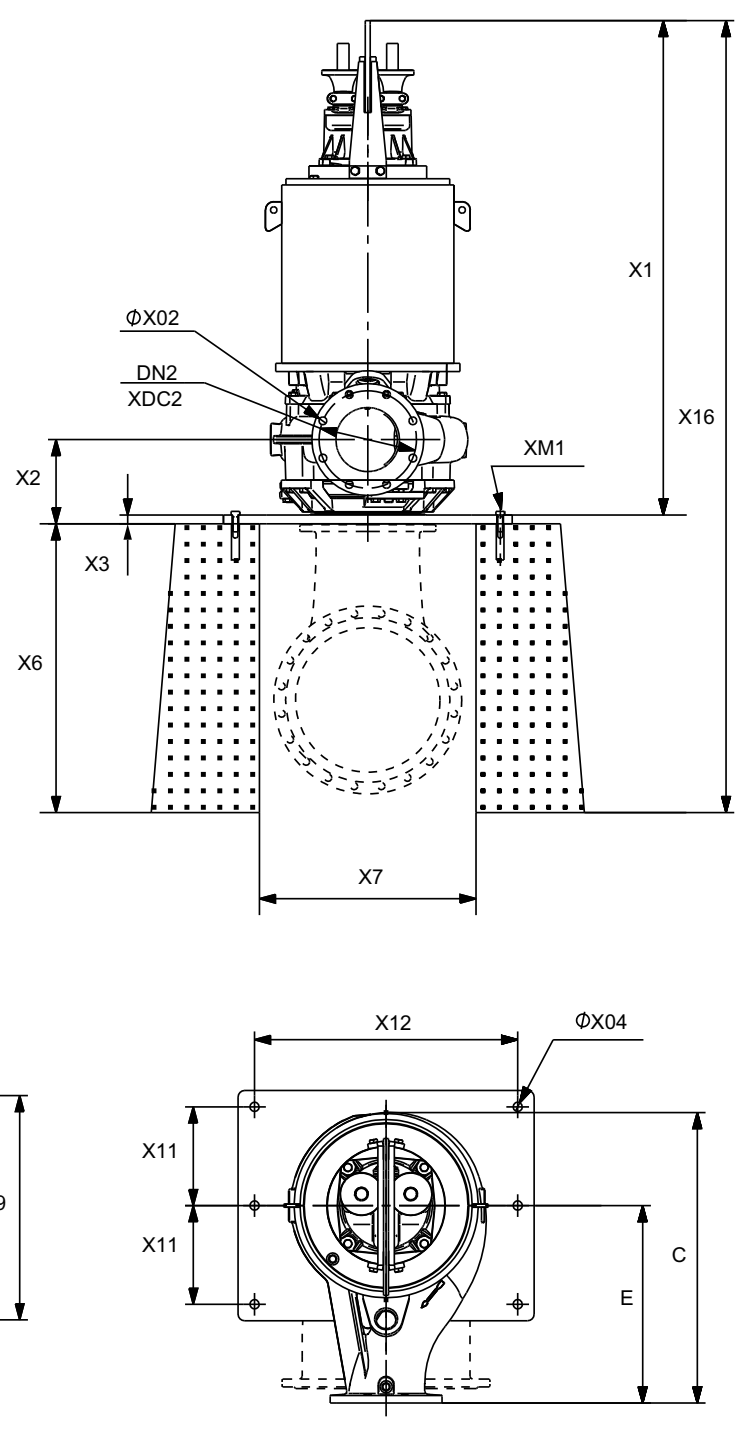


Fig. 39 Dry, vertical installation on concrete foundation

TM04 2424 2018

Pump type	C	E	Ø X02	Ø X03	Ø X04	X1	X2	X3	X6	X7	X8
S1.80.200.850.4.70H.D	883	600	24	23	28	1654	246	20	700	500	900
S2.90.200.1150.4.70S.D	1069	750	24	23	28	1660	249	20	700	500	900
S2.90.200.1600.4.70S.D	1069	750	24	23	28	1815	249	20	700	500	900
S2.100.200.1150.4.70H.D	883	600	24	23	28	1654	246	20	700	500	900
S2.100.200.1600.4.70H.D	883	600	24	23	28	1809	246	20	700	500	900
S2.110.200.850.4.70M.D	809	460	24	23	28	1638	235	20	700	500	900
S2.110.200.1150.4.70M.D	837	550	24	23	28	1659	243	20	700	500	900
S2.110.200.1600.4.70M.D	837	550	24	23	28	1814	243	20	700	500	900
S2.105.250.650.8.70H.D	1193	750	24	23	28	1744	310	20	800	600	900
S2.120.250.800.6.70H.D	1193	750	24	23	28	1744	310	20	800	600	900
S2.120.250.1000.6.70H.D	1193	750	24	23	28	1744	310	20	800	600	900
S2.120.250.1300.6.70H.D	1193	750	24	23	28	1899	310	20	800	600	900
S2.120.250.1600.4.70L.D	1068	750	24	23	28	1825	253	20	800	600	900
S3.110.500.650.8.70L.D	1843	1200	27	27	28	1783	493	160	1450	850	1180
S3.110.500.800.6.70L.D	1843	1200	27	27	28	1783	493	160	1450	850	1180
S3.110.500.1000.6.70L.D	1843	1200	27	27	28	1783	493	160	1450	850	1180
S3.110.500.1300.6.70L.D	1843	1200	27	27	28	1938	493	160	1450	850	1180
S3.120.300.650.8.70M.D	1284	760	24	23	28	1744	303	20	800	600	900
S3.120.300.800.6.70M.D	1139	700	24	23	28	1744	299	20	800	600	900
S3.120.300.1000.6.70M.D	1139	700	24	23	28	1744	299	20	800	600	900
S3.120.300.1300.6.70M.D	1284	760	24	23	28	1899	303	20	800	600	900
S3.120.600.650.8.70E.D	2124	1350	30	27	28	1877	452	35	1450	850	1180
S3.120.600.1000.6.70E.D	2124	1350	30	27	28	1877	452	35	1450	850	1180
S3.120.600.1300.6.70E.D	2124	1350	30	27	28	2032	452	35	1450	850	1180

Pump type	X9	X10	X11	X12	X16	DT2	XDC2	XDC3	DN2	XM1
S1.80.200.850.4.70H.D	700	250	300	800	2374	26	296	350	DN 200	6 x M24
S2.90.200.1150.4.70S.D	700	250	300	800	2380	24	295	350	DN 200	6 x M24
S2.90.200.1600.4.70S.D	700	250	300	800	2535	24	295	350	DN 200	6 x M24
S2.100.200.1150.4.70H.D	700	250	300	800	2374	26	296	350	DN 200	6 x M24
S2.100.200.1600.4.70H.D	700	250	300	800	2529	26	296	350	DN 200	6 x M24
S2.110.200.850.4.70M.D	700	250	300	800	2358	26	296	350	DN 200	6 x M24
S2.110.200.1150.4.70M.D	700	250	300	800	2379	24	296	350	DN 200	6 x M24
S2.110.200.1600.4.70M.D	700	250	300	800	2534	24	296	350	DN 200	6 x M24
S2.105.250.650.8.70H.D	700	300	300	800	2564	30	350	400	DN 250	6 x M24
S2.120.250.800.6.70H.D	700	300	300	800	2564	30	350	400	DN 250	6 x M24
S2.120.250.1000.6.70H.D	700	300	300	800	2564	30	350	400	DN 250	6 x M24
S2.120.250.1300.6.70H.D	700	300	300	800	2719	30	350	400	DN 250	6 x M24
S2.120.250.1600.4.70L.D	700	300	300	800	2645	30	350	400	DN 250	6 x M24
S3.110.500.650.8.70L.D	700	400	300	1100	3393	37	620	620	DN 500	6 x M24
S3.110.500.800.6.70L.D	700	400	300	1100	3393	37	620	620	DN 500	6 x M24
S3.110.500.1000.6.70L.D	700	400	300	1100	3393	37	620	620	DN 500	6 x M24
S3.110.500.1300.6.70L.D	700	400	300	1100	3548	37	620	620	DN 500	6 x M24
S3.120.300.650.8.70M.D	700	300	300	800	2564	33	400	400	DN 300	6 x M24
S3.120.300.800.6.70M.D	700	300	300	800	2564	33	400	400	DN 300	6 x M24
S3.120.300.1000.6.70M.D	700	300	300	800	2564	33	400	400	DN 300	6 x M24
S3.120.300.1300.6.70M.D	700	300	300	800	2719	33	400	400	DN 300	6 x M24
S3.120.600.650.8.70E.D	700	500	300	1100	3362	40	725	620	DN 600	6 x M24
S3.120.600.1000.6.70E.D	700	500	300	1100	3362	40	725	620	DN 600	6 x M24
S3.120.600.1300.6.70E.D	700	500	300	1100	3517	40	725	620	DN 600	6 x M24

Dry, horizontal installation on base stand

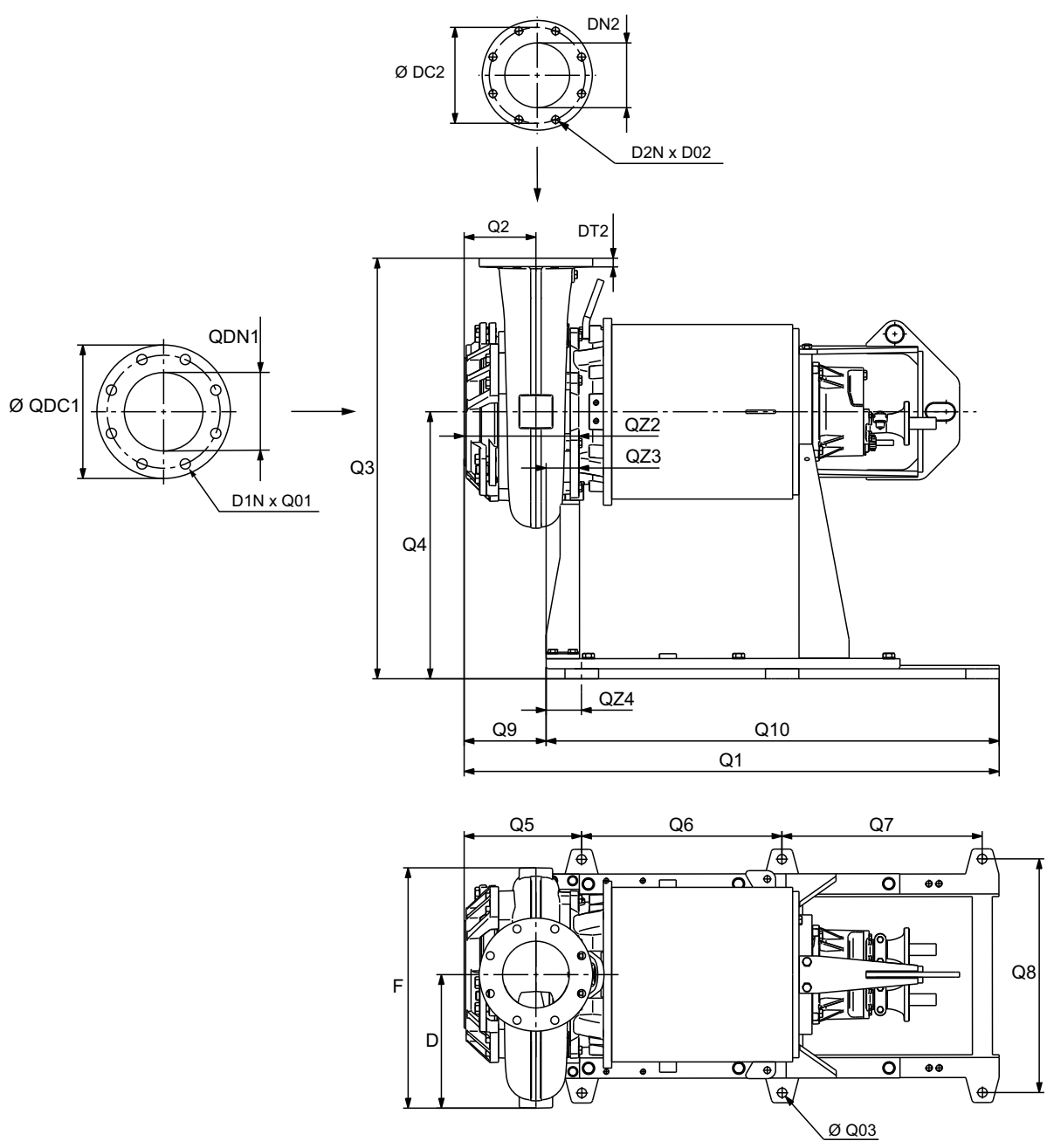


Fig. 40 Dry, horizontal installation on base stand

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Pump type	D	F	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
S1.80.200.850.4.70H.H	300	596	1654	226	1400	800	411	600	600	700	304	1357
S2.90.200.1150.4.70S.H	360	710	1660	229	1550	800	417	600	600	700	310	1357
S2.90.200.1600.4.70S.H	360	710	1815	229	1550	800	417	600	600	700	310	1357
S2.100.200.1150.4.70H.H	300	596	1654	226	1400	800	411	600	600	700	304	1357
S2.100.200.1600.4.70H.H	300	596	1809	226	1400	800	411	600	600	700	304	1357
S2.110.200.850.4.70M.H	400	720	1638	215	1260	800	395	600	600	700	288	1357
S2.110.200.1150.4.70M.H	357	669	1659	223	1350	800	416	600	600	700	309	1357
S2.110.200.1600.4.70M.H	357	669	1814	223	1350	800	416	600	600	700	309	1357
S2.105.250.650.8.70H.H	478	891	1744	290	1550	800	501	600	600	700	394	1357
S2.120.250.800.6.70H.H	478	891	1744	290	1550	800	501	600	600	700	394	1357
S2.120.250.1000.6.70H.H	478	891	1744	290	1550	800	501	600	600	700	394	1357
S2.120.250.1300.6.70H.H	478	891	1899	290	1550	800	501	600	600	700	394	1357
S2.120.250.1600.4.70L.H	410	730	1825	233	1550	800	427	600	600	700	320	1357
S3.110.500.650.8.70L.H	719	1269	1783	333	2000	800	540	600	600	700	433	1357
S3.110.500.800.6.70L.H	719	1269	1783	333	2000	800	540	600	600	700	433	1357
S3.110.500.1000.6.70L.H	719	1269	1783	333	2000	800	540	600	600	700	433	1357
S3.110.500.1300.6.70L.H	719	1269	1938	333	2000	800	540	600	600	700	433	1357
S3.120.300.650.8.70M.H	570	1041	1744	283	1560	800	501	600	600	700	394	1357
S3.120.300.800.6.70M.H	522	907	1744	279	1500	800	501	600	600	700	394	1357
S3.120.300.1000.6.70M.H	522	907	1744	279	1500	800	501	600	600	700	394	1357
S3.120.300.1300.6.70M.H	570	1041	1899	283	1560	800	501	600	600	700	394	1357
S3.120.600.650.8.70E.H	886	1506	1877	417	2150	800	634	600	600	700	527	1357
S3.120.600.1000.6.70E.H	886	1506	1877	417	2150	800	634	600	600	700	527	1357
S3.120.600.1300.6.70E.H	886	1506	2032	417	2150	800	634	600	600	700	527	1357

Pump type	Ø QDC1	QDN1	D1N	Q01	DN2	D2N	D02	DC2	DT2	Ø Q03	QZ2	QZ3	QZ4
S1.80.200.850.4.70H.H	350	250	12	M20	200	8	24	296	26	28	354	-50	107
S2.90.200.1150.4.70S.H	350	250	12	M20	200	8	24	295	24	28	360	-50	107
S2.90.200.1600.4.70S.H	350	250	12	M20	200	8	24	295	24	28	360	-50	107
S2.100.200.1150.4.70H.H	350	250	12	M20	200	8	24	296	26	28	354	-50	107
S2.100.200.1600.4.70H.H	350	250	12	M20	200	8	24	296	26	28	354	-50	107
S2.110.200.850.4.70M.H	350	250	12	M20	200	8	24	296	26	28	338	-50	107
S2.110.200.1150.4.70M.H	350	250	12	M20	200	8	24	296	24	28	359	-50	107
S2.110.200.1600.4.70M.H	350	250	12	M20	200	8	24	296	24	28	359	-50	107
S2.105.250.650.8.70H.H	400	300	12	M20	250	12	24	350	30	28	444	-50	107
S2.120.250.800.6.70H.H	400	300	12	M20	250	12	24	350	30	28	444	-50	107
S2.120.250.1000.6.70H.H	400	300	12	M20	250	12	24	350	30	28	444	-50	107
S2.120.250.1300.6.70H.H	400	300	12	M20	250	12	24	350	30	28	444	-50	107
S2.120.250.1600.4.70L.H	400	300	12	M20	250	12	24	350	30	28	370	-50	107
S3.110.500.650.8.70L.H	515	400	16	M24	500	20	27	620	37	28	483	-50	107
S3.110.500.800.6.70L.H	515	400	16	M24	500	20	27	620	37	28	483	-50	107
S3.110.500.1000.6.70L.H	515	400	16	M24	500	20	27	620	37	28	483	-50	107
S3.110.500.1300.6.70L.H	515	400	16	M24	500	20	27	620	37	28	483	-50	107
S3.120.300.650.8.70M.H	400	300	12	M20	300	12	24	400	33	28	444	-50	107
S3.120.300.800.6.70M.H	400	300	12	M20	300	12	24	400	33	28	444	-50	107
S3.120.300.1000.6.70M.H	400	300	12	M20	300	12	24	400	33	28	444	-50	107
S3.120.300.1300.6.70M.H	400	300	12	M20	300	12	24	400	33	28	444	-50	107
S3.120.600.650.8.70E.H	620	500	20	M24	600	20	30	725	40	28	577	-50	107
S3.120.600.1000.6.70E.H	620	500	20	M24	600	20	30	725	40	28	577	-50	107
S3.120.600.1300.6.70E.H	620	500	20	M24	600	20	30	725	40	28	577	-50	107

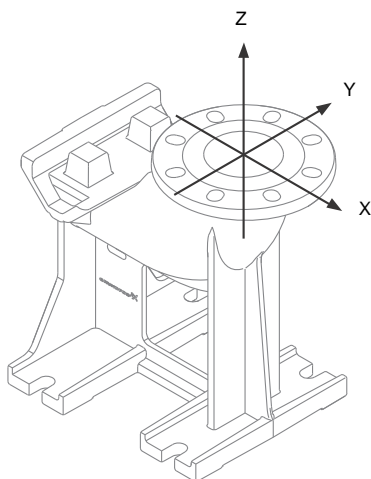
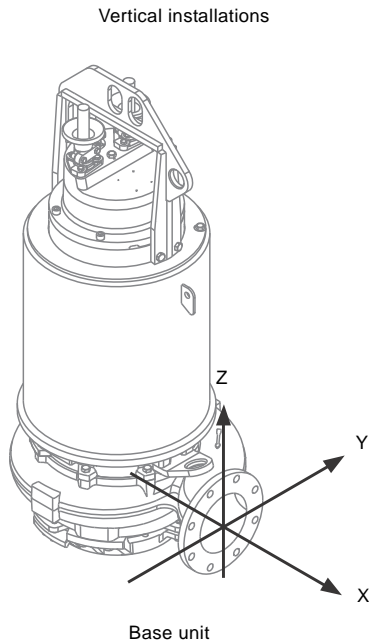
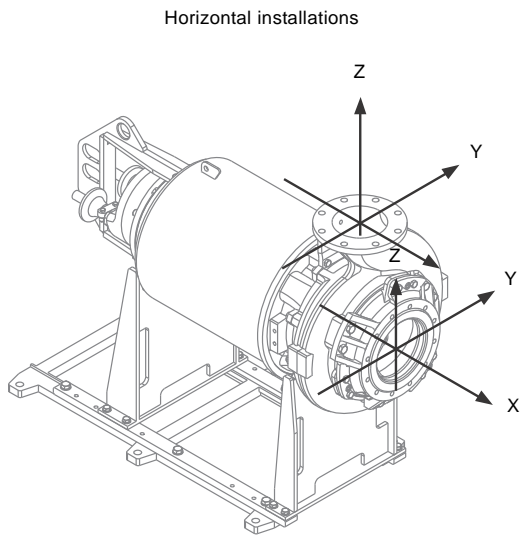
13. Weights

Weights include 10 m cable.

Pump type	Weight [kg]
S1.80.200.850.4.70H.S.448...	1050
S1.80.200.850.4.70H.C.448...	1195
S1.80.200.850.4.70H.D.448...	1185
S1.80.200.850.4.70H.H.448...	1320
S2.90.200.1150.4.70S.S.462...	1180
S2.90.200.1150.4.70S.C.462...	1320
S2.90.200.1150.4.70S.D.462...	1360
S2.90.200.1150.4.70S.H.462...	1500
S2.90.200.1600.4.70S.S.480...	1350
S2.90.200.1600.4.70S.C.480...	1500
S2.90.200.1600.4.70S.D.480...	1535
S2.90.200.1600.4.70S.H.480...	1680
S2.100.200.1150.4.70H.S.404...	1085
S2.100.200.1150.4.70H.C.404...	1225
S2.100.200.1150.4.70H.D.404...	1245
S2.100.200.1150.4.70H.H.404...	1390
S2.100.200.1600.4.70H.S.430...	1275
S2.100.200.1600.4.70H.C.430...	1440
S2.100.200.1600.4.70H.D.430...	1425
S2.100.200.1600.4.70H.H.430...	1570
S2.110.200.850.4.70M.S.375...	985
S2.110.200.850.4.70M.C.375...	1125
S2.110.200.850.4.70M.H.375...	1155
S2.110.200.850.4.70M.D.375...	1300
S2.110.200.1150.4.70M.S.416...	1090
S2.110.200.1150.4.70M.C.416...	1230
S2.110.200.1150.4.70M.H.416...	1250
S2.110.200.1150.4.70M.D.416...	1390
S2.110.200.1600.4.70M.S.441...	1245
S2.110.200.1600.4.70M.C.441...	1405
S2.110.200.1600.4.70M.H.441...	1425
S2.110.200.1600.4.70M.D.441...	1570
S2.105.250.650.8.70H.S.538...	1280
S2.105.250.650.8.70H.C.538...	1415
S2.105.250.650.8.70H.D.538...	1385
S2.105.250.650.8.70H.H.538...	1520
S2.120.250.800.6.70H.S.465...	1300
S2.120.250.800.6.70H.C.465...	1440
S2.120.250.800.6.70H.D.465...	1405
S2.120.250.800.6.70H.H.465...	1540
S2.120.250.1000.6.70H.S.500...	1295
S2.120.250.1000.6.70H.C.500...	1435
S2.120.250.1000.6.70H.D.500...	1405
S2.120.250.1000.6.70H.H.500...	1545
S2.120.250.1300.6.70H.S.528...	1480
S2.120.250.1300.6.70H.C.528...	1640
S2.120.250.1300.6.70H.D.528...	1600
S2.120.250.1300.6.70H.H.528...	1745
S2.120.250.1600.4.70L.S.402...	1380
S2.120.250.1600.4.70L.C.402...	1535
S2.120.250.1600.4.70L.D.402...	1480
S2.120.250.1600.4.70L.H.402...	1610
S3.110.500.650.8.70L.S.464...	1745
S3.110.500.650.8.70L.C.464...	1885
S3.110.500.650.8.70L.D.464...	1735
S3.110.500.650.8.70L.H.464...	1875
S3.110.500.800.6.70L.S.370...	1765
S3.110.500.800.6.70L.C.370...	1905
S3.110.500.800.6.70L.D.370...	1755
S3.110.500.800.6.70L.H.370...	1895
S3.110.500.1000.6.70L.S.402...	1765
S3.110.500.1000.6.70L.C.402...	1910
S3.110.500.1000.6.70L.D.402...	1755
S3.110.500.1000.6.70L.H.402...	1870
S3.110.500.1300.6.70L.S.442...	1945

Pump type	Weight [kg]
S3.110.500.1300.6.70L.C.442...	2105
S3.110.500.1300.6.70L.D.442...	1955
S3.110.500.1300.6.70L.H.442...	2095
S3.120.300.650.8.70M.S.464...	1375
S3.120.300.650.8.70M.C.464...	1520
S3.120.300.650.8.70M.D.464...	1430
S3.120.300.650.8.70M.H.464...	1560
S3.120.300.800.6.70M.S.407...	1280
S3.120.300.800.6.70M.C.407...	1425
S3.120.300.800.6.70M.D.407...	1335
S3.120.300.800.6.70M.H.407...	1520
S3.120.300.1000.6.70M.S.428...	1285
S3.120.300.1000.6.70M.C.428...	1425
S3.120.300.1000.6.70M.D.428...	1335
S3.120.300.1000.6.70M.H.428...	1460
S3.120.300.1300.6.70M.S.456...	1575
S3.120.300.1300.6.70M.C.456...	1735
S3.120.300.1300.6.70M.D.456...	1645
S3.120.300.1300.6.70M.H.456...	1785
S3.120.600.650.8.70E.S.459...	1995
S3.120.600.650.8.70E.C.459...	2135
S3.120.600.650.8.70E.D.459...	2020
S3.120.600.650.8.70E.H.459...	2155
S3.120.600.1000.6.70E.S.402...	2015
S3.120.600.1000.6.70E.C.402...	2155
S3.120.600.1000.6.70E.D.402...	2040
S3.120.600.1000.6.70E.H.402...	2175
S3.120.600.1300.6.70E.S.426...	2195
S3.120.600.1300.6.70E.C.426...	2355
S3.120.600.1300.6.70E.D.426...	2235
S3.120.600.1300.6.70E.H.426...	2375

14. Flange forces



The flange forces and moments are according to EN ISO 5199.

Forces can be found for both horizontal and vertical installations in table B.3 in EN ISO 5199, by selecting the correct flange dimension. Forces cannot be used directly for end-suction wastewater pumps without using a coefficient which can be found in table B.5 in EN ISO 5199 by selecting the correct pump family.

For Grundfos wastewater pumps, the pump families and coefficients are as stated below.

Horizontally installed pumps

Pump family A4 = Coefficient 0.35

Vertically installed pumps

Pump family 10A = Coefficient 0.30

TM06 4901 3115 - TM06 4903 3115 - TM06 4902 3115

Fig. 41 Pump characteristics

15. Grundfos Product Center

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

<http://product-selection.grundfos.com>

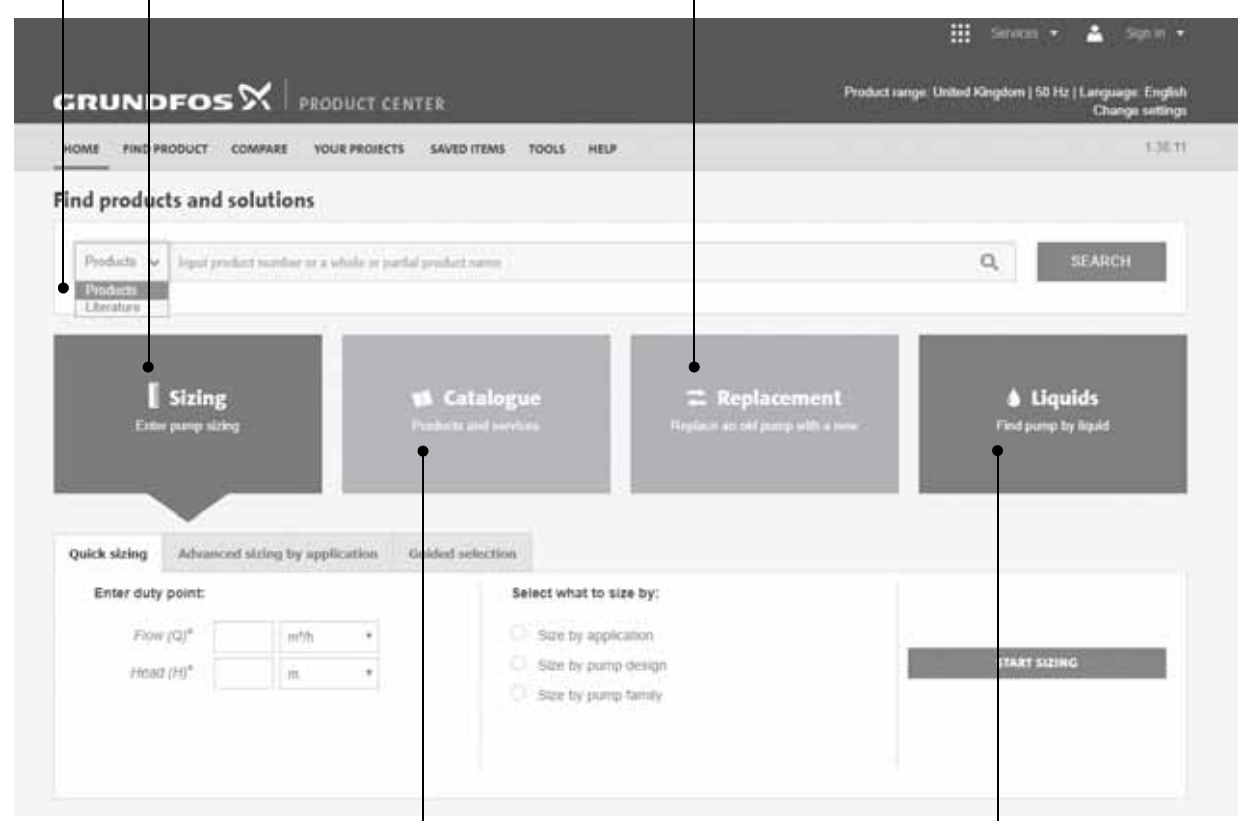


This drop-down menu enables you to set the search function to "Product" or "Literature".

"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 following:

- 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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