

Hydro-Unit Premium Line / Hydro-Unit Economy Line

Hydro-Unit Premium Line (DOL CC, VFD CM CC, VFD MM CC)

Hydro-Unit Premium Line (VFD MM, VFD MMe)

Hydro-Unit Economy Line (VFD MMe)



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Building Services: Water Supply

Pressure Booster Systems

HU Premium Line DOL CC, VFD CM CC, VFD MM CC



Main applications

- Pressure boosting

Fluids handled

- Drinking water
- Service water
- Cooling water
- Fluids not chemically or mechanically aggressive to the materials

Operating data

Operating properties

Characteristic		Value
Flow rate	Q [m³/h]	≤ 65,4 ¹⁾
	Q [l/s]	≤ 18,2 ¹⁾
Head	H [m]	≤ 134
Fluid temperature	T _{min.} [°C]	≥ 0
	T _{max.} [°C]	≤ +60
Operating pressure	p [bar]	≤ 16
Inlet pressure	p _{inl} [bar]	≤ 5 ²⁾

1) For a system with three pumps (without stand-by pump)
2) For higher inlet pressures contact the manufacturer.

Design details

Design

- Compact system mounted on a common base frame
- One or more vertical high-pressure pumps with variable speed system
- Hydraulic components made of stainless steel / brass for high operating reliability

Multiple pump system:

- Check valve per pump
- Discharge-side gate valve per pump
- Suction-side gate valve per pump

Hydro-Unit Premium Line DOL CC:

- Power contactor per pump

Hydro-Unit Premium Line VFD CM CC, VFD MM CC:

- One frequency inverter per pump

Installation

- Stationary dry installation

Drive

Hydro-Unit Premium Line DOL CC, VFD CM CC:

- Electric motor
- Efficiency class IE3 to IEC 60034-30

Hydro-Unit Premium Line VFD MM CC:

- Magnetless synchronous reluctance motor
- Efficiency class IE5 to IEC 60034-30
- Motor

Automation

- Control cabinet IP54
 - Sheet steel housing: colour RAL 7035
 - Megacontrol
 - Graphical display with operating panel
 - Three LEDs signalling the operating status
 - Lockable master switch (repair switch)
 - Motor protection switch per pump
 - Service interface for Servicetool

Designation

Example: Hydro-Unit Premium Line HU2 DPV2 /10 VFD CM CC

Designation key

Code	Description
HU	Type series
2	Number of pumps
DPV2	Pump size
10	Number of pump stages
VFD CM CC	Design
	DOL CC
	Fixed speed pressure booster system
	VFD CM CC
	Variable speed pressure booster system with Megacontrol pump control system, frequency inverter in the control cabinet
	VFD MM CC
	Variable speed pressure booster system with Megacontrol pump control system, frequency inverter mounted on the (IE5) motor

Configuration and function



Fig. 1: Hydro-Unit Premium Line

1	Control cabinet
2	Control panel
3	Vertical high-pressure pumps
4	Membrane-type accumulator
5	Manifold
6	Baseplate

Design

Fully automatic pressure booster system with two or three vertical high-pressure pumps (3) for ensuring the required supply pressure

Function

Hydro-Unit Premium Line DOL CC:

Either two or three pumps are controlled and monitored by a micro-processor control unit (Megacontrol). The first pump is started up when the pressure falls below the set start-up pressure. Additional pumps are sequenced in automatically in line with actual demand. When demand decreases, the pumps are sequenced out again as the stop pressure (start-up pressure + delta p) is reached. The pump that has been started up first will be stopped first. The pumps are automatically started up in a different order for each new cycle. The actual pressure is measured by an

analog pressure measuring device (pressure transmitter). The function of this pressure transmitter is monitored (live-zero). This ensures equal distribution of pump operating hours. If a duty pump fails, the next pump is started up immediately. A fault is output, which can be reported via volt-free contacts (e.g. to the control station).

The operating status is displayed via LEDs.

- Green: system ready for operation
- Yellow: warning
- Red: alert

2 volt-free contacts on terminals are provided for reporting warnings and alerts.

Hydro-Unit Premium Line VFD CM CC, VFD MM CC:

Either one or more pumps are controlled and monitored by a micro-processor control unit (Megacontrol). Each pump is operated on a frequency inverter and controlled by the control unit so as to ensure a constant discharge pressure of the pressure booster system.

As the demand increases or decreases, peak load pumps are started and stopped automatically. As soon as the demand increases again after one pump has been stopped, another pump which has not been in operation before is started up. When the last pump has been stopped and the demand increases again, the next pump in line is started up on a frequency inverter. The stand-by pump is also included in the alternating cycle.

The standard setting is for the pressure booster system to start automatically as a function of pressure. As long as the pressure booster system is in operation, the pumps are started and stopped as a function of demand (standard setting). In this way it is ensured that the individual pumps operate only in line with actual demand.

If the demand drops towards 0, the pressure booster system slowly runs down to the stop point.

The operating status is displayed via LEDs.

- Green: system ready for operation
- Yellow: warning
- Red: alert

2 volt-free contacts on terminals are provided for reporting warnings and alerts.

Materials

Overview of available materials

Component	Material
Pump casing	1.4308
Pump shroud	1.4301
Hydraulic system	1.4301
Mechanical seal	To EN 12756
Elastomer	EPDM
Baseplate	Steel, powder-coated

Component	Material
Shut-off valve	Brass, nickel-coated
Swing check valve	POM
Accumulator, connection	1.4401
Membrane	Approved for drinking water

Product benefits

- Suitable for drinking water; manufactured under stringent hygienic conditions
- Easy and fast commissioning of ready-to-connect, pre-assembled and tested system
- Corrosion resistance provided by powder-coated materials and stainless steel
- Integral dry running protection for reliable operation
- Remote monitoring of the system through connection to building management system

VFD CM CC, VFD MM CC

- Energy-efficient operation and constant pressure ensured by speed control of all pumps.

DOL CC

- Smart operating time calculation for energy-efficient operation without exceeding the maximum frequency of starts

Certifications

Overview

Label	Effective in:	Comment
	France	Approved in accordance with the French drinking water regulation
	United Kingdom	Approved in accordance with the UK drinking water regulation

Globe valves and swing check valve:

	Germany	Approved in accordance with German drinking water regulation
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Selection information

Selection example

Requirements:

Specified duty point at:

- Flow rate: 10 m³/h
- Head: 60 m
- Inlet pressure: 2 bar
- One pump as stand-by pump

Solution:

1. The inlet pressure of 2 bar (approx. 20 m) results in a required head of 40 m.

⇒ This results in the selection of a HU2 DPV10 /5 or HU3 DPV6 /5.

Technical data

Hydro-Unit Premium Line DOL CC

DOL CC = fixed speed pressure booster system with Megacontrol pump control system

3 × 400 V ± 10 %

Dry running protection = sensor

50 Hz

Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N [kW]	Motor efficiency class	I _N [A]	I _A /I _N	Frequency of starts [x/h]	I _{max} System [A]	I _{max} Overcurrent protection [A]	Sound pressure level [dB(A)]	Enclosure	p [bar]	PN	[kg]	Mat. No.
DOL CC	2	02	02	0,37	IE -	0,95	4,5	50	3,26	25	60	IP55	5	10	73	SD20020205010M
DOL CC	2	02	03	0,37	IE -	0,95	4,5	50	3,26	25	60	IP55	5	10	73	SD20020305010M
DOL CC	2	02	04	0,37	IE -	0,95	4,5	50	3,26	25	60	IP55	5	10	73	SD20020405010M
DOL CC	2	02	05	0,37	IE -	0,95	4,5	50	3,26	25	60	IP55	5	10	75	SD20020505010M
DOL CC	2	02	06	0,55	IE -	1,2	5,3	50	4	25	60	IP55	5	10	75	SD20020605010M
DOL CC	2	02	07	0,55	IE -	1,2	5,3	50	4	25	60	IP55	5	10	77	SD20020705010M
DOL CC	2	02	08	0,55	IE -	1,2	5,3	50	4	25	60	IP55	5	16	77	SD20020805010M
DOL CC	2	02	09	0,75	IE3	1,8	6,6	50	5,2	25	55	IP55	5	16	92	SD20020905010M
DOL CC	2	02	10	0,75	IE3	1,8	6,6	50	5,2	25	55	IP55	5	16	92	SD20021005010M
DOL CC	2	02	11	1,10	IE3	2,3	6,9	50	5,2	25	55	IP55	5	16	94	SD20021105010M
DOL CC	2	02	12	1,10	IE3	2,3	6,9	50	5,2	25	55	IP55	5	16	94	SD20021205010M
DOL CC	2	02	14	1,10	IE3	2,3	6,9	50	5,2	25	55	IP55	5	16	96	SD20021405010M
DOL CC	2	04	02	0,37	IE -	0,95	4,5	50	3,26	25	60	IP55	5	10	73	SD20040205010M
DOL CC	2	04	03	0,55	IE -	1,2	5,3	50	4	25	60	IP55	5	10	73	SD20040305010M
DOL CC	2	04	04	0,55	IE -	1,2	5,3	50	4	25	60	IP55	5	10	75	SD20040405010M
DOL CC	2	04	05	0,75	IE3	1,8	6,6	50	5,2	25	55	IP55	5	10	87	SD20040505010M
DOL CC	2	04	06	1,10	IE3	2,3	6,9	50	5,2	25	55	IP55	5	16	89	SD20040605010M
DOL CC	2	04	07	1,10	IE3	2,3	6,9	50	5,2	25	55	IP55	5	16	89	SD20040705010M
DOL CC	2	04	08	1,50	IE3	3	7,3	50	7	25	55	IP55	5	16	102	SD20040805010M
DOL CC	2	04	09	1,50	IE3	3	7,3	50	7	25	55	IP55	5	16	104	SD20040905010M
DOL CC	2	04	10	1,50	IE3	3	7,3	50	7	25	55	IP55	5	16	104	SD20041005010M
DOL CC	2	04	11	2,20	IE3	4,3	8,0	30	10	25	55	IP55	5	16	106	SD20041105010M
DOL CC	2	04	12	2,20	IE3	4,3	8,0	30	10	25	55	IP55	5	16	108	SD20041205010M
DOL CC	2	04	14	2,20	IE3	4,3	8,0	30	10	25	55	IP55	3,5	16	110	SD20041405010M
DOL CC	2	06	02	0,37	IE -	0,95	4,5	50	3,26	25	60	IP55	5	10	74	SD20060205010M
DOL CC	2	06	03	0,75	IE3	1,8	6,6	50	5,2	25	55	IP55	5	10	88	SD20060305010M
DOL CC	2	06	04	1,10	IE3	2,3	6,9	50	5,2	25	55	IP55	5	10	88	SD20060405010M
DOL CC	2	06	05	1,10	IE3	2,3	6,9	50	5,2	25	55	IP55	5	10	90	SD20060505010M
DOL CC	2	06	06	1,50	IE3	3	7,3	50	7	25	55	IP55	5	16	103	SD20060605010M
DOL CC	2	06	07	1,50	IE3	3	7,3	50	7	25	55	IP55	5	16	103	SD20060705010M
DOL CC	2	06	08	2,20	IE3	4,3	8,0	30	10	25	55	IP55	5	16	107	SD20060805010M
DOL CC	2	06	09	2,20	IE3	4,3	8,0	30	10	25	55	IP55	5	16	107	SD20060905010M
DOL CC	2	06	10	2,20	IE3	4,3	8,0	30	10	25	55	IP55	5	16	109	SD20061005010M
DOL CC	2	06	11	3,00	IE3	5,8	9,3	30	14	25	57	IP55	5	16	129	SD20061105010M
DOL CC	2	06	12	3,00	IE3	5,8	9,9	30	14	25	57	IP55	4	16	131	SD20061205010M
DOL CC	2	06	14	3,00	IE3	5,8	9,3	30	14	25	57	IP55	2,5	16	133	SD20061405010M
DOL CC	2	10	02	0,75	IE3	1,8	6,6	50	5,2	25	55	IP55	5	10	113	SD20100205010M
DOL CC	2	10	03	1,10	IE3	2,3	6,9	50	5,2	25	55	IP55	5	10	119	SD20100305010M
DOL CC	2	10	04	1,50	IE3	3	7,3	50	7	25	55	IP55	5	10	130	SD20100405010M
DOL CC	2	10	05	2,20	IE3	4,3	8,0	30	10	25	55	IP55	5	16	138	SD20100505010M
DOL CC	2	10	06	2,20	IE3	4,3	8,0	30	10	25	55	IP55	5	16	138	SD20100605010M
DOL CC	2	10	07	3,00	IE3	5,8	9,3	30	14	25	57	IP55	5	16	156	SD20100705010M
DOL CC	2	10	08	3,00	IE3	5,8	9,3	30	14	25	57	IP55	5	16	158	SD20100805010M
DOL CC	2	10	09	4,00	IE3	7,4	8,4	30	14	40	58	IP55	5	16	172	SD20100905010M
DOL CC	2	10	10	4,00	IE3	7,4	8,4	30	14	40	58	IP55	4,5	16	174	SD20101005010M
DOL CC	2	10	11	4,00	IE3	7,4	8,4	30	14	40	58	IP55	3,5	16	176	SD20101105010M
DOL CC	2	15	02	2,20	IE3	4,3	8,0	30	10	25	55	IP55	5	10	136	SD20150205010M



Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N	Motor efficiency class	I _N	I _N /I _N	Frequency of starts	I _{max} System	I _{max} Overcurrent protection	Sound pressure level	Enclosure	p	PN	[kg]	Mat. No.
				[kW]		[A]		[x/h]								
DOL CC	2	15	03	3,00	IE3	5,8	9,3	30	14	25	57	IP55	5	10	154	SD20150305010M
DOL CC	2	15	04	4,00	IE3	7,4	8,4	30	14	40	58	IP55	5	16	166	SD20150405010M
DOL CC	3	02	02	0,37	IE -	0,95	4,5	50	4,89	25	60	IP55	5	10	98	SD30020205010M
DOL CC	3	02	03	0,37	IE -	0,95	4,5	50	4,89	25	60	IP55	5	10	98	SD30020305010M
DOL CC	3	02	04	0,37	IE -	0,95	4,5	50	4,89	25	60	IP55	5	10	98	SD30020405010M
DOL CC	3	02	05	0,37	IE -	0,95	4,5	50	4,89	25	60	IP55	5	10	101	SD30020505010M
DOL CC	3	02	06	0,55	IE -	1,2	5,3	50	6	25	60	IP55	5	10	101	SD30020605010M
DOL CC	3	02	07	0,55	IE -	1,2	5,3	50	6	25	60	IP55	5	10	104	SD30020705010M
DOL CC	3	02	08	0,55	IE -	1,2	5,3	50	6	25	60	IP55	5	16	104	SD30020805010M
DOL CC	3	02	09	0,75	IE3	1,8	6,6	50	7,8	25	55	IP55	5	16	126	SD30020905010M
DOL CC	3	02	10	0,75	IE3	1,8	6,6	50	7,8	25	55	IP55	5	16	126	SD30021005010M
DOL CC	3	02	11	1,10	IE3	2,3	6,9	50	7,8	25	55	IP55	5	16	129	SD30021105010M
DOL CC	3	02	12	1,10	IE3	2,3	6,9	50	7,8	25	55	IP55	5	16	129	SD30021205010M
DOL CC	3	02	14	1,10	IE3	2,3	6,9	50	7,8	25	55	IP55	5	16	132	SD30021405010M
DOL CC	3	04	02	0,37	IE -	0,95	4,5	50	4,89	25	60	IP55	5	10	98	SD30040205010M
DOL CC	3	04	03	0,55	IE -	1,2	5,3	50	6	25	60	IP55	5	10	98	SD30040305010M
DOL CC	3	04	04	0,55	IE -	1,2	5,3	50	6	25	60	IP55	5	10	101	SD30040405010M
DOL CC	3	04	05	0,75	IE3	1,8	6,6	50	7,8	25	55	IP55	5	10	119	SD30040505010M
DOL CC	3	04	06	1,10	IE3	2,3	6,9	50	7,8	25	55	IP55	5	16	122	SD30040605010M
DOL CC	3	04	07	1,10	IE3	2,3	6,9	50	7,8	25	55	IP55	5	16	122	SD30040705010M
DOL CC	3	04	08	1,50	IE3	3	7,3	50	10,5	25	55	IP55	5	16	141	SD30040805010M
DOL CC	3	04	09	1,50	IE3	3	7,3	50	10,5	25	55	IP55	5	16	144	SD30040905010M
DOL CC	3	04	10	1,50	IE3	3	7,3	50	10,5	25	55	IP55	5	16	144	SD30041005010M
DOL CC	3	04	11	2,20	IE3	4,3	8,0	30	15	25	55	IP55	5	16	147	SD30041105010M
DOL CC	3	04	12	2,20	IE3	4,3	8,0	30	15	25	55	IP55	5	16	150	SD30041205010M
DOL CC	3	04	14	2,20	IE3	4,3	8,0	30	15	25	55	IP55	3,5	16	153	SD30041405010M
DOL CC	3	06	02	0,37	IE -	0,95	4,5	50	4,89	25	60	IP55	5	10	100	SD30060205010M
DOL CC	3	06	03	0,75	IE3	1,8	6,6	50	7,8	25	55	IP55	5	10	121	SD30060305010M
DOL CC	3	06	04	1,10	IE3	2,3	6,9	50	7,8	25	55	IP55	5	10	121	SD30060405010M
DOL CC	3	06	05	1,10	IE3	2,3	6,9	50	7,8	25	55	IP55	5	10	124	SD30060505010M
DOL CC	3	06	06	1,50	IE3	3	7,3	50	10,5	25	55	IP55	5	16	143	SD30060605010M
DOL CC	3	06	07	1,50	IE3	3	7,3	50	10,5	25	55	IP55	5	16	143	SD30060705010M
DOL CC	3	06	08	2,20	IE3	4,3	8,0	30	15	25	55	IP55	5	16	149	SD30060805010M
DOL CC	3	06	09	2,20	IE3	4,3	8,0	30	15	25	55	IP55	5	16	149	SD30060905010M
DOL CC	3	06	10	2,20	IE3	4,3	8,0	30	15	25	55	IP55	5	16	152	SD30061005010M
DOL CC	3	06	11	3,00	IE3	5,8	9,3	30	21	25	57	IP55	5	16	182	SD30061105010M
DOL CC	3	06	12	3,00	IE3	5,8	9,3	30	21	25	57	IP55	4	16	185	SD30061205010M
DOL CC	3	06	14	3,00	IE3	5,8	9,3	30	21	25	57	IP55	2,5	16	188	SD30061405010M
DOL CC	3	10	02	0,75	IE3	1,8	6,6	50	7,8	25	55	IP55	5	10	158	SD30100205010M
DOL CC	3	10	03	1,10	IE3	2,3	6,9	50	7,8	25	55	IP55	5	10	167	SD30100305010M
DOL CC	3	10	04	1,50	IE3	3	7,3	50	10,5	25	55	IP55	5	10	183	SD30100405010M
DOL CC	3	10	05	2,20	IE3	4,3	8,0	30	15	25	55	IP55	5	16	195	SD30100505010M
DOL CC	3	10	06	2,20	IE3	4,3	8,0	30	15	25	55	IP55	5	16	195	SD30100605010M
DOL CC	3	10	07	3,00	IE3	5,8	9,3	30	21	25	57	IP55	5	16	222	SD30100705010M
DOL CC	3	10	08	3,00	IE3	5,8	9,3	30	21	25	57	IP55	5	16	225	SD30100805010M
DOL CC	3	10	09	4,00	IE3	7,4	8,4	30	21	40	58	IP55	5	16	246	SD30100905010M
DOL CC	3	10	10	4,00	IE3	7,4	8,4	30	21	40	58	IP55	4,5	16	249	SD30101005010M
DOL CC	3	10	11	4,00	IE3	7,4	8,4	30	21	40	58	IP55	3,5	16	252	SD30101105010M
DOL CC	3	15	02	2,20	IE3	4,3	8,0	30	15	25	55	IP55	5	10	192	SD30150205010M
DOL CC	3	15	03	3,00	IE3	5,8	9,3	30	21	25	57	IP55	5	10	219	SD30150305010M
DOL CC	3	15	04	4,00	IE3	7,4	8,4	30	21	40	58	IP55	5	16	237	SD30150405010M

Hydro-Unit Premium Line VFD CM CC

VFD CM CC = pressure booster system with variable speed system in the control cabinet

3 × 400 V ± 10 %

Dry running protection = sensor

50 Hz

Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N [kW]	Motor efficiency class	I _N [A]	I _A /I _N	Frequency of starts [x/h]	I _{max} System [A]	I _{max} Overcurrent protection [A]	Sound pressure level [dB(A)]	Enclosure	p [bar]	PN	[kg]	Mat. No.
VFD CM CC	2	02	05	0,37	IE -	0,95	-	50	4,4	25	60	IP55	5	10	91	SD20020505012M
VFD CM CC	2	02	08	0,55	IE -	1,2	-	50	5,2	25	60	IP55	5	16	93	SD20020805012M
VFD CM CC	2	02	10	0,75	IE3	1,8	-	50	6,2	25	55	IP55	5	16	109	SD20021005012M
VFD CM CC	2	02	14	1,10	IE3	2,3	-	50	7,2	25	55	IP55	5	16	113	SD20021405012M
VFD CM CC	2	04	02	0,37	IE -	0,95	-	50	4,4	25	60	IP55	5	10	89	SD20040205012M
VFD CM CC	2	04	04	0,55	IE -	1,2	-	50	5,2	25	60	IP55	5	10	91	SD20040405012M
VFD CM CC	2	04	05	0,75	IE3	1,8	-	50	6,2	25	55	IP55	5	10	103	SD20040505012M
VFD CM CC	2	04	07	1,10	IE3	2,3	-	50	7,2	25	55	IP55	5	16	105	SD20040705012M
VFD CM CC	2	04	10	1,50	IE3	3	-	50	9	25	55	IP55	5	16	121	SD20041005012M
VFD CM CC	2	04	14	2,20	IE3	4,3	-	30	11,4	25	55	IP55	3,5	16	127	SD20041405012M
VFD CM CC	2	06	02	0,37	IE -	0,95	-	50	4,4	25	60	IP55	5	10	90	SD20060205012M
VFD CM CC	2	06	03	0,75	IE3	1,8	-	50	6,2	25	55	IP55	5	10	104	SD20060305012M
VFD CM CC	2	06	05	1,10	IE3	2,3	-	50	7,2	25	55	IP55	5	10	106	SD20060505012M
VFD CM CC	2	06	07	1,50	IE3	3	-	50	9	25	55	IP55	5	16	120	SD20060705012M
VFD CM CC	2	06	10	2,20	IE3	4,3	-	30	11,4	25	55	IP55	5	16	126	SD20061005012M
VFD CM CC	2	10	02	0,75	IE3	1,8	-	50	6,2	25	55	IP55	5	10	129	SD20100205012M
VFD CM CC	2	10	03	1,10	IE3	2,3	-	50	7,2	25	55	IP55	5	10	135	SD20100305012M
VFD CM CC	2	10	04	1,50	IE3	3	-	50	9	25	55	IP55	5	10	147	SD20100405012M
VFD CM CC	2	10	06	2,20	IE3	4,3	-	30	11,4	25	55	IP55	5	16	155	SD20100605012M
VFD CM CC	3	02	05	0,37	IE -	0,95	-	50	6,6	25	60	IP55	5	10	119	SD30020505012M
VFD CM CC	3	02	08	0,55	IE -	1,2	-	50	7,8	25	60	IP55	5	16	122	SD30020805012M
VFD CM CC	3	02	10	0,75	IE3	1,8	-	50	9,3	25	55	IP55	5	16	146	SD30021005012M
VFD CM CC	3	02	14	1,10	IE3	2,3	-	50	10,8	25	55	IP55	5	16	152	SD30021405012M
VFD CM CC	3	04	02	0,37	IE -	0,95	-	50	6,6	25	60	IP55	5	10	116	SD30040205012M
VFD CM CC	3	04	04	0,55	IE -	1,2	-	50	7,8	25	60	IP55	5	10	119	SD30040405012M
VFD CM CC	3	04	05	0,75	IE3	1,8	-	50	9,3	25	55	IP55	5	10	137	SD30040505012M
VFD CM CC	3	04	07	1,10	IE3	2,3	-	50	10,8	25	55	IP55	5	16	140	SD30040705012M
VFD CM CC	3	04	10	1,50	IE3	3	-	50	13,5	25	55	IP55	5	16	164	SD30041005012M
VFD CM CC	3	04	14	2,20	IE3	4,3	-	30	17,1	25	55	IP55	3,5	16	173	SD30041405012M
VFD CM CC	3	06	02	0,37	IE -	0,95	-	50	6,6	25	60	IP55	5	10	118	SD30060205012M
VFD CM CC	3	06	03	0,75	IE3	1,8	-	50	9,3	25	55	IP55	5	10	139	SD30060305012M
VFD CM CC	3	06	05	1,10	IE3	2,3	-	50	10,8	25	55	IP55	5	10	142	SD30060505012M
VFD CM CC	3	06	07	1,50	IE3	3	-	50	13,5	25	55	IP55	5	16	163	SD30060705012M
VFD CM CC	3	06	10	2,20	IE3	4,3	-	30	17,1	25	55	IP55	5	16	172	SD30061005012M
VFD CM CC	3	10	02	0,75	IE3	1,8	-	50	9,3	25	55	IP55	5	10	177	SD30100205012M
VFD CM CC	3	10	03	1,10	IE3	2,3	-	50	10,8	25	55	IP55	5	10	186	SD30100305012M
VFD CM CC	3	10	04	1,50	IE3	3	-	50	13,5	25	55	IP55	5	10	203	SD30100405012M
VFD CM CC	3	10	06	2,20	IE3	4,3	-	30	17,1	25	55	IP55	5	16	215	SD30100605012M

Hydro-Unit Premium Line VFD MM CC

VFD MM CC = variable speed pressure booster system with Megacontrol pump control system, frequency inverter mounted on the (IE5) motor

3 × 400 V ± 10 %

Dry running protection = sensor

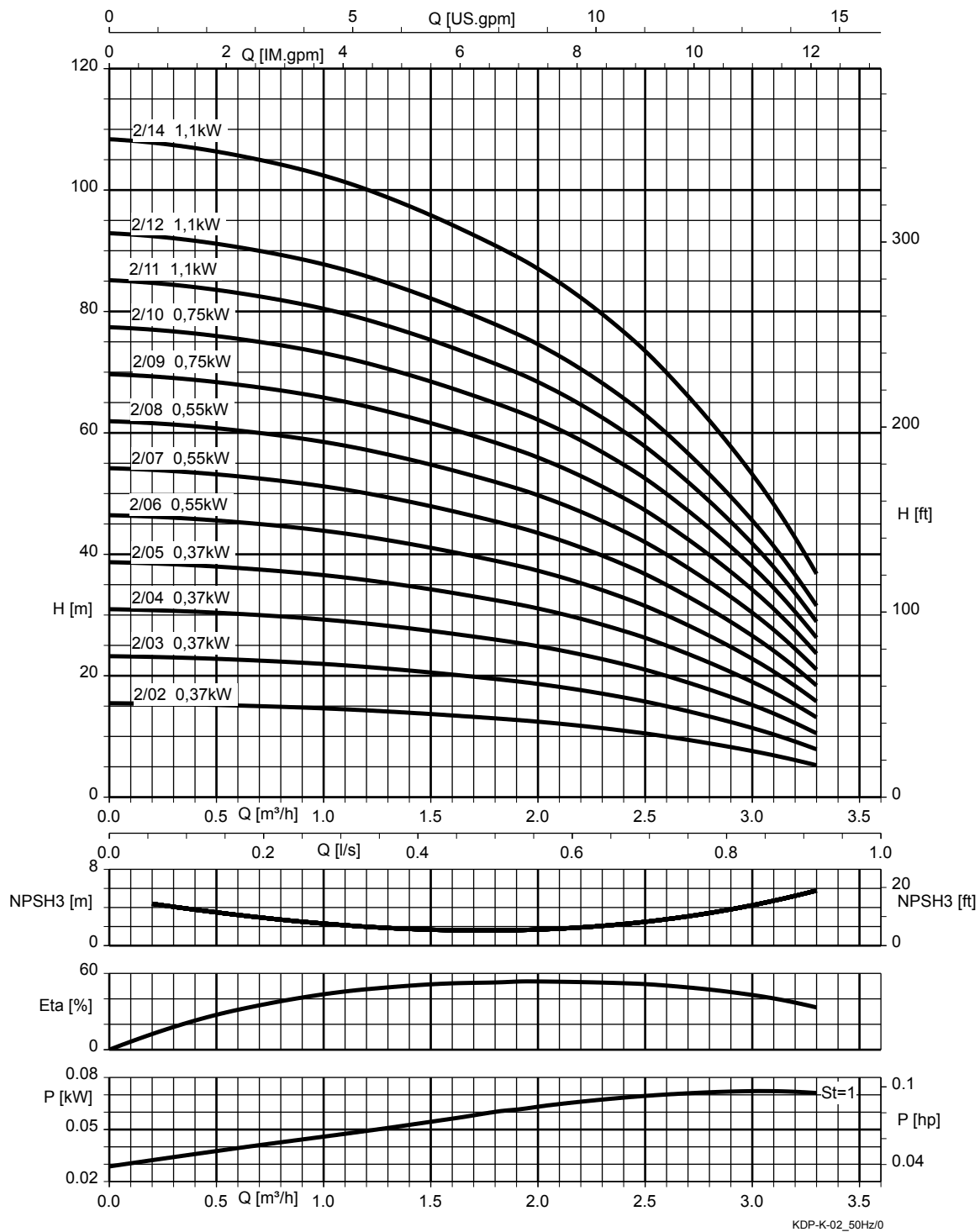
50 Hz

Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N [kW]	Motor efficiency class	I _N [A]	I _A /I _N	Frequency of starts [x/h]	I _{max} System [A]	I _{max} Overcurrent protection [A]	Sound pressure level [dB(A)]	Enclosure	p [bar]	PN	[kg]	Mat. No.
VFD MM CC	2	02	05	0,37	IE5	1,3	-	-	4,8	25	70	IP55	5	10	84	SD20020505013M
VFD MM CC	2	02	08	0,55	IE5	1,6	-	-	6	25	70	IP55	5	16	84	SD20020805013M
VFD MM CC	2	02	10	0,75	IE5	2,1	-	-	7,4	25	70	IP55	5	16	100	SD20021005013M
VFD MM CC	2	02	14	1,10	IE5	3	-	-	9,4	25	70	IP55	5	16	103	SD20021405013M
VFD MM CC	2	04	02	0,37	IE5	1,3	-	-	4,8	25	70	IP55	5	10	82	SD20040205013M
VFD MM CC	2	04	04	0,55	IE5	1,6	-	-	6	25	70	IP55	5	10	82	SD20040405013M
VFD MM CC	2	04	05	0,75	IE5	2,1	-	-	7,4	25	70	IP55	5	10	95	SD20040505013M
VFD MM CC	2	04	07	1,10	IE5	3	-	-	9,4	25	70	IP55	5	16	97	SD20040705013M
VFD MM CC	2	04	10	1,50	IE5	4,1	-	-	12,4	25	70	IP55	5	16	104	SD20041005013M
VFD MM CC	2	04	14	2,20	IE5	5,6	-	-	14,6	25	70	IP55	3,5	16	112	SD20041405013M
VFD MM CC	2	06	02	0,37	IE5	1,3	-	-	4,8	25	70	IP55	5	10	83	SD20060205013M
VFD MM CC	2	06	03	0,75	IE5	2,1	-	-	7,4	25	70	IP55	5	10	96	SD20060305013M
VFD MM CC	2	06	05	1,10	IE5	3	-	-	9,4	25	70	IP55	5	10	97	SD20060505013M
VFD MM CC	2	06	07	1,50	IE5	4,1	-	-	12,4	25	70	IP55	5	16	104	SD20060705013M
VFD MM CC	2	06	10	2,20	IE5	5,6	-	-	14,6	25	70	IP55	5	16	113	SD20061005013M
VFD MM CC	2	06	14	3,00	IE5	7,6	-	-	18,8	25	71	IP55	2,5	16	134	SD20061405013M
VFD MM CC	2	10	02	0,75	IE5	2,1	-	-	7,4	25	70	IP55	5	10	121	SD20100205013M
VFD MM CC	2	10	03	1,10	IE5	3	-	-	9,4	25	70	IP55	5	10	126	SD20100305013M
VFD MM CC	2	10	04	1,50	IE5	4,1	-	-	12,4	25	70	IP55	5	10	131	SD20100405013M
VFD MM CC	2	10	06	2,20	IE5	5,6	-	-	14,6	25	70	IP55	5	16	142	SD20100605013M
VFD MM CC	2	10	08	3,00	IE5	7,6	-	-	18,8	25	71	IP55	5	16	159	SD20100805013M
VFD MM CC	2	10	11	4,00	IE5	9,4	-	-	22,8	40	71	IP55	3,5	16	192	SD20101105013M
VFD MM CC	2	15	02	2,20	IE5	5,6	-	-	14,6	25	70	IP55	5	10	140	SD20150205013M
VFD MM CC	2	15	03	3,00	IE5	7,6	-	-	18,8	25	71	IP55	5	10	155	SD20150305013M
VFD MM CC	2	15	04	4,00	IE5	9,4	-	-	22,8	40	71	IP55	5	16	183	SD20150405013M
VFD MM CC	2	15	06	5,50	IE5	12,5	-	-	31,2	25	71	IP55	5	16	197	SD20150605013M
VFD MM CC	2	15	08	7,50	IE5	16,7	-	-	39,4	40	71	IP55	4,5	16	197	SD20150805013M
VFD MM CC	3	02	05	0,37	IE5	1,3	-	-	7,2	25	70	IP55	5	10	115	SD30020505013M
VFD MM CC	3	02	08	0,55	IE5	1,6	-	-	9	25	70	IP55	5	16	116	SD30020805013M
VFD MM CC	3	02	10	0,75	IE5	2,1	-	-	11,1	25	70	IP55	5	16	138	SD30021005013M
VFD MM CC	3	02	14	1,10	IE5	3	-	-	14,1	25	70	IP55	5	16	143	SD30021405013M
VFD MM CC	3	04	02	0,37	IE5	1,3	-	-	7,2	25	70	IP55	5	10	112	SD30040205013M
VFD MM CC	3	04	04	0,55	IE5	1,6	-	-	9	25	70	IP55	5	10	113	SD30040405013M
VFD MM CC	3	04	05	0,75	IE5	2,1	-	-	11,1	25	70	IP55	5	10	131	SD30040505013M
VFD MM CC	3	04	07	1,10	IE5	3	-	-	14,1	25	70	IP55	5	16	134	SD30040705013M
VFD MM CC	3	04	10	1,50	IE5	4,1	-	-	18,6	25	70	IP55	5	16	145	SD30041005013M
VFD MM CC	3	04	14	2,20	IE5	5,6	-	-	21,9	25	70	IP55	3,5	16	156	SD30041405013M
VFD MM CC	3	06	02	0,37	IE5	1,3	-	-	7,2	25	70	IP55	5	10	114	SD30060205013M
VFD MM CC	3	06	03	0,75	IE5	2,1	-	-	11,1	25	70	IP55	5	10	133	SD30060305013M
VFD MM CC	3	06	05	1,10	IE5	3	-	-	14,1	25	70	IP55	5	10	135	SD30060505013M
VFD MM CC	3	06	07	1,50	IE5	4,1	-	-	18,6	25	70	IP55	5	16	144	SD30060705013M
VFD MM CC	3	06	10	2,20	IE5	5,6	-	-	21,9	25	70	IP55	5	16	158	SD30061005013M
VFD MM CC	3	06	14	3,00	IE5	7,6	-	-	28,2	25	71	IP55	2,5	16	190	SD30061405013M
VFD MM CC	3	10	02	0,75	IE5	2,1	-	-	11,1	25	70	IP55	5	10	170	SD30100205013M
VFD MM CC	3	10	03	1,10	IE5	3	-	-	14,1	25	70	IP55	5	10	178	SD30100305013M
VFD MM CC	3	10	04	1,50	IE5	4,1	-	-	18,6	25	70	IP55	5	10	185	SD30100405013M
VFD MM CC	3	10	06	2,20	IE5	5,6	-	-	21,9	25	70	IP55	5	16	201	SD30100605013M
VFD MM CC	3	10	08	3,00	IE5	7,6	-	-	28,2	25	71	IP55	5	16	227	SD30100805013M

Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N [kW]	Motor efficiency class	I _N [A]	I _A /I _N	Frequency of starts [x/h]	I _{max} System [A]	I _{max} Overcurrent protection [A]	Sound pressure level [dB(A)]	Enclosure	p [bar]	PN	[kg]	Mat. No.
VFD MM CC	3	10	11	4,00	IE5	9,4	-	-	34,2	40	71	IP55	3,5	16	277	SD30101105013M
VFD MM CC	3	15	02	2,20	IE5	5,6	-	-	21,9	25	70	IP55	5	10	198	SD30150205013M
VFD MM CC	3	15	03	3,00	IE5	7,6	-	-	28,2	25	71	IP55	5	10	221	SD30150305013M
VFD MM CC	3	15	04	4,00	IE5	9,4	-	-	34,2	40	71	IP55	5	16	262	SD30150405013M
VFD MM CC	3	15	06	5,50	IE5	12,5	-	-	46,8	25	71	IP55	5	16	279	SD30150605013M
VFD MM CC	3	15	08	7,50	IE5	16,7	-	-	59,1	40	71	IP55	4,5	16	279	SD30150805013M

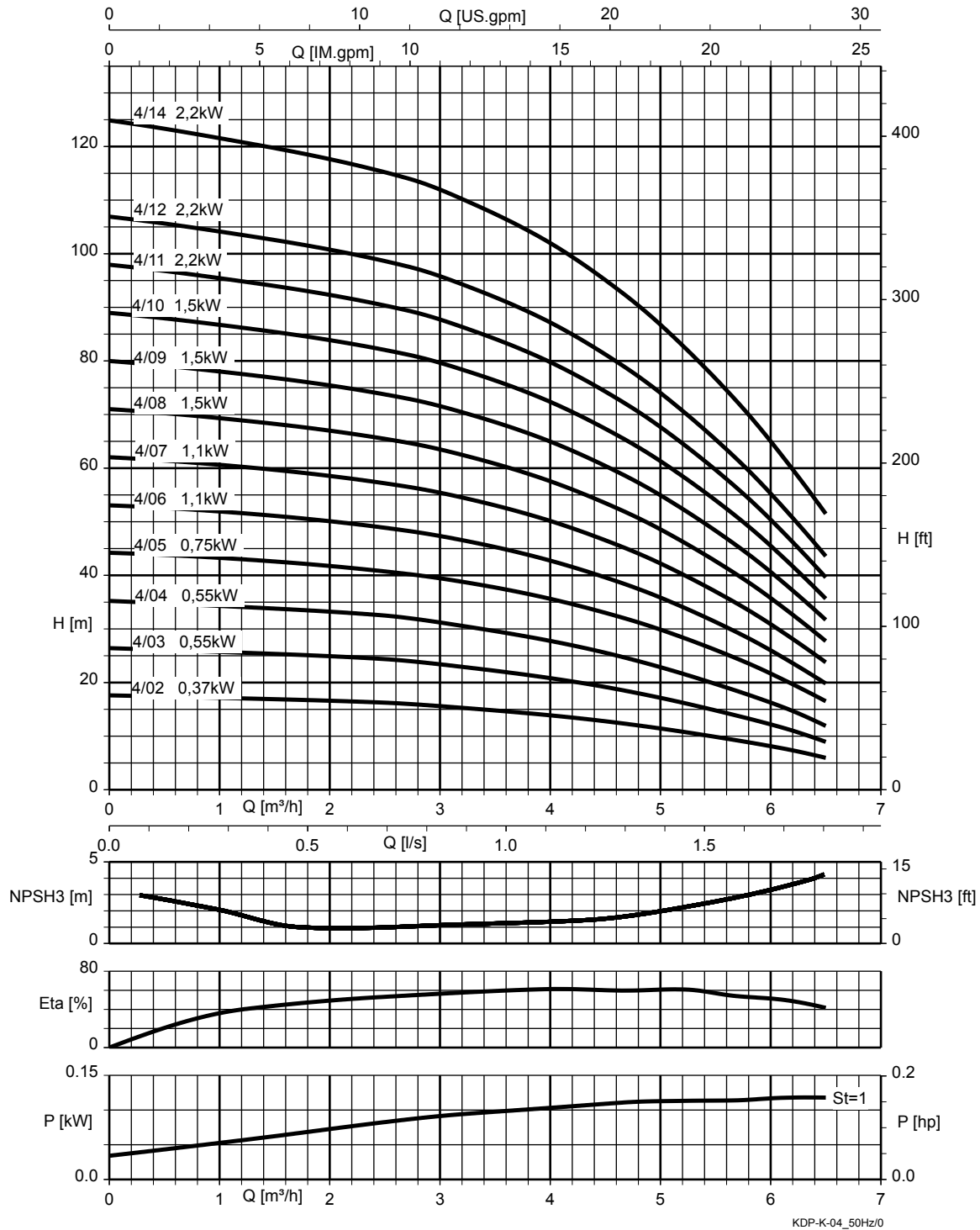
Characteristic curves

Hydro-Unit Premium Line DPV2, n = 2900 rpm



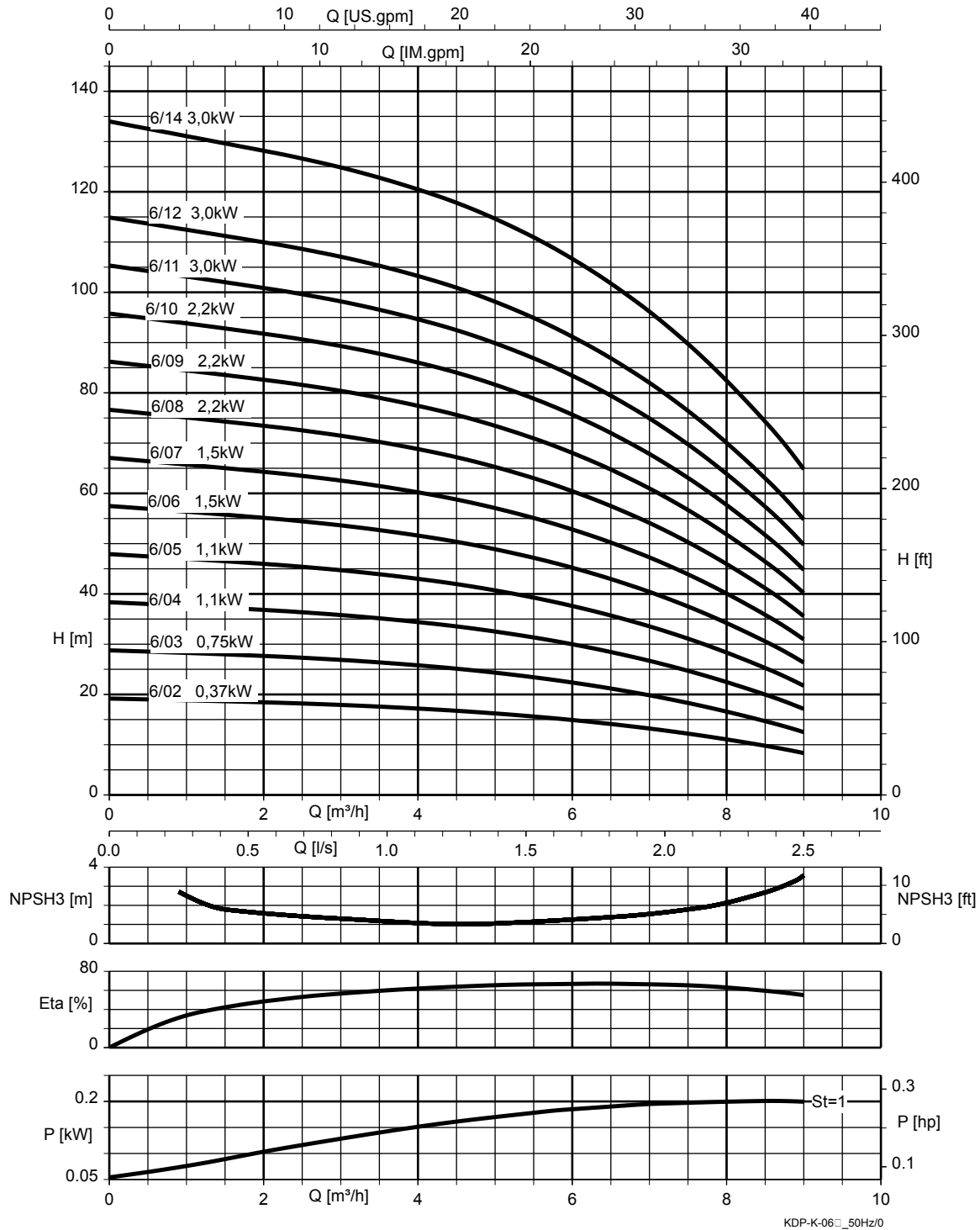
St = 1 | P per stage

Hydro-Unit Premium Line DPV4, n = 2900 rpm



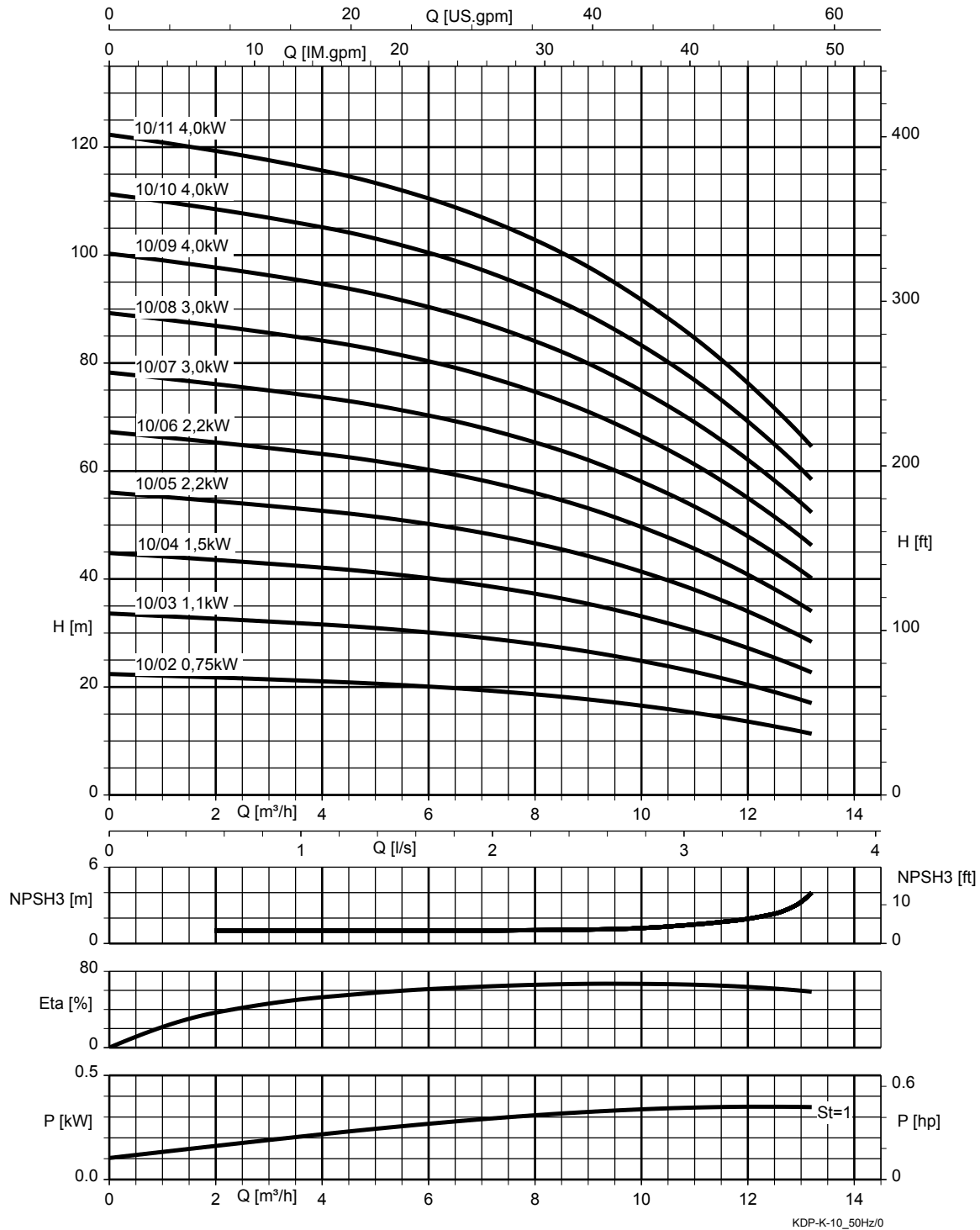
St = 1 | P per stage

Hydro-Unit Premium Line DPV6, n = 2900 rpm



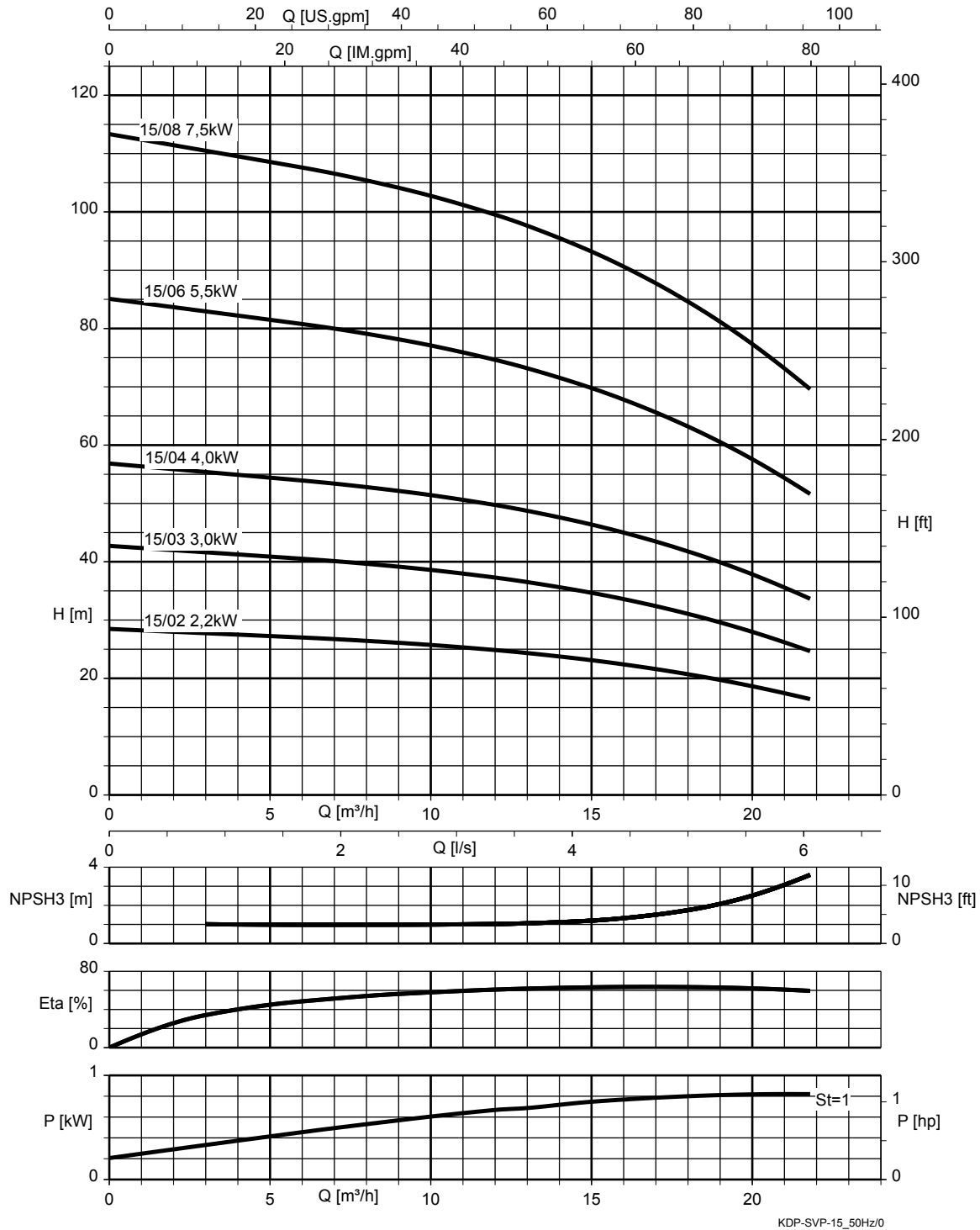
St = 1 | P per stage

Hydro-Unit Premium Line DPV10, n = 2900 rpm



St = 1 | P per stage

Hydro-Unit Premium Line DPV15, n = 2900 rpm



St = 1 | P per stage

Dimensions and connections

HU2 DPV DOL CC

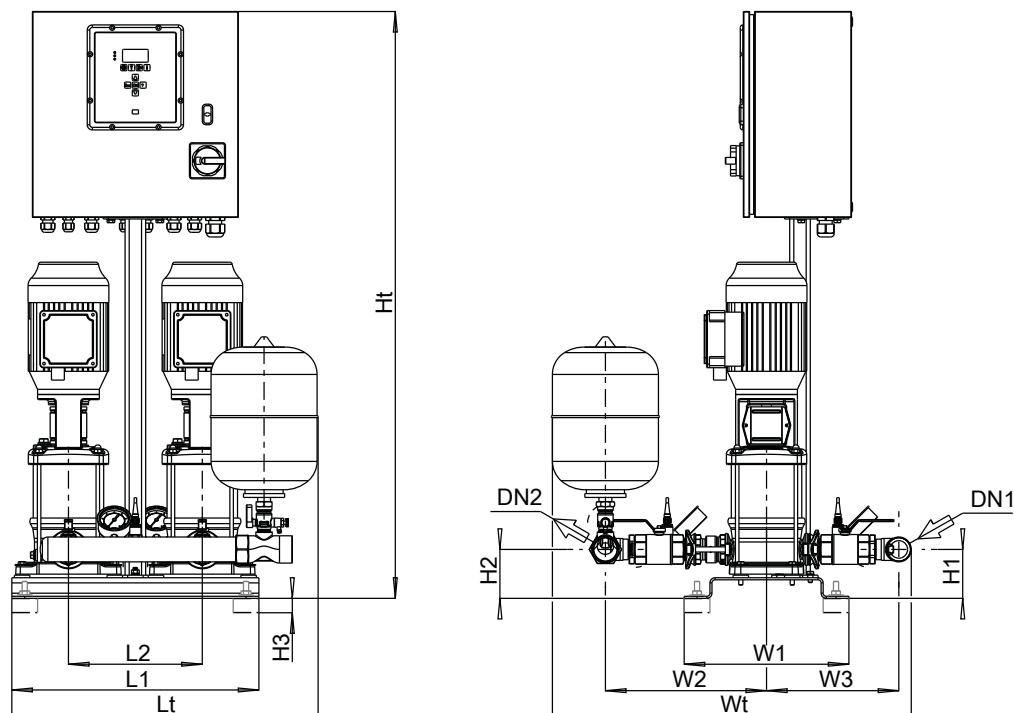


Fig. 2: Dimensions

Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
2	02	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	02	03	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	02	04	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	02	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	02	06	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	02	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	02	08	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	02	09	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	02	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	02	11	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	02	12	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	02	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	04	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	04	03	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	04	04	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	04	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	04	06	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	04	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	04	08	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	04	09	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	04	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	04	11	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	04	12	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	04	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	06	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	305	249	683
2	06	03	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	305	249	683
2	06	04	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	305	249	683
2	06	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	305	249	683



Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
2	06	06	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	06	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	06	08	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	06	09	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	06	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	06	11	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	06	12	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	06	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	10	02	G 2	G 2	640	340	740	125	125	1140	360	373	297	805
2	10	03	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	04	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	05	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	06	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	07	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	08	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	09	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	10	G 2	G 2	640	340	740	125	125	1690	360	373	297	805
2	10	11	G 2	G 2	640	340	740	125	125	1690	360	373	297	805
2	15	02	PN 16	PN 16	640	340	715	125	125	1440	360	408	332	938
2	15	03	PN 16	PN 16	640	340	715	125	125	1440	360	408	332	938
2	15	04	PN 16	PN 16	640	340	715	125	125	1440	360	408	332	938

HU3 DPV DOL CC

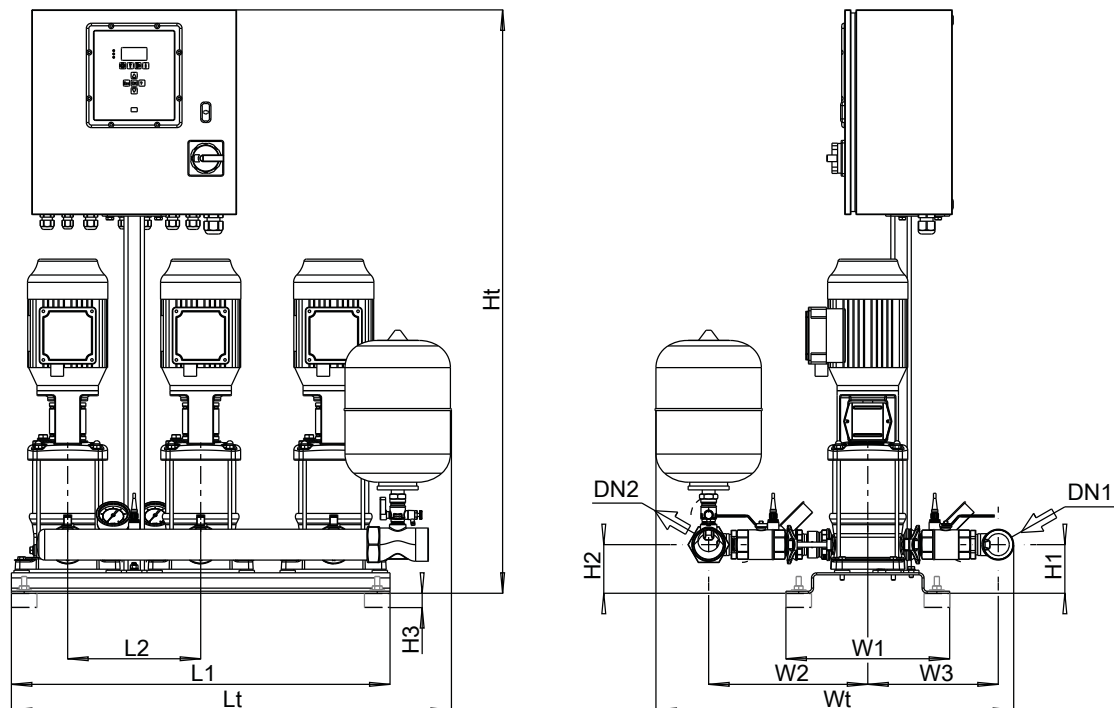


Fig. 3: Dimensions

Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
3	02	02	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	02	03	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	02	04	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	02	05	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	02	06	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	02	07	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	02	08	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	02	09	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	02	10	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	02	11	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	02	12	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	02	14	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	04	02	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	04	03	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	04	04	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	04	05	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	04	06	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	04	07	G 1 1/2	G 1 1/2	740	260	855	95	95	1140	320	291	235	655
3	04	08	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	04	09	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	04	10	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	04	11	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	04	12	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	04	14	G 1 1/2	G 1 1/2	740	260	855	95	95	1440	320	291	235	655
3	06	02	G 2	G 2	740	260	855	95	95	1140	320	311	255	701
3	06	03	G 2	G 2	740	260	855	95	95	1140	320	311	255	701
3	06	04	G 2	G 2	740	260	855	95	95	1140	320	311	255	701
3	06	05	G 2	G 2	740	260	855	95	95	1140	320	311	255	701
3	06	06	G 2	G 2	740	260	855	95	95	1440	320	311	255	701
3	06	07	G 2	G 2	740	260	855	95	95	1440	320	311	255	701
3	06	08	G 2	G 2	740	260	855	95	95	1440	320	311	255	701

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
3	06	09	G 2	G 2	740	260	855	95	95	1440	320	311	255	701
3	06	10	G 2	G 2	740	260	855	95	95	1440	320	311	255	701
3	06	11	G 2	G 2	740	260	855	95	95	1440	320	311	255	701
3	06	12	G 2	G 2	740	260	855	95	95	1440	320	311	255	701
3	06	14	G 2	G 2	740	260	855	95	95	1440	320	311	255	701
3	10	02	G 2	G 2	980	340	1080	125	125	1140	360	373	297	805
3	10	03	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	04	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	05	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	06	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	07	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	08	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	09	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	10	G 2	G 2	980	340	1080	125	125	1690	360	373	297	805
3	10	11	G 2	G 2	980	340	1080	125	125	1690	360	373	297	805
3	15	02	PN 16	PN 16	980	340	1055	125	125	1440	360	408	332	938
3	15	03	PN 16	PN 16	980	340	1055	125	125	1440	360	408	332	938
3	15	04	PN 16	PN 16	980	340	1055	125	125	1440	360	408	332	938

HU2 DPV VFD CM CC

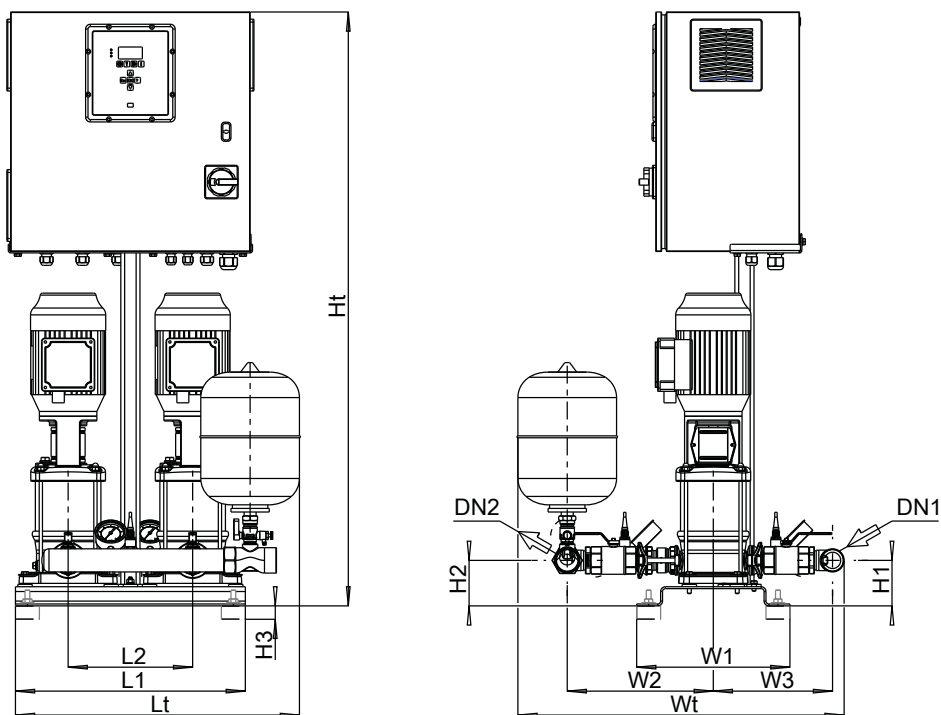


Fig. 4: Dimensions

Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
2	02	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1240	320	291	235	655
2	02	08	G 1 1/2	G 1 1/2	480	260	595	95	95	1540	320	291	235	655
2	02	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1540	320	291	235	655
2	02	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1540	320	291	235	655
2	04	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1240	320	291	235	655
2	04	04	G 1 1/2	G 1 1/2	480	260	595	95	95	1240	320	291	235	655
2	04	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1240	320	291	235	655



Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
2	04	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1540	320	291	235	655
2	04	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1540	320	291	235	655
2	04	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1540	320	291	235	655
2	06	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1240	320	305	249	683
2	06	03	G 1 1/2	G 1 1/2	480	260	595	95	95	1240	320	305	249	683
2	06	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1240	320	305	249	683
2	06	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1540	320	305	249	683
2	06	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1540	320	305	249	683
2	10	02	G 2	G 2	640	340	740	125	125	1240	360	373	297	805
2	10	03	G 2	G 2	640	340	740	125	125	1540	360	373	297	805
2	10	04	G 2	G 2	640	340	740	125	125	1540	360	373	297	805
2	10	06	G 2	G 2	640	340	740	125	125	1540	360	373	297	805

HU3 DPV VFD CM CC

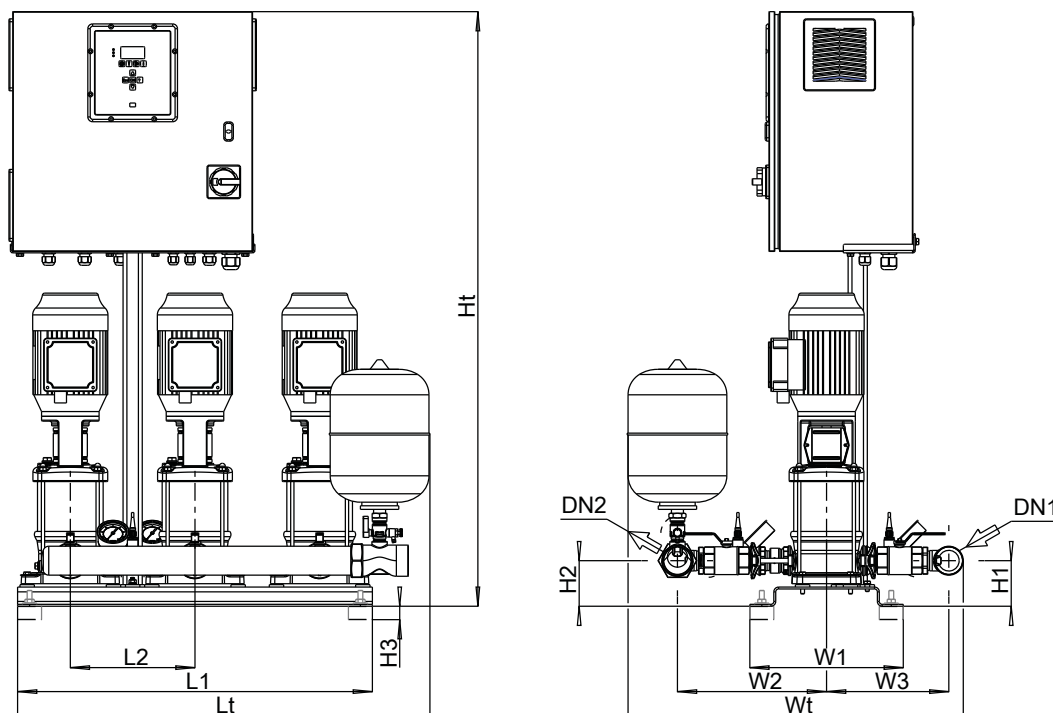


Fig. 5: Dimensions

Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
3	02	05	G 1 1/2	G 1 1/2	740	260	595	95	95	1240	320	291	235	655
3	02	08	G 1 1/2	G 1 1/2	740	260	595	95	95	1540	320	291	235	655
3	02	10	G 1 1/2	G 1 1/2	740	260	595	95	95	1540	320	291	235	655
3	02	14	G 1 1/2	G 1 1/2	740	260	595	95	95	1540	320	291	235	655
3	04	02	G 1 1/2	G 1 1/2	740	260	595	95	95	1240	320	291	235	655
3	04	04	G 1 1/2	G 1 1/2	740	260	595	95	95	1240	320	291	235	655
3	04	05	G 1 1/2	G 1 1/2	740	260	595	95	95	1240	320	291	235	655
3	04	07	G 1 1/2	G 1 1/2	740	260	595	95	95	1540	320	291	235	655
3	04	10	G 1 1/2	G 1 1/2	740	260	595	95	95	1540	320	291	235	655
3	04	14	G 1 1/2	G 1 1/2	740	260	595	95	95	1540	320	291	235	655
3	06	02	G 2	G 2	740	260	595	95	95	1240	320	311	255	701
3	06	03	G 2	G 2	740	260	595	95	95	1240	320	311	255	701
3	06	05	G 2	G 2	740	260	595	95	95	1240	320	311	255	701
3	06	07	G 2	G 2	740	260	595	95	95	1540	320	311	255	701
3	06	10	G 2	G 2	740	260	595	95	95	1540	320	311	255	701
3	10	02	G 2	G 2	980	340	1080	125	125	1240	360	373	297	805
3	10	03	G 2	G 2	980	340	1080	125	125	1540	360	373	297	805
3	10	04	G 2	G 2	980	340	1080	125	125	1540	360	373	297	805
3	10	06	G 2	G 2	980	340	1080	125	125	1540	360	373	297	805

HU2 DPV VFD MM CC

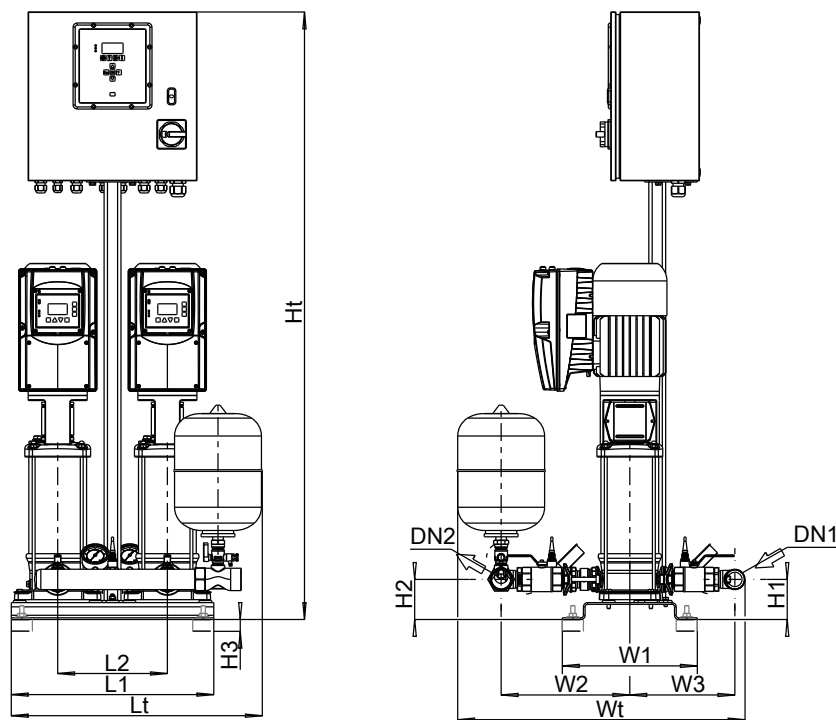


Fig. 6: Dimensions

Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
2	02	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	02	08	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	02	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	02	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	04	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	04	04	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	04	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	291	235	655
2	04	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	04	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	04	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	291	235	655
2	06	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	305	249	683
2	06	03	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	305	249	683
2	06	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1140	320	305	249	683
2	06	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	06	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	06	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1440	320	305	249	683
2	10	02	G 2	G 2	640	340	740	125	125	1140	360	373	297	805
2	10	03	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	04	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	06	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	08	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	10	11	G 2	G 2	640	340	740	125	125	1440	360	373	297	805
2	15	02	PN 16	PN 16	640	340	715	125	125	1440	360	408	332	938
2	15	03	PN 16	PN 16	640	340	715	125	125	1440	360	408	332	938
2	15	04	PN 16	PN 16	640	340	715	125	125	1440	360	408	332	938
2	15	06	PN 16	PN 16	640	340	715	125	125	1690	360	408	332	938
2	15	08	PN 16	PN 16	640	340	715	125	125	1690	360	408	332	938

HU3 DPV VFD MM CC3

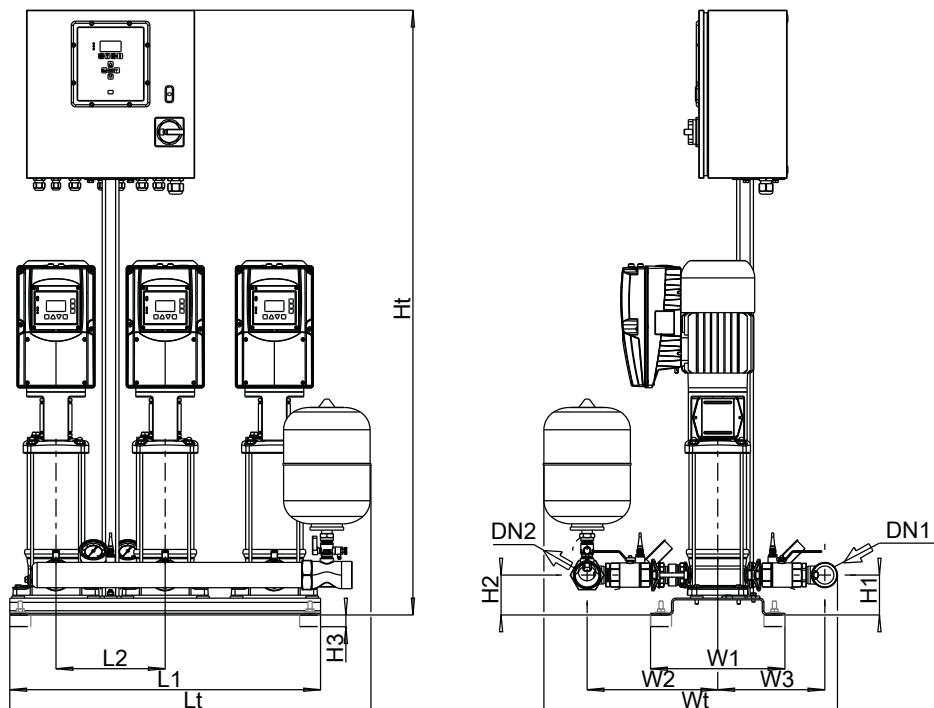


Fig. 7: Dimensions

①	Sensor
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Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
3	02	05	G 1 1/2	G 1 1/2	740	260	595	95	95	1140	320	291	235	655
3	02	08	G 1 1/2	G 1 1/2	740	260	595	95	95	1440	320	291	235	655
3	02	10	G 1 1/2	G 1 1/2	740	260	595	95	95	1440	320	291	235	655
3	02	14	G 1 1/2	G 1 1/2	740	260	595	95	95	1440	320	291	235	655
3	04	02	G 1 1/2	G 1 1/2	740	260	595	95	95	1140	320	291	235	655
3	04	04	G 1 1/2	G 1 1/2	740	260	595	95	95	1140	320	291	235	655
3	04	05	G 1 1/2	G 1 1/2	740	260	595	95	95	1140	320	291	235	655
3	04	07	G 1 1/2	G 1 1/2	740	260	595	95	95	1440	320	291	235	655
3	04	10	G 1 1/2	G 1 1/2	740	260	595	95	95	1440	320	291	235	655
3	04	14	G 1 1/2	G 1 1/2	740	260	595	95	95	1440	320	291	235	655
3	06	02	G 2	G 2	740	260	855	95	95	1140	320	311	255	701
3	06	03	G 2	G 2	740	260	595	95	95	1140	320	311	255	701
3	06	05	G 2	G 2	740	260	595	95	95	1140	320	311	255	701
3	06	07	G 2	G 2	740	260	595	95	95	1440	320	311	255	701
3	06	10	G 2	G 2	740	260	595	95	95	1440	320	311	255	701
3	06	14	G 2	G 2	740	260	595	95	95	1440	320	311	255	701
3	10	02	G 2	G 2	980	340	1080	125	125	1140	360	373	297	805
3	10	03	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	04	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	06	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	08	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	10	11	G 2	G 2	980	340	1080	125	125	1440	360	373	297	805
3	15	02	PN 16	PN 16	980	340	1055	125	125	1440	360	408	332	938
3	15	03	PN 16	PN 16	980	340	1055	125	125	1440	360	408	332	938
3	15	04	PN 16	PN 16	980	340	1055	125	125	1440	360	408	332	938
3	15	06	PN 16	PN 16	980	340	1055	125	125	1690	360	408	332	938
3	15	08	PN 16	PN 16	980	340	1055	125	125	1690	360	408	332	938

HU Premium Line VFD MMe Di/ MM Di



Main applications

- Pressure boosting

Fluids handled

- Drinking water
- Service water
- Cooling water
- Fluids not chemically or mechanically aggressive to the materials

Operating data

Operating properties

Characteristic		Value
Flow rate	Q [m³/h]	≤ 65,4 ³⁾
	Q [l/s]	≤ 18,2 ³⁾
Head	H [m]	≤ 134
Fluid temperature	T _{min.} [°C]	≥ 0
	T _{max.} [°C]	≤ +60
Operating pressure	p [bar]	≤ 16
Inlet pressure	p _{inl} [bar]	≤ 5 ⁴⁾

Design details

Design

- Fully automatic pressure booster system
- Variable speed operation
- Baseplate-mounted
- Membrane-type accumulator (direct-flow) to DIN 4807-5 on the discharge side, approved for drinking water, with shut-off element and drain valve.
- One or more vertical high-pressure pumps with variable speed system
- Hydraulic components made of stainless steel / brass for high operating reliability

- Lift check valve for each pump
- Pressure gauge for pressure indication
- Electronic dry running protection
- Pressure transmitter on the discharge side
- Anti-vibration pads per system

Multiple pump system

- Discharge-side gate valve per pump
- Suction-side gate valve per pump
- Suction-side manifold and discharge-side manifold made of stainless steel

Installation

- Stationary dry installation

Drive

- Electric motor
- Enclosure IP55

VFD MMe Di

- Efficiency class IE3 to IEC 60034-30

VFD MM Di

- Efficiency class IE5 to IEC 60034-30

Automation

- One frequency inverter per pump
- Motor protection switch per pump
- Control cabinet IP54

VFD MM Di

- Display on each drive
- Fault message signalling contact per pump
- Operation signalling contact per pump

3) For a system with three pumps (without stand-by pump)

4) For higher inlet pressures contact the manufacturer.

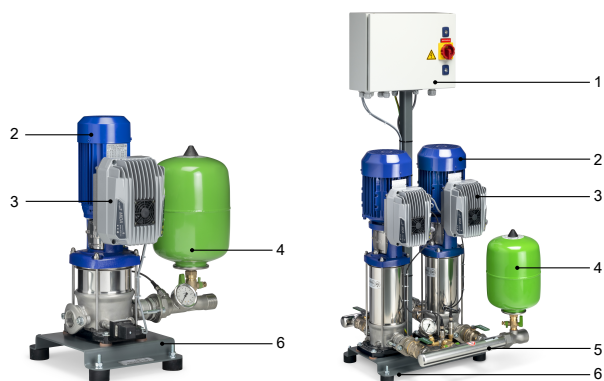
Designation

Example: Hydro-Unit Premium Line HU2 DPV2 /10 VFD MMe Di

Designation key

Code	Description	
HU	Type series	
2	Number of pumps	
DPV2	Pump size	
10	Number of pump stages	
VFD MMe Di	Design	
	VFD MMe Di	Variable speed pressure booster system with electrical connection cabinet
	VFD MM Di	Variable speed pressure booster system, frequency inverter at the motor (IE5), with electrical connection cabinet

Configuration and function



the control station).

If the demand drops towards 0, the pressure booster system slowly runs down to the stop point and stops.

As standard, one of the pumps is on stand-by. The control system defines each of the pumps as stand-by pump in alternation. This prevents stagnation of water in any of the pumps.

The pressure booster system is designed with dry running protection.

Function Manual mode

In manual mode, a minimum flow is required to protect the pump from overheating.

Fig. 8: Illustration of pressure booster system

1	Control cabinet
2	Pump
3	Control unit
4	Membrane-type accumulator
5	Manifold
6	Baseplate

Design

The fully automatic pressure booster system is equipped with one or more vertical high-pressure pumps (2) (all of which are speed-controlled) for pumping the fluid handled to the consumer installations in the set pressure range.

Function

Automatic mode

One or more pumps (2) are controlled and monitored by motor-mounted frequency inverters.

As the demand increases or decreases, pumps are started and stopped automatically.

As soon as the demand increases again after one pump has been stopped, another pump which has not been in operation before is started up.

The stand-by pump is also included in the alternating cycle.⁵⁾

The standard setting is for the pressure booster system to start automatically as a function of pressure; the actual pressure is measured by an analog pressure measuring device (pressure transmitter).

As long as the pressure booster system is in operation, the pumps are started and stopped as a function of demand (standard setting). In this way it is ensured that the individual pumps operate only in line with actual demand. The use of variable speed pumps reduces wear as well as the frequency of pump starts in parallel operation.

If a duty pump fails, the next pump is started up immediately. A fault is output, which can be reported via volt-free contacts (e.g. to

5) Multiple pump systems only

Materials

Overview of available materials

Component	Material
Pump casing	1.4308
Pump shroud	1.4301
Hydraulic system	1.4301
Mechanical seal	To EN 12756
Elastomer	EPDM
Baseplate	Steel, powder-coated
Shut-off valve	Brass, nickel-coated
Swing check valve	POM
Accumulator, connection	1.4401
Membrane	Approved for drinking water

Product benefits

- Energy-efficient operation and constant pressure ensured by speed control of all pumps.
- Suitable for drinking water; manufactured under stringent hygienic conditions
- Easy and fast commissioning of ready-to-connect, pre-assembled and tested system
- Corrosion resistance provided by powder-coated materials and stainless steel
- Integral dry running protection for reliable operation

VFD MM Di

- Prevention of damage to the piping through pipe priming/filling function on version 3~400 V
- Remote monitoring of the system through connection to building management system

Certifications

Overview

Label	Effective in:	Comment
	France	Approved in accordance with the French drinking water regulation
	United Kingdom	Approved in accordance with the UK drinking water regulation

Globe valves and swing check valve:

	Germany	Approved in accordance with German drinking water regulation
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Selection information

Selection example

Requirements:

Specified duty point at:

- Flow rate: 10 m³/h
- Head: 60 m
- Inlet pressure: 2 bar
- One pump as stand-by pump

Solution:

1. The inlet pressure of 2 bar (approx. 20 m) results in a required head of 40 m.
- ⇒ This results in the selection of a HU2 DPV10 /5 or HU3 DPV6 /5.

Technical data

Hydro-Unit Premium Line VFD MMe Di

Single-pump system

VFD MMe Di = variable speed pressure booster system

1 × 230 V ± 10 %

Dry running protection = switch

50 Hz

Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N [kW]	Motor efficiency class	I _N [A]	I _A /I _N	Frequency of starts [x/h]	I _{max} System [A]	I _{max} Overcurrent protection [A]	Sound pressure level [dB(A)]	Enclosure	p [bar]	PN	[kg]	Mat. No.
VFD MMe Di	1	02	05	0,37	IE -	1,6	-	50	4,5	-	60	IP55	5	10	31	SD10020505001M
VFD MMe Di	1	02	08	0,55	IE -	2,1	-	50	4,5	-	60	IP55	5	16	32	SD10020805001M
VFD MMe Di	1	02	10	0,75	IE3	3,1	-	50	7,5	-	55	IP55	5	16	39	SD10021005001M
VFD MMe Di	1	02	14	1,10	IE3	4	-	50	7,5	-	55	IP55	5	16	41	SD10021405001M
VFD MMe Di	1	04	02	0,37	IE -	1,6	-	50	4,5	-	60	IP55	5	10	30	SD10040205001M
VFD MMe Di	1	04	04	0,55	IE -	2,1	-	50	4,5	-	60	IP55	5	16	32	SD10040405001M
VFD MMe Di	1	04	05	0,75	IE3	3,1	-	50	7,5	-	55	IP55	5	10	37	SD10040505001M
VFD MMe Di	1	04	07	1,10	IE3	4	-	50	7,5	-	55	IP55	5	16	38	SD10040705001M
VFD MMe Di	1	04	10	1,50	IE3	5,3	-	50	11	-	55	IP55	5	16	45	SD10041005001M
VFD MMe Di	1	06	02	0,37	IE -	1,6	-	50	4,5	-	60	IP55	5	10	30	SD10060205001M
VFD MMe Di	1	06	03	0,75	IE3	3,1	-	50	7,5	-	55	IP55	5	10	37	SD10060305001M
VFD MMe Di	1	06	05	1,10	IE3	4	-	50	7,5	-	55	IP55	5	10	38	SD10060505001M
VFD MMe Di	1	06	07	1,50	IE3	5,3	-	50	11	-	55	IP55	5	16	44	SD10060705001M
VFD MMe Di	1	06	10	2,20	IE3	7,5	-	30	11	-	55	IP55	5	16	47	SD10061005001M
VFD MMe Di	1	10	02	0,37	IE3	3,1	-	50	7,5	-	55	IP55	5	10	48	SD10100205001M
VFD MMe Di	1	10	03	0,75	IE3	4	-	50	7,5	-	55	IP55	5	10	51	SD10100305001M
VFD MMe Di	1	10	04	1,10	IE3	5,3	-	50	11	-	55	IP55	5	10	56	SD10100405001M

Multiple pump system

VFD MMe Di = variable speed pressure booster system

3 × 400 V + N ± 10 %

Dry running protection = switch

50 Hz

Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N [kW]	Motor efficiency class	I _N [A]	I _A /I _N	Frequency of starts [x/h]	I _{max} System [A]	I _{max} Overcurrent protection [A]	Sound pressure level [dB(A)]	Enclosure	p [bar]	PN	[kg]	Mat. No.
VFD MMe Di	2	02	05	0,37	IE -	1,6	-	50	9	25	60	IP55	5	10	79	SD20020505001M
VFD MMe Di	2	02	05	0,55	IE -	2,1	-	50	9	25	60	IP55	5	16	81	SD20020805001M
VFD MMe Di	2	02	10	0,75	IE3	3,1	-	50	14	25	55	IP55	5	16	96	SD20021005001M
VFD MMe Di	2	02	14	1,10	IE3	4	-	50	14	25	55	IP55	5	16	100	SD20021405001M
VFD MMe Di	2	04	02	0,37	IE -	1,6	-	50	9	25	60	IP55	5	10	77	SD20040205001M
VFD MMe Di	2	04	04	0,55	IE -	2,1	-	50	9	25	60	IP55	5	10	79	SD20040405001M
VFD MMe Di	2	04	05	0,75	IE3	3,1	-	50	14	25	55	IP55	5	10	91	SD20040505001M
VFD MMe Di	2	04	07	1,10	IE3	4	-	50	14	25	55	IP55	5	16	93	SD20040705001M
VFD MMe Di	2	04	10	1,50	IE3	5,3	-	50	22	25	55	IP55	5	16	108	SD20041005001M
VFD MMe Di	2	06	02	0,37	IE -	1,6	-	50	9	25	60	IP55	5	10	78	SD20060205001M
VFD MMe Di	2	06	03	0,75	IE3	3,1	-	50	14	25	55	IP55	5	10	92	SD20060305001M
VFD MMe Di	2	06	05	1,10	IE3	4	-	50	14	25	55	IP55	5	10	94	SD20060505001M
VFD MMe Di	2	06	07	1,50	IE3	5,3	-	50	22	25	55	IP55	5	16	107	SD20060705001M
VFD MMe Di	2	06	10	2,20	IE3	7,5	-	30	22	40	55	IP55	5	16	113	SD20061005001M

Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N	Motor efficiency class	I _N	I _A /I _N	Frequency of starts	I _{max} System	I _{max} Overcurrent protection	Sound pressure level	Enclosure	p	PN	[kg]	Mat. No.
				[kW]		[A]		[x/h]					[bar]			
VFD MMe Di	2	10	02	0,37	IE3	3,1	-	50	14	25	55	IP55	5	10	117	SD20100205001M
VFD MMe Di	2	10	03	0,75	IE3	4	-	50	14	25	55	IP55	5	10	123	SD20100305001M
VFD MMe Di	2	10	04	1,10	IE3	5,3	-	50	22	25	55	IP55	5	10	134	SD20100405001M
VFD MMe Di	3	02	05	0,37	IE -	1,6	-	50	13,5	25	60	IP55	5	16	108	SD30020505001M
VFD MMe Di	3	02	08	0,55	IE -	2,1	-	50	13,5	25	60	IP55	5	16	111	SD30020805001M
VFD MMe Di	3	02	10	0,75	IE3	3,1	-	50	21	25	55	IP55	5	16	133	SD30021005001M
VFD MMe Di	3	02	14	1,10	IE3	4	-	50	21	25	55	IP55	5	16	139	SD30021405001M
VFD MMe Di	3	04	02	0,37	IE -	1,6	-	50	13,5	25	60	IP55	5	16	105	SD30040205001M
VFD MMe Di	3	04	04	0,55	IE -	2,1	-	50	13,5	25	60	IP55	5	16	108	SD30040405001M
VFD MMe Di	3	04	05	0,75	IE3	3,1	-	50	21	25	55	IP55	5	16	126	SD30040505001M
VFD MMe Di	3	04	07	1,10	IE3	4	-	50	21	25	55	IP55	5	16	129	SD30040705001M
VFD MMe Di	3	04	10	1,50	IE3	5,3	-	50	33	25	55	IP55	5	16	151	SD30041005001M
VFD MMe Di	3	06	02	0,37	IE -	1,6	-	50	13,5	25	60	IP55	5	10	108	SD30060205001M
VFD MMe Di	3	06	03	0,75	IE3	3,1	-	50	21	25	55	IP55	5	10	129	SD30060305001M
VFD MMe Di	3	06	05	1,10	IE3	4	-	50	21	25	55	IP55	5	10	132	SD30060505001M
VFD MMe Di	3	06	07	1,50	IE3	5,3	-	50	33	25	55	IP55	5	16	151	SD30060705001M
VFD MMe Di	3	06	10	2,00	IE3	7,5	-	30	33	40	55	IP55	5	16	160	SD30061005001M
VFD MMe Di	3	10	02	0,37	IE3	3,1	-	50	21	25	55	IP55	5	10	166	SD30100205001M
VFD MMe Di	3	10	03	0,75	IE3	4	-	50	21	25	55	IP55	5	10	175	SD30100305001M
VFD MMe Di	3	10	04	1,10	IE3	5,3	-	50	33	25	55	IP55	5	10	191	SD30100405001M

Hydro-Unit Premium Line VFD MM Di

VFD MM Di = variable speed pressure booster system with IE5 motor

3 × 400 V ± 10 %

Dry running protection = sensor

50 Hz

Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N	Motor efficiency class	I _N	I _A /I _N	Frequency of starts	I _{max} System	I _{max} Overcurrent protection	Sound pressure level	Enclosure	p	PN	[kg]	Mat. No.
				[kW]		[A]		[x/h]					[bar]			
VFD MM Di	1	02	05	0,37	IE5	1,3	-	-	1,4	-	70	IP55	5	10	34	SD10020505003M
VFD MM Di	1	02	08	0,55	IE5	1,6	-	-	2	-	70	IP55	5	16	34	SD10020805003M
VFD MM Di	1	02	10	0,75	IE5	2,1	-	-	2,7	-	70	IP55	5	16	41	SD10021005003M
VFD MM Di	1	02	14	1,10	IE5	3	-	-	3,7	-	70	IP55	5	16	43	SD10021405003M
VFD MM Di	1	04	02	0,37	IE5	1,3	-	-	1,4	-	70	IP55	5	10	33	SD10040205003M
VFD MM Di	1	04	04	0,55	IE5	1,6	-	-	2	-	70	IP55	5	10	33	SD10040405003M
VFD MM Di	1	04	05	0,75	IE5	2,1	-	-	2,7	-	70	IP55	5	10	39	SD10040505003M
VFD MM Di	1	04	07	1,10	IE5	3	-	-	3,7	-	70	IP55	5	16	40	SD10040705003M
VFD MM Di	1	04	10	1,50	IE5	4,1	-	-	5,2	-	70	IP55	5	16	44	SD10041005003M
VFD MM Di	1	04	14	2,20	IE3	5,6	-	-	6,3	-	70	IP55	3,5	16	48	SD10041405003M
VFD MM Di	1	06	02	0,37	IE5	1,3	-	-	1,4	-	70	IP55	5	10	33	SD10060205003M
VFD MM Di	1	06	03	0,75	IE5	2,1	-	-	2,7	-	70	IP55	5	10	39	SD10060305003M
VFD MM Di	1	06	05	1,10	IE5	3	-	-	3,7	-	70	IP55	5	10	40	SD10060505003M
VFD MM Di	1	06	07	1,50	IE5	4,1	-	-	5,2	-	70	IP55	5	16	43	SD10060705003M
VFD MM Di	1	06	10	2,20	IE5	5,6	-	-	6,3	-	70	IP55	5	16	47	SD10061005003M
VFD MM Di	1	06	14	3,00	IE5	7,6	-	-	8,4	-	71	IP55	2,5	16	58	SD10061405003M
VFD MM Di	1	10	02	0,75	IE5	2,1	-	-	2,7	-	70	IP55	5	10	50	SD10100205003M
VFD MM Di	1	10	03	1,10	IE5	3	-	-	3,7	-	70	IP55	5	10	52	SD10100305003M
VFD MM Di	1	10	04	1,50	IE5	4,1	-	-	5,2	-	70	IP55	5	10	54	SD10100405003M
VFD MM Di	1	10	06	2,20	IE5	5,6	-	-	6,3	-	70	IP55	5	16	60	SD10100605003M
VFD MM Di	1	10	08	3,00	IE5	7,6	-	-	8,4	-	71	IP55	5	16	69	SD10100805003M

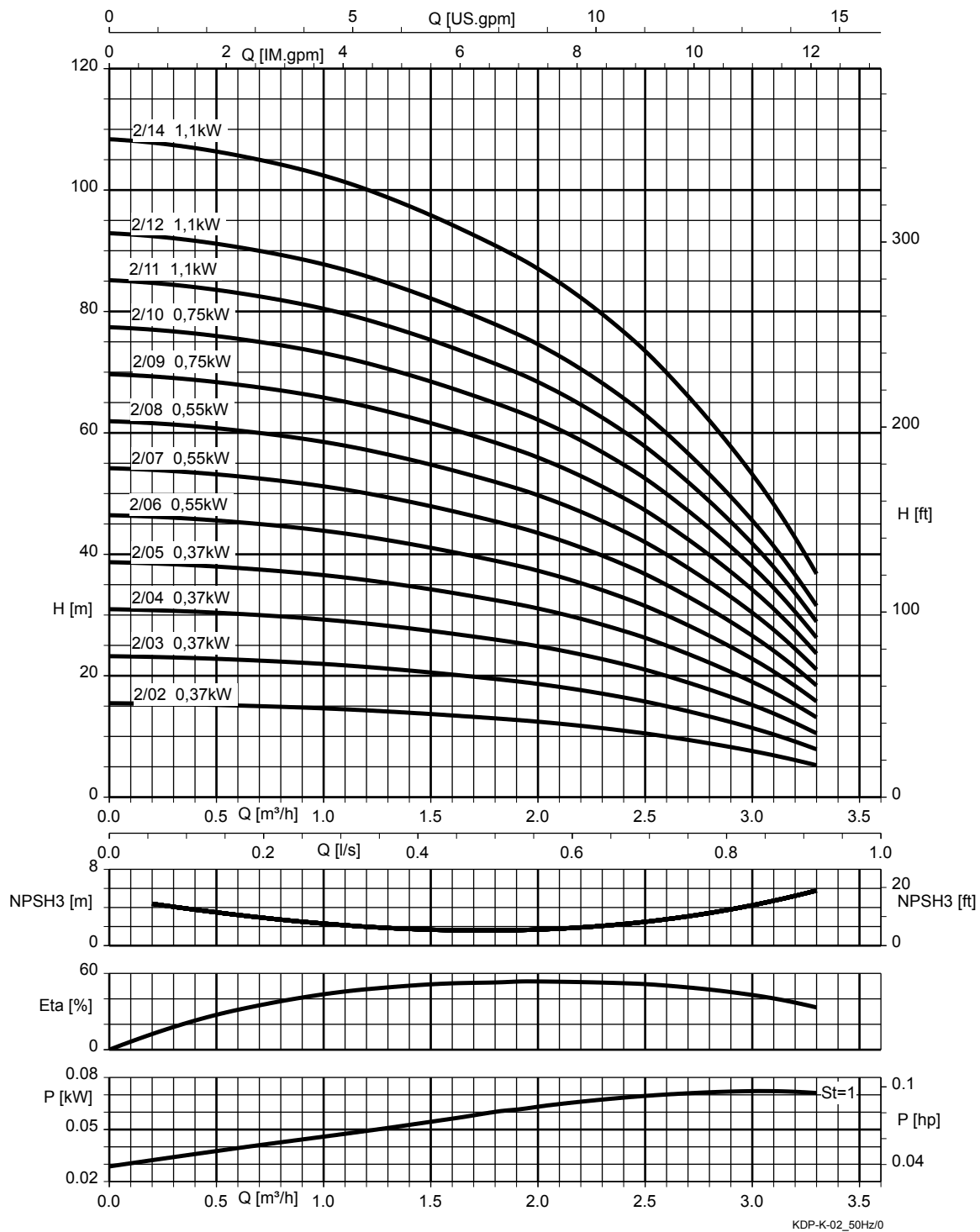


Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N	Motor efficiency class	I _N	I _A /I _N	Frequency of starts	I _{max} System	I _{max} Overcurrent protection	Sound pressure level	Enclosure	p	PN	[kg]	Mat. No.
				[kW]		[A]							[bar]			
VFD MM Di	1	10	11	4,00	IE5	9,4	-	-	10,4	-	71	IP55	3,5	16	85	SD10101105003M
VFD MM Di	1	15	02	2,20	IE5	5,6	-	-	6,3	-	70	IP55	5	10	56	SD10150205003M
VFD MM Di	1	15	03	3,00	IE5	7,6	-	-	8,4	-	71	IP55	5	10	64	SD10150305003M
VFD MM Di	1	15	04	4,00	IE5	9,4	-	-	10,4	-	71	IP55	5	16	77	SD10150405003M
VFD MM Di	1	15	06	5,50	IE5	12,5	-	-	14,6	-	71	IP55	5	16	83	SD10150605003M
VFD MM Di	1	15	08	7,50	IE5	16,7	-	-	18,7	-	71	IP55	4,5	16	83	SD10150805003M
VFD MM Di	2	02	05	0,37	IE5	1,3			2,8	25	70	IP55	5	10	83	SD20020505003M
VFD MM Di	2	02	08	0,55	IE5	1,6			4	25	70	IP55	5	16	83	SD20020805003M
VFD MM Di	2	02	10	0,75	IE5	2,1			5,4	25	70	IP55	5	16	99	SD20021005003M
VFD MM Di	2	02	14	1,10	IE5	3			7,4	25	70	IP55	5	16	102	SD20021405003M
VFD MM Di	2	04	02	0,37	IE5	1,3			2,8	25	70	IP55	5	10	81	SD20040205003M
VFD MM Di	2	04	04	0,55	IE5	1,6			4	25	70	IP55	5	10	82	SD20040405003M
VFD MM Di	2	04	05	0,75	IE5	2,1			5,4	25	70	IP55	5	10	94	SD20040505003M
VFD MM Di	2	04	07	1,10	IE5	3			7,4	25	70	IP55	5	16	96	SD20040705003M
VFD MM Di	2	04	10	1,50	IE5	4,1			10,4	25	70	IP55	5	16	103	SD20041005003M
VFD MM Di	2	04	14	2,20	IE5	5,6			10,4	25	70	IP55	3,5	16	111	SD20041405003M
VFD MM Di	2	06	02	0,37	IE5	1,3			2,8	25	70	IP55	5	10	82	SD20060205003M
VFD MM Di	2	06	03	0,75	IE5	2,1			5,4	25	70	IP55	5	10	95	SD20060305003M
VFD MM Di	2	06	05	1,10	IE5	3			7,4	25	70	IP55	5	10	96	SD20060505003M
VFD MM Di	2	06	07	1,50	IE5	4,1			10,4	25	70	IP55	5	16	103	SD20060705003M
VFD MM Di	2	06	10	2,20	IE5	5,6			12,6	25	70	IP55	5	16	112	SD20061005003M
VFD MM Di	2	06	14	3,00	IE5	7,6			16,8	25	71	IP55	2,5	16	133	SD20061405003M
VFD MM Di	2	10	02	0,75	IE5	2,1			5,4	25	70	IP55	5	10	120	SD20100205003M
VFD MM Di	2	10	03	1,10	IE5	3			7,4	25	70	IP55	5	10	125	SD20100305003M
VFD MM Di	2	10	04	1,50	IE5	4,1			10,4	25	70	IP55	5	10	130	SD20100405003M
VFD MM Di	2	10	06	2,20	IE5	5,6			12,6	25	70	IP55	5	16	141	SD20100605003M
VFD MM Di	2	10	08	3,00	IE5	7,6			16,8	25	71	IP55	5	16	158	SD20100805003M
VFD MM Di	2	10	11	4,00	IE5	9,4			20,8	40	71	IP55	3,5	16	194	SD20101105003M
VFD MM Di	2	15	02	2,20	IE5	5,6			12,6	25	70	IP55	5	10	139	SD20150205003M
VFD MM Di	2	15	03	3,00	IE5	7,6			16,8	25	71	IP55	5	10	154	SD20150305003M
VFD MM Di	2	15	04	4,00	IE5	9,4			20,8	40	71	IP55	5	16	182	SD20150405003M
VFD MM Di	2	15	06	5,50	IE5	12,5			29,2	25	71	IP55	5	16	196	SD20150605003M
VFD MM Di	2	15	08	7,50	IE5	16,7			37,4	40	71	IP55	4,5	16	196	SD20150805003M
VFD MM Di	3	02	05	0,37	IE5	1,3			4,2	25	70	IP55	5	10	114	SD30020505003M
VFD MM Di	3	02	08	0,55	IE5	1,6			6	25	70	IP55	5	16	115	SD30020805003M
VFD MM Di	3	02	10	0,75	IE5	2,1			8,1	25	70	IP55	5	16	137	SD30021005003M
VFD MM Di	3	02	14	1,10	IE5	3			11,1	25	70	IP55	5	16	142	SD30021405003M
VFD MM Di	3	04	02	0,37	IE5	1,3			4,2	25	70	IP55	5	10	111	SD30040205003M
VFD MM Di	3	04	04	0,55	IE5	1,6			6	25	70	IP55	5	10	112	SD30040405003M
VFD MM Di	3	04	05	0,75	IE5	2,1			8,1	25	70	IP55	5	10	130	SD30040505003M
VFD MM Di	3	04	07	1,10	IE5	3			11,1	25	70	IP55	5	16	133	SD30040705003M
VFD MM Di	3	04	10	1,50	IE5	4,1			15,6	25	70	IP55	5	16	144	SD30041005003M
VFD MM Di	3	04	14	2,20	IE5	5,6			15,6	25	70	IP55	3,5	16	155	SD30041405003M
VFD MM Di	3	06	02	0,37	IE5	1,3			4,2	25	70	IP55	5	10	113	SD30060205003M
VFD MM Di	3	06	03	0,75	IE5	2,1			8,1	25	70	IP55	5	10	132	SD30060305003M
VFD MM Di	3	06	05	1,10	IE5	3			11,1	25	70	IP55	5	10	134	SD30060505003M
VFD MM Di	3	06	07	1,50	IE5	4,1			15,6	25	70	IP55	5	16	143	SD30060705003M
VFD MM Di	3	06	10	2,20	IE5	5,6			18,9	25	70	IP55	5	16	157	SD30061005003M
VFD MM Di	3	06	14	3,00	IE5	7,6			25,2	25	71	IP55	2,5	16	189	SD30061405003M
VFD MM Di	3	10	02	0,75	IE5	2,1			8,1	25	70	IP55	5	10	169	SD30100205003M
VFD MM Di	3	10	03	1,10	IE5	3			11,1	25	70	IP55	5	10	177	SD30100305003M
VFD MM Di	3	10	04	1,50	IE5	4,1			15,6	25	70	IP55	5	10	184	SD30100405003M
VFD MM Di	3	10	06	2,20	IE5	5,6			18,9	25	70	IP55	5	16	200	SD30100605003M
VFD MM Di	3	10	08	3,00	IE5	7,6			25,2	25	71	IP55	5	16	226	SD30100805003M
VFD MM Di	3	10	11	4,00	IE5	9,4			31,2	40	71	IP55	3,5	16	276	SD30101105003M

Hydro-Unit Premium Line	Number of pumps	Size	Number of stages	P _N	Motor efficiency class	I _N	I _A /I _N	Frequency of starts	I _{max} System	I _{max} Overcurrent protection	Sound pressure level	Enclosure	p	PN	[kg]	Mat. No.
				[kW]		[A]							[bar]			
VFD MM Di	3	15	02	2,20	IE5	5,6			18,9	25	70	IP55	5	10	197	SD30150205003M
VFD MM Di	3	15	03	3,00	IE5	7,6			25,2	25	71	IP55	5	10	220	SD30150305003M
VFD MM Di	3	15	04	4,00	IE5	9,4			31,2	40	71	IP55	5	16	261	SD30150405003M
VFD MM Di	3	15	06	5,50	IE5	12,5			43,8	25	71	IP55	5	16	278	SD30150605003M
VFD MM Di	3	15	08	7,50	IE5	16,7			56,1	40	71	IP55	4,5	16	278	SD30150805003M

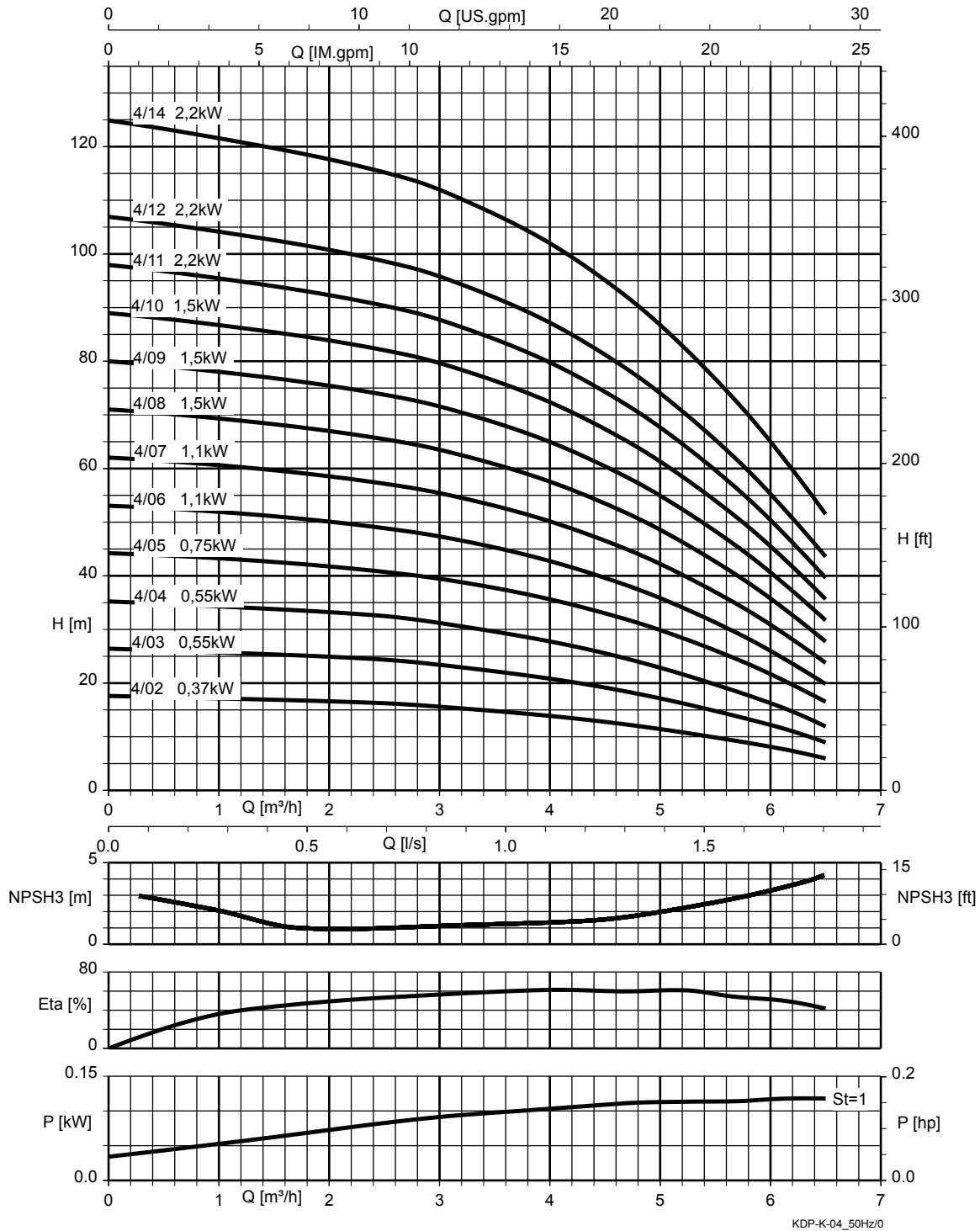
Characteristic curves

Hydro-Unit Premium Line DPV2, n = 2900 rpm



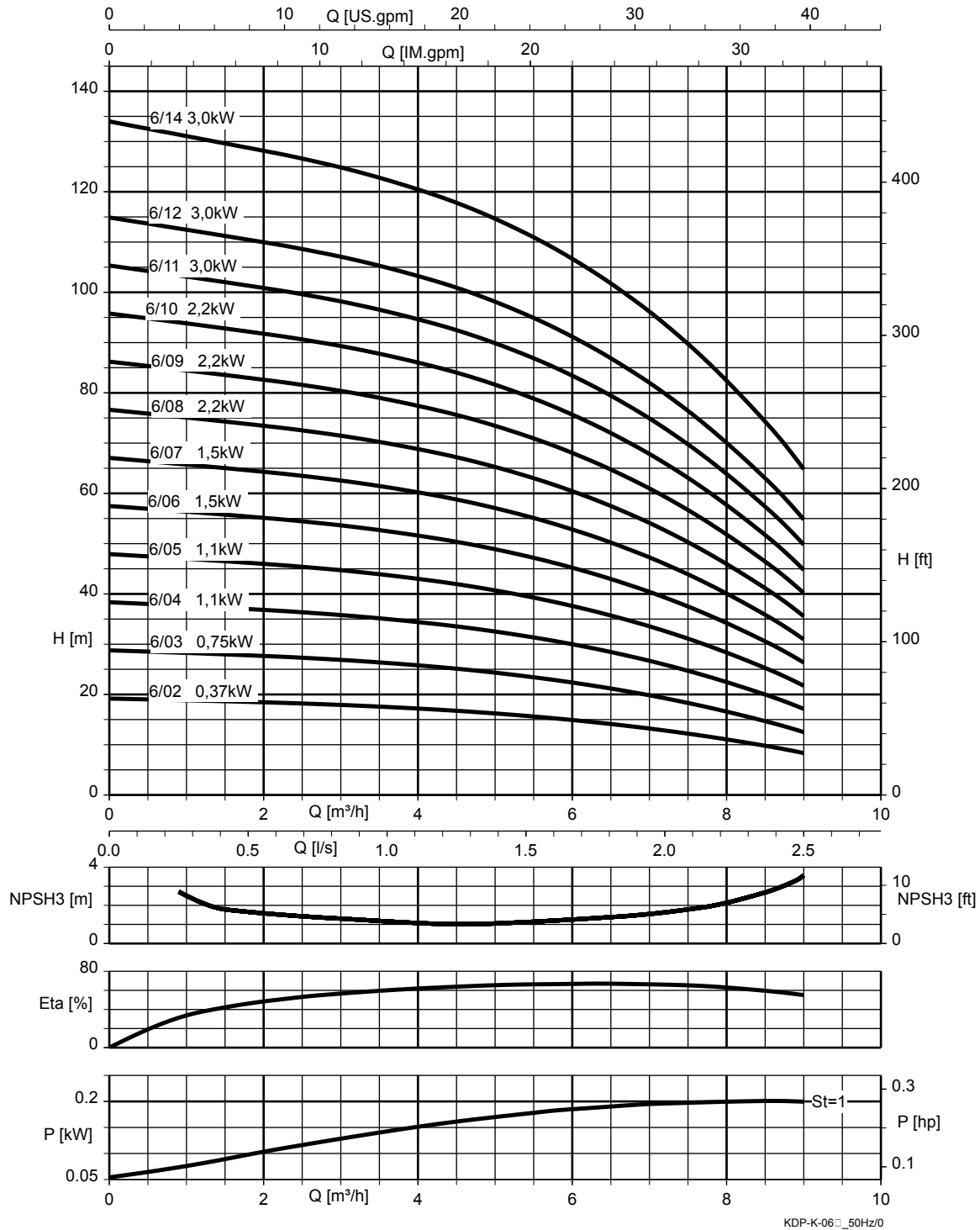
St = 1 | P per stage

Hydro-Unit Premium Line DPV4, n = 2900 rpm



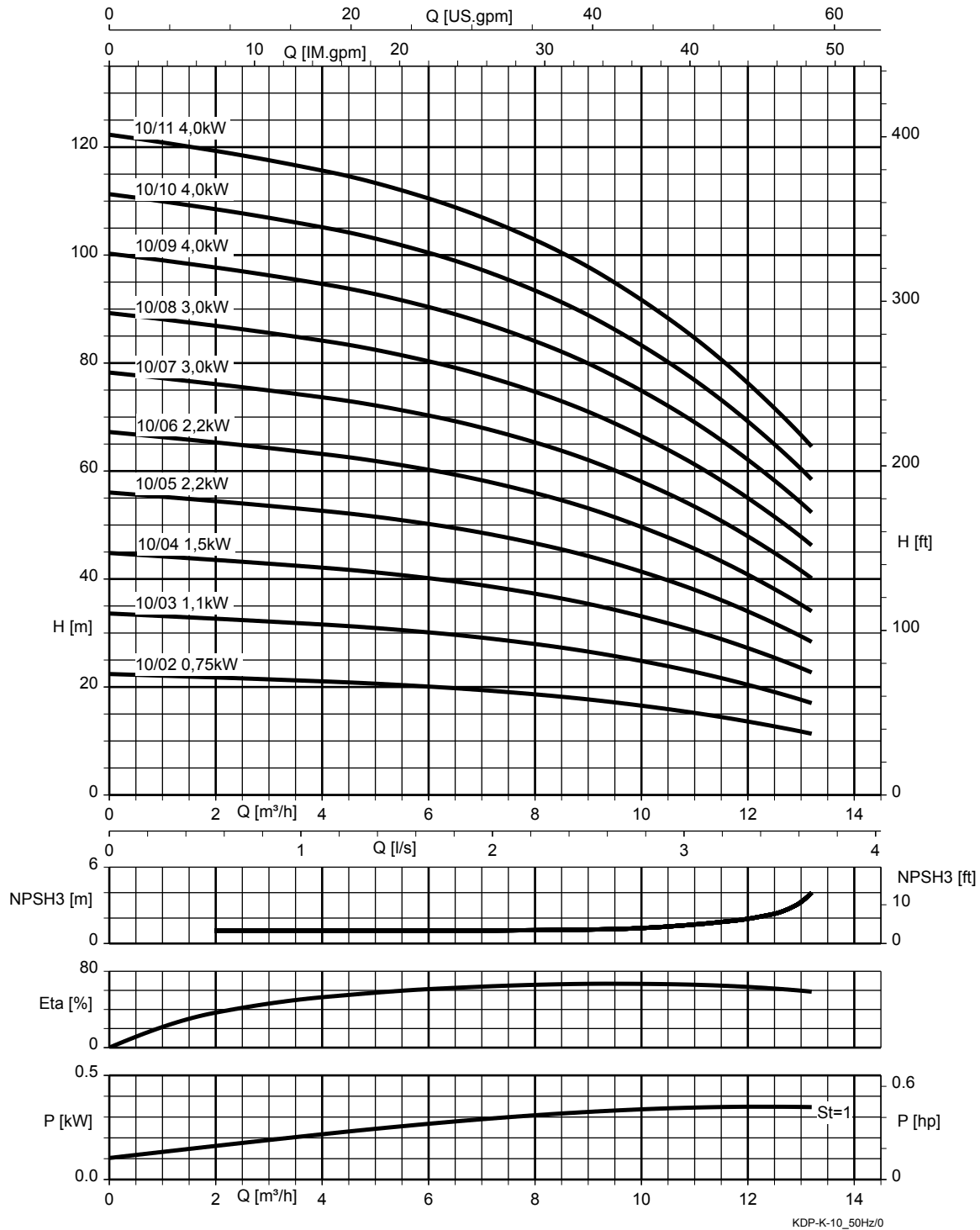
St = 1 | P per stage

Hydro-Unit Premium Line DPV6, n = 2900 rpm



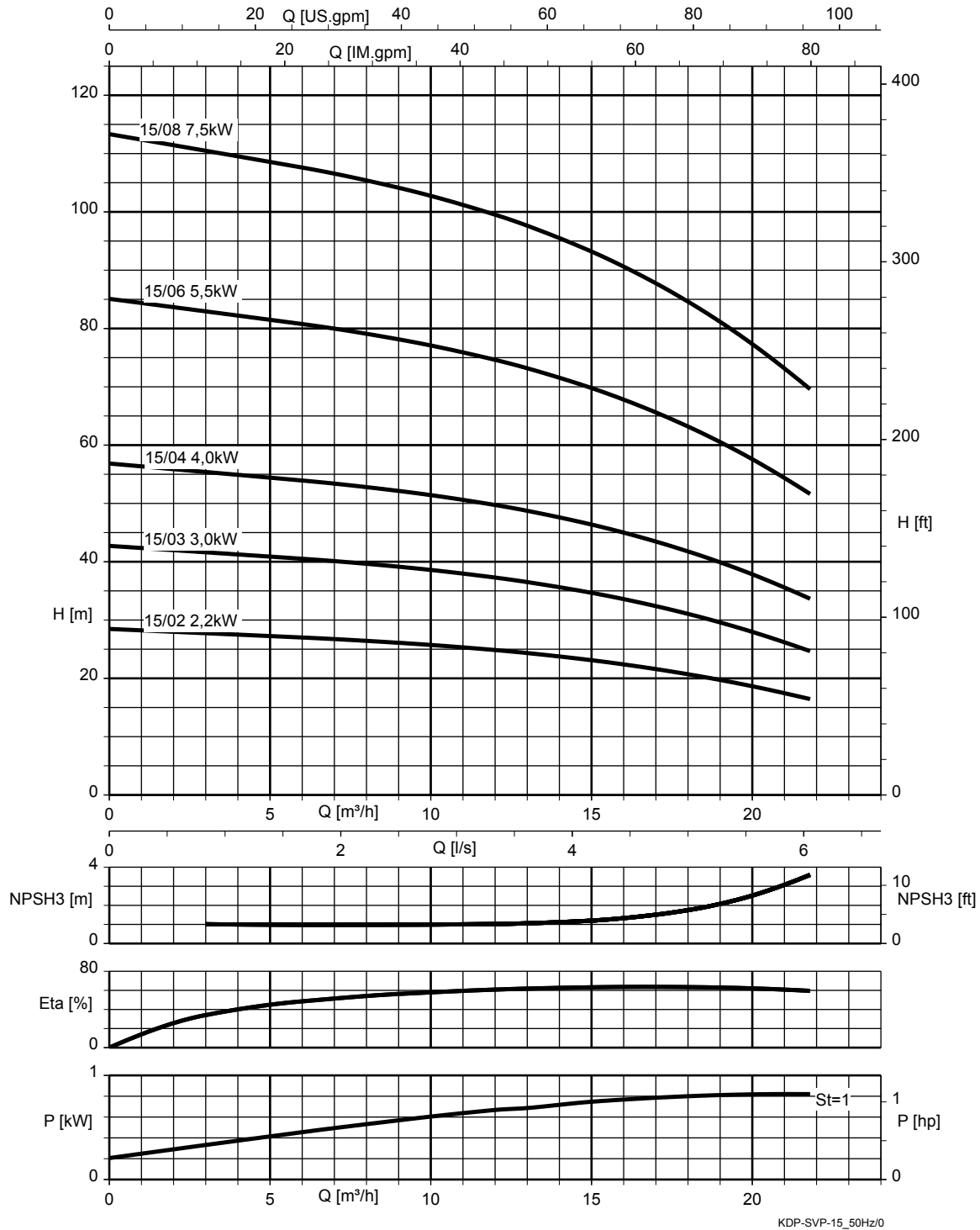
St = 1 | P per stage

Hydro-Unit Premium Line DPV10, n = 2900 rpm



St = 1 | P per stage

Hydro-Unit Premium Line DPV15, n = 2900 rpm



St = 1 | P per stage

Dimensions and connections

HU1 DPV VFD MMe Di

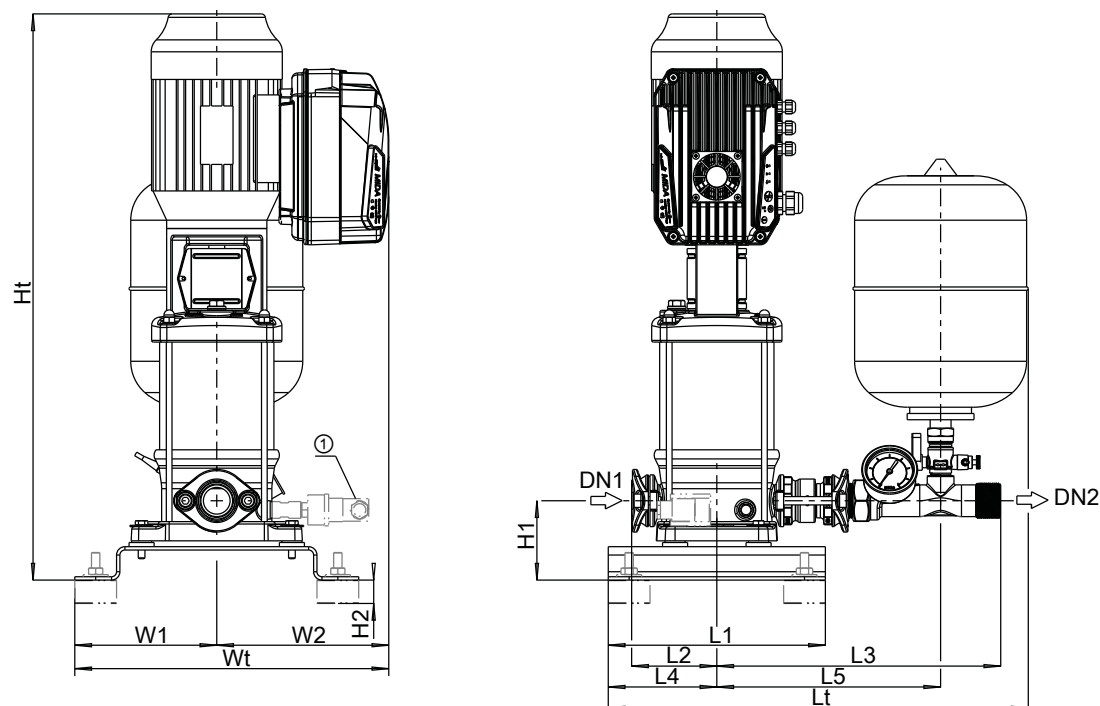


Fig. 9: Dimensions

①	Switch
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Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	L3	L4	L5	Lt	H1	H2	Ht	W1	W2	Wt
1	02	05	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	587	170	193	363
1	02	08	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	686	170	193	363
1	02	10	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	720	170	207	377
1	02	14	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	836	170	207	377
1	04	02	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	523	170	193	363
1	04	04	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	590	170	193	363
1	04	05	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	612	170	207	377
1	04	07	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	685	170	207	377
1	04	10	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	777	170	222	392
1	06	02	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	530	170	193	363
1	06	03	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	580	170	207	377
1	06	05	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	660	170	207	377
1	06	07	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	737	170	222	392
1	06	10	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	837	170	222	392
1	10	02	G 1 1/2	G 1 1/2	340	129	379	170	309	584	125	28	625	190	207	397
1	10	03	G 1 1/2	G 1 1/2	340	129	379	170	309	584	125	28	681	190	207	397
1	10	04	G 1 1/2	G 1 1/2	340	129	379	170	309	584	125	28	735	190	222	412

HU2 DPV VFD MMe Di

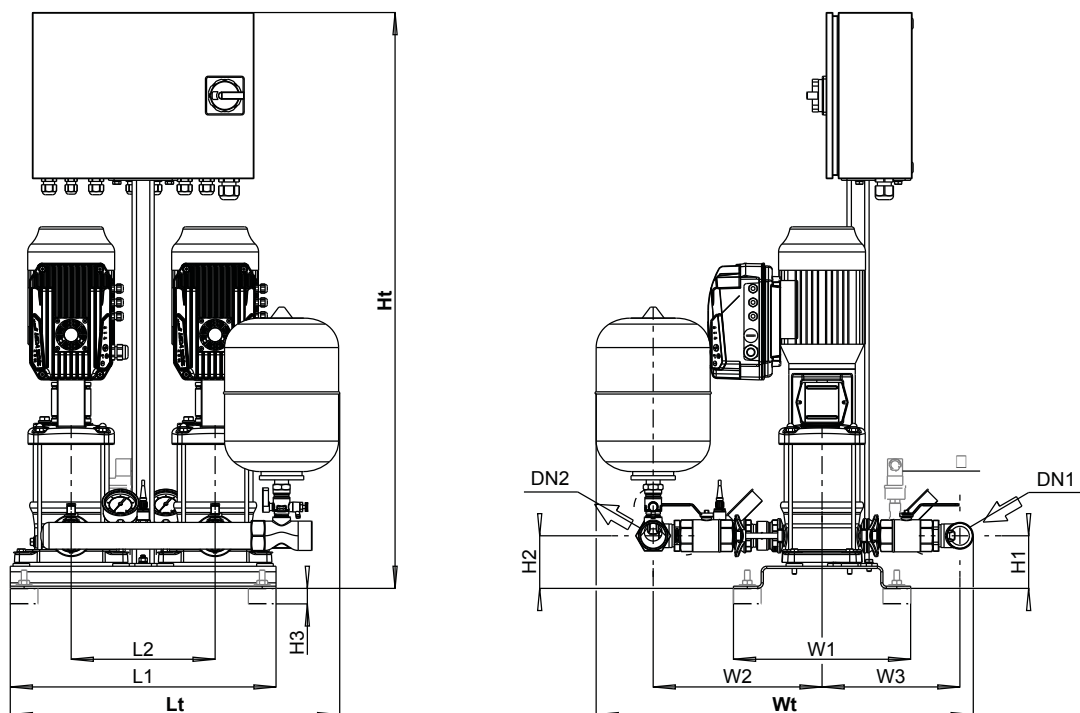


Fig. 10: Dimensions

①	Switch
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Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
2	02	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	291	235	655
2	02	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	02	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	02	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	04	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	291	235	655
2	04	04	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	291	235	655
2	04	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	291	235	655
2	04	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	04	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	06	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	305	249	683
2	06	03	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	305	249	683
2	06	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	305	249	683
2	06	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	305	249	683
2	06	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	305	249	683
2	10	02	G 2	G 2	640	340	740	125	125	1040	360	373	297	805
2	10	03	G 2	G 2	640	340	740	125	125	1040	360	373	297	805
2	10	04	G 2	G 2	640	340	740	125	125	1340	360	373	297	805

HU3 DPV VFD MMe Di

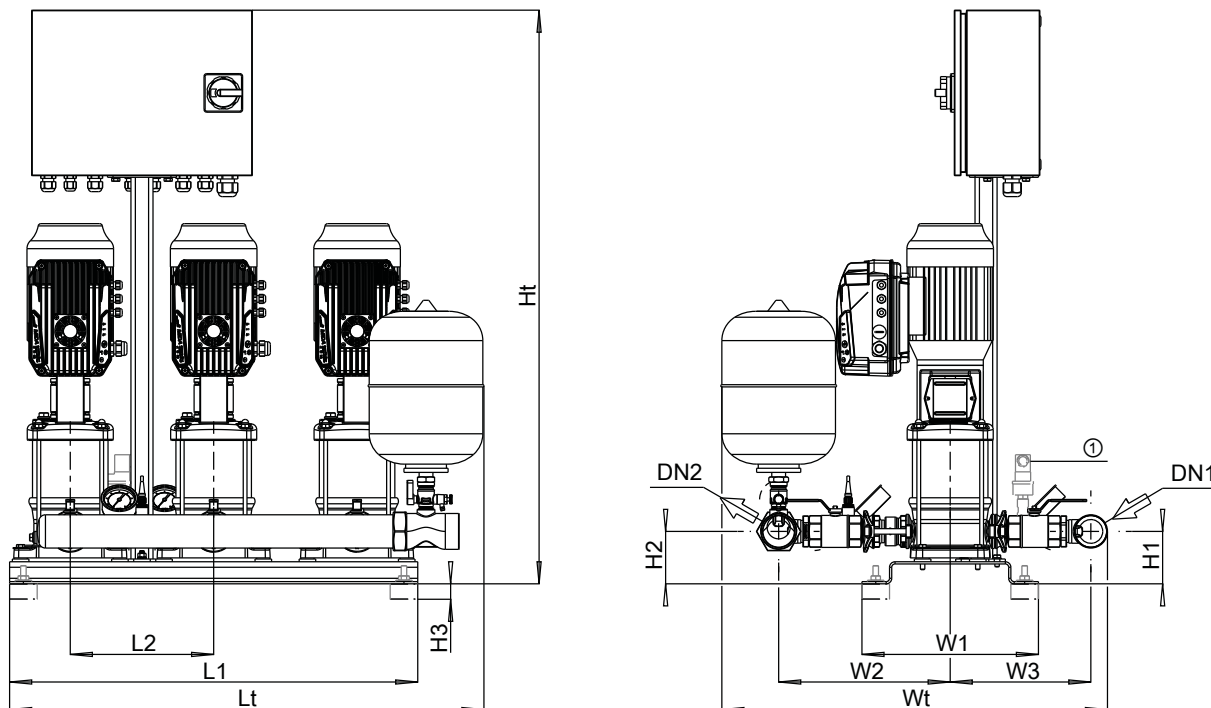


Fig. 11: Dimensions

① Switch

Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
3	02	05	G 1 1/2	G 1 1/2	740	260	855	95	95	1040	320	291	235	655
3	02	08	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	02	10	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	02	14	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	04	02	G 1 1/2	G 1 1/2	740	260	855	95	95	1040	320	291	235	655
3	04	04	G 1 1/2	G 1 1/2	740	260	855	95	95	1040	320	291	235	655
3	04	05	G 1 1/2	G 1 1/2	740	260	855	95	95	1040	320	291	235	655
3	04	07	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	04	10	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	06	02	G 2	G 2	740	260	855	95	95	1040	320	311	255	701
3	06	03	G 2	G 2	740	260	855	95	95	1040	320	311	255	701
3	06	05	G 2	G 2	740	260	855	95	95	1040	320	311	255	701
3	06	07	G 2	G 2	740	260	855	95	95	1340	320	311	255	701
3	06	10	G 2	G 2	740	260	855	95	95	1340	320	311	255	701
3	10	02	G 2	G 2	980	340	1080	125	125	1040	360	373	297	805
3	10	03	G 2	G 2	980	340	1080	125	125	1040	360	373	297	805
3	10	04	G 2	G 2	980	340	1080	125	125	1340	360	373	297	805

HU1 DPV VFD MM Di

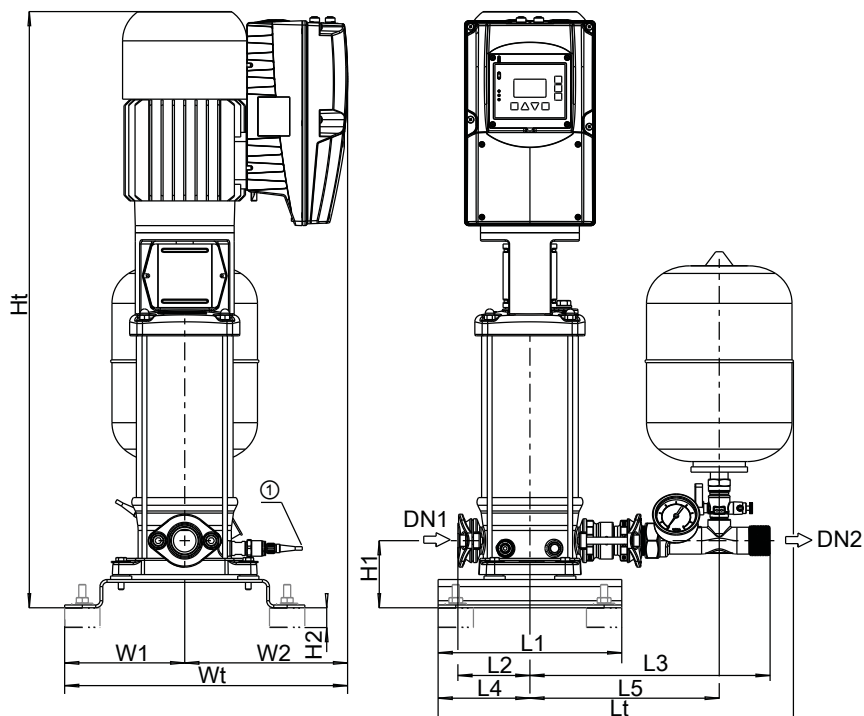


Fig. 12: Dimensions

① Sensor (dry running protection)

Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	L3	L4	L5	Lt	H1	H2	Ht	W1	W2	Wt
1	02	05	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	643	170	220	390
1	02	08	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	718	170	220	390
1	02	10	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	761	170	235	405
1	02	14	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	847	170	235	405
1	04	02	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	579	170	220	390
1	04	04	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	622	170	220	390
1	04	05	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	653	170	235	405
1	04	07	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	698	170	235	405
1	04	10	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	783	170	240	410
1	04	14	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	893	170	230	400
1	06	02	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	586	170	220	390
1	06	03	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	621	170	235	405
1	06	05	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	671	170	235	405
1	06	07	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	743	170	240	410
1	06	10	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	842	170	230	400
1	06	14	G 1 1/4	G 1 1/4	260	102	340	130	268	503	95	28	982	170	240	410
1	10	02	G 1 1/2	G 1 1/2	340	129	379	170	309	584	125	28	666	190	235	425
1	10	03	G 1 1/2	G 1 1/2	340	129	379	170	309	584	125	28	692	190	235	425
1	10	04	G 1 1/2	G 1 1/2	340	129	379	170	309	584	125	28	741	190	240	430
1	10	06	G 1 1/2	G 1 1/2	340	129	379	170	309	584	125	28	818	190	230	420
1	10	08	G 1 1/2	G 1 1/2	340	129	379	170	309	584	125	28	911	190	240	430
1	10	11	G 1 1/2	G 1 1/2	340	129	379	170	309	584	125	28	1011	190	255	445
1	15	02	G 2	G 2	340	129	379	170	309	584	125	28	688	190	230	420
1	15	03	G 2	G 2	340	129	379	170	309	584	125	28	778	190	240	430
1	15	04	G 2	G 2	340	129	379	170	309	584	125	28	826	190	255	445
1	15	06	G 2	G 2	340	129	379	170	309	584	125	28	981	190	310	500
1	15	08	G 2	G 2	340	129	379	170	309	584	125	28	1093	190	330	520

HU2 DPV VFD MM Di

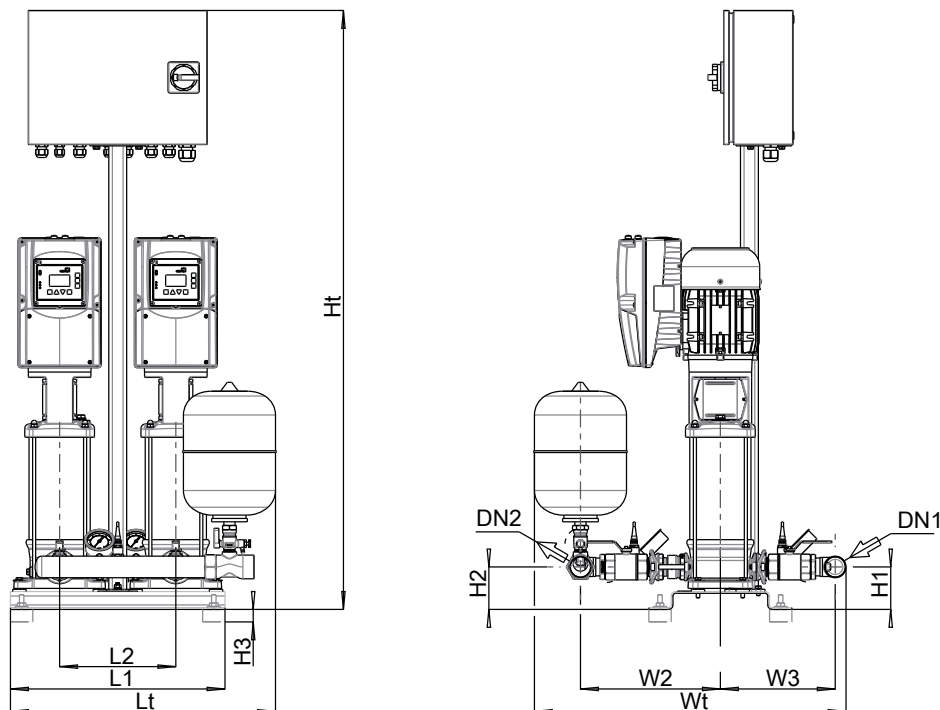


Fig. 13: Dimensions

Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
2	02	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	291	235	655
2	02	08	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	02	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	02	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	04	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	291	235	655
2	04	04	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	291	235	655
2	04	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	291	235	655
2	04	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	04	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	04	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	291	235	655
2	06	02	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	305	249	683
2	06	03	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	305	249	683
2	06	05	G 1 1/2	G 1 1/2	480	260	595	95	95	1040	320	305	249	683
2	06	07	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	305	249	683
2	06	10	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	305	249	683
2	06	14	G 1 1/2	G 1 1/2	480	260	595	95	95	1340	320	305	249	683
2	10	02	G 2	G 2	640	340	740	125	125	1040	360	373	297	805
2	10	03	G 2	G 2	640	340	740	125	125	1340	360	373	297	805
2	10	04	G 2	G 2	640	340	740	125	125	1340	360	373	297	805
2	10	06	G 2	G 2	640	340	740	125	125	1340	360	373	297	805
2	10	08	G 2	G 2	640	340	740	125	125	1340	360	373	297	805
2	10	11	G 2	G 2	640	340	740	125	125	1340	360	373	207	805
2	15	02	PN 16	PN 16	640	340	715	125	125	1340	360	408	332	938
2	15	03	PN 16	PN 16	640	340	715	125	125	1340	360	408	332	938
2	15	04	PN 16	PN 16	640	340	715	125	125	1340	360	408	332	938
2	15	06	PN 16	PN 16	640	340	715	125	125	1590	360	408	332	938
2	15	08	PN 16	PN 16	640	340	715	125	125	1590	360	408	332	938

HU3 DPV VFD MM Di

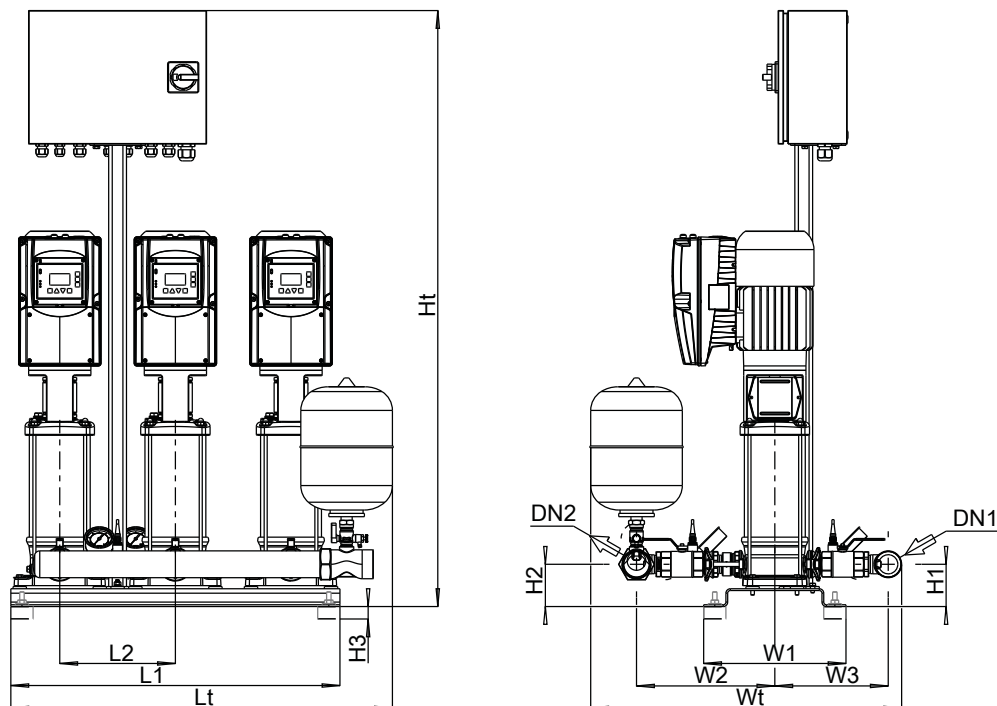


Fig. 14: Dimensions

Dimensions [mm] and connections

Number of pumps	Size	Number of stages	DN1	DN2	L1	L2	Lt	H1	H2	Ht	W1	W2	W3	Wt
3	02	05	G 1 1/2	G 1 1/2	740	260	855	95	95	1040	320	291	235	655
3	02	08	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	02	10	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	02	14	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	04	02	G 1 1/2	G 1 1/2	740	260	855	95	95	1040	320	291	235	655
3	04	04	G 1 1/2	G 1 1/2	740	260	855	95	95	1040	320	291	235	655
3	04	05	G 1 1/2	G 1 1/2	740	260	855	95	95	1040	320	291	235	655
3	04	07	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	04	10	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	04	14	G 1 1/2	G 1 1/2	740	260	855	95	95	1340	320	291	235	655
3	06	02	G 2	G 2	740	260	855	95	95	1040	320	311	255	701
3	06	03	G 2	G 2	740	260	855	95	95	1040	320	311	255	701
3	06	05	G 2	G 2	740	260	855	95	95	1040	320	311	255	701
3	06	07	G 2	G 2	740	260	855	95	95	1340	320	311	255	701
3	06	10	G 2	G 2	740	260	855	95	95	1340	320	311	255	701
3	06	14	G 2	G 2	740	260	855	95	95	1340	320	311	255	701
3	10	02	G 2	G 2	980	340	1080	125	125	1040	360	373	297	805
3	10	03	G 2	G 2	980	340	1080	125	125	1340	360	373	297	805
3	10	04	G 2	G 2	980	340	1080	125	125	1340	360	373	297	805
3	10	06	G 2	G 2	980	340	1080	125	125	1340	360	373	297	805
3	10	08	G 2	G 2	980	340	1080	125	125	1340	360	373	297	805
3	10	11	G 2	G 2	980	340	1080	125	125	1340	360	373	297	805
3	15	02	PN 16	PN 16	980	340	1055	125	125	1340	360	408	332	938
3	15	03	PN 16	PN 16	980	340	1055	125	125	1340	360	408	332	938
3	15	04	PN 16	PN 16	980	340	1055	125	125	1340	360	408	332	938
3	15	06	PN 16	PN 16	980	340	1055	125	125	1590	360	408	332	938
3	15	08	PN 16	PN 16	980	340	1055	125	125	1590	360	408	332	938

HU Economy Line VFD MMe Di



Main applications

- Spray irrigation systems
- General irrigation systems
- Service water supply systems
- Domestic water supply
- Rainwater harvesting
- Water supply systems

Fluids handled

- Drinking water
- Service water
- Cooling water
- Fluids not chemically or mechanically aggressive to the materials

Operating data

Operating properties

Characteristic	Value	
Flow rate	Q [m ³ /h]	≤ 18 ⁶⁾
	Q [l/s]	≤ 5
Head	H [m]	≤ 57
Fluid temperature	T _{min.} [°C]	≥ 0
	T _{max.} [°C]	≤ +40
Operating pressure	p [bar]	≤ 10
Inlet pressure	p _{inl} [bar]	≤ 5 ⁷⁾

Design details

Design

- Fully automatic pressure booster system
- Variable speed operation
- Baseplate-mounted

- Membrane-type accumulator (direct-flow) to DIN 4807-5 on the discharge side, approved for drinking water, with shut-off element and drain valve.
- One or more vertical high-pressure pumps with variable speed system
- Hydraulic components made of stainless steel / brass for high operating reliability
- Lift check valve for each pump
- Pressure gauge for pressure indication
- Electronic dry running protection
- Pressure transmitter on the discharge side
- Anti-vibration pads per system

Multiple pump system

- Discharge-side gate valve per pump
- Suction-side gate valve per pump
- Suction-side manifold and discharge-side manifold made of stainless steel

Installation

- Stationary dry installation

Drive

- Electric motor
- Enclosure IP55

VFD MMe Di

- Efficiency class IE3 to IEC 60034-30

VFD MM Di

- Efficiency class IE5 to IEC 60034-30

Automation

- One frequency inverter per pump
- Motor protection switch per pump
- Control cabinet IP54

VFD MM Di

- Display on each drive
- Fault message signalling contact per pump
- Operation signalling contact per pump

6) Without stand-by pump
7) For higher inlet pressures contact the manufacturer.

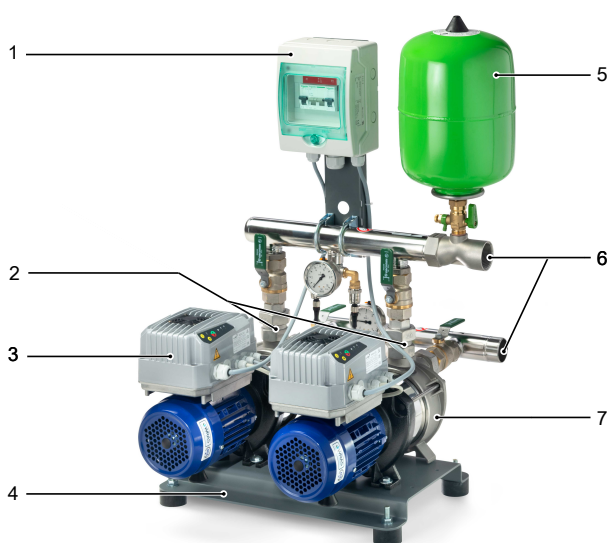
Designation

Example: Economy line HU2 DPHM6/6 B VFD MMe Di

Designation key

Code	Description
Economy line	Type series
HU2	Number of pumps
DPHM6	Pump size
6 B	Number of pump stages
VFD MMe Di	Design
	VFD MMe Di Variable speed pressure booster system

Configuration and function



As long as the pressure booster system is in operation, the pumps are started and stopped as a function of demand (standard setting). In this way it is ensured that the individual pumps operate only in line with actual demand. The use of variable speed pumps reduces wear as well as the frequency of pump starts in parallel operation.

If a duty pump fails, the next pump is started up immediately. A fault is output, which can be reported via volt-free contacts (e.g. to the control station).

If the demand drops towards 0, the pressure booster system slowly runs down to the stop point and stops.

As standard, one of the pumps is on stand-by. The control system defines each of the pumps as stand-by pump in alternation. This prevents stagnation of water in any of the pumps.

The pressure booster system is designed with dry running protection.

Function

Manual mode

In manual mode, a minimum flow is required to protect the pump against overheating.

Fig. 15: Configuration

1	Fuse box
2	Check valves
3	Frequency inverter
4	Baseplate
5	Accumulator
6	Connections
7	Pump

Design

The fully automatic pressure booster system pumps the fluid to the consumer installations in the set pressure range using one or two non-self-priming horizontal high-pressure pumps (7).

Function

Automatic mode

One or more pumps (2) are controlled and monitored by motor-mounted frequency inverters.

As the demand increases or decreases, pumps are started and stopped automatically.

As soon as the demand increases again after one pump has been stopped, another pump which has not been in operation before is started up.

The stand-by pump is also included in the alternating cycle.⁸⁾

The standard setting is for the pressure booster system to start automatically as a function of pressure; the actual pressure is measured by an analog pressure measuring device (pressure transmitter).

8) Multiple pump systems only

Materials

Overview of available materials

Component	Material
Pump	
Pump casing	1.4301
Pump shroud	1.4301
Hydraulic system	1.4301
Sealing element	EPDM
Mechanical seal	To EN 12756
Primary ring	Carbon graphite
Mating ring	Aluminium oxide
Elastomer	EPDM
Accumulator	Connection made of stainless steel, flow through valve to DIN 4807-5
Membrane	Approved for drinking water
Piping	1.4301
Baseplate and support	Steel, powder-coated
Electrical connection box	Plastic

Product benefits

- Plug-and-play design for straightforward commissioning
- Very compact, space-saving design
- Energy-efficient operation and constant pressure ensured by speed control of all pumps.
- Corrosion resistance provided by powder-coated materials and stainless steel
- Integral dry running protection for reliable operation

Certifications

Overview

Label	Effective in:	Comment
	France	Approved in accordance with the French drinking water regulation
	United Kingdom	Approved in accordance with the UK drinking water regulation

Globe valves and swing check valve:

	Germany	Approved in accordance with German drinking water regulation
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Selection information

Selection example

Requirements:

Specified duty point at:

- Flow rate: 4 m³/h
- Head: 50 m
- Inlet pressure: 1 bar

Solution:

1. Subtract the inlet pressure of 1 bar (approx. 10 m) from the head.
⇒ This results in a required head of 40 m.
2. Transfer the values to the characteristic curves diagram to select the corresponding pump.
⇒ This results in the selection of a HU1 DPHM4 /6 VFD MMe.

Technical data

Hydro-Unit Economy Line VFD MMe Di

HU1 single-pump system

VFD MMe Di = variable speed pressure booster system

1 × 230 V ± 10 %

Dry running protection = via power factor, external contact (standard) and switch (optional)

50 Hz

Size	Number of pumps	Design	Number of stages	P _N	Motor efficiency class	I _N	I _A /I _N	Frequency of [x/h] starts	I _{max} System [A]	I _{max} Overcurrent protection [A]	Sound pressure level [dB(A)]	Enclosure	p	PN	[kg]	Mat. No.
				[kW]		[A]							[bar]			
DPHM2	1	VFD MMe	6	0,55	IE -	2,3	-	50	4,5	-	60	IP55	5,5	10	27	SD1H020605001F
DPHM4	1	VFD MMe	6	1,10	IE3	4,2	-	50	7,5	-	55	IP55	4,5	10	31	SD1H040605001F
DPHM6	1	VFD MMe	6	1,50	IE3	5,1	-	50	11	-	55	IP55	4	10	35	SD1H060605001F

HU2 multiple pump system

VFD MMe Di = variable speed pressure booster system

3 × 400 V + N ± 10 %

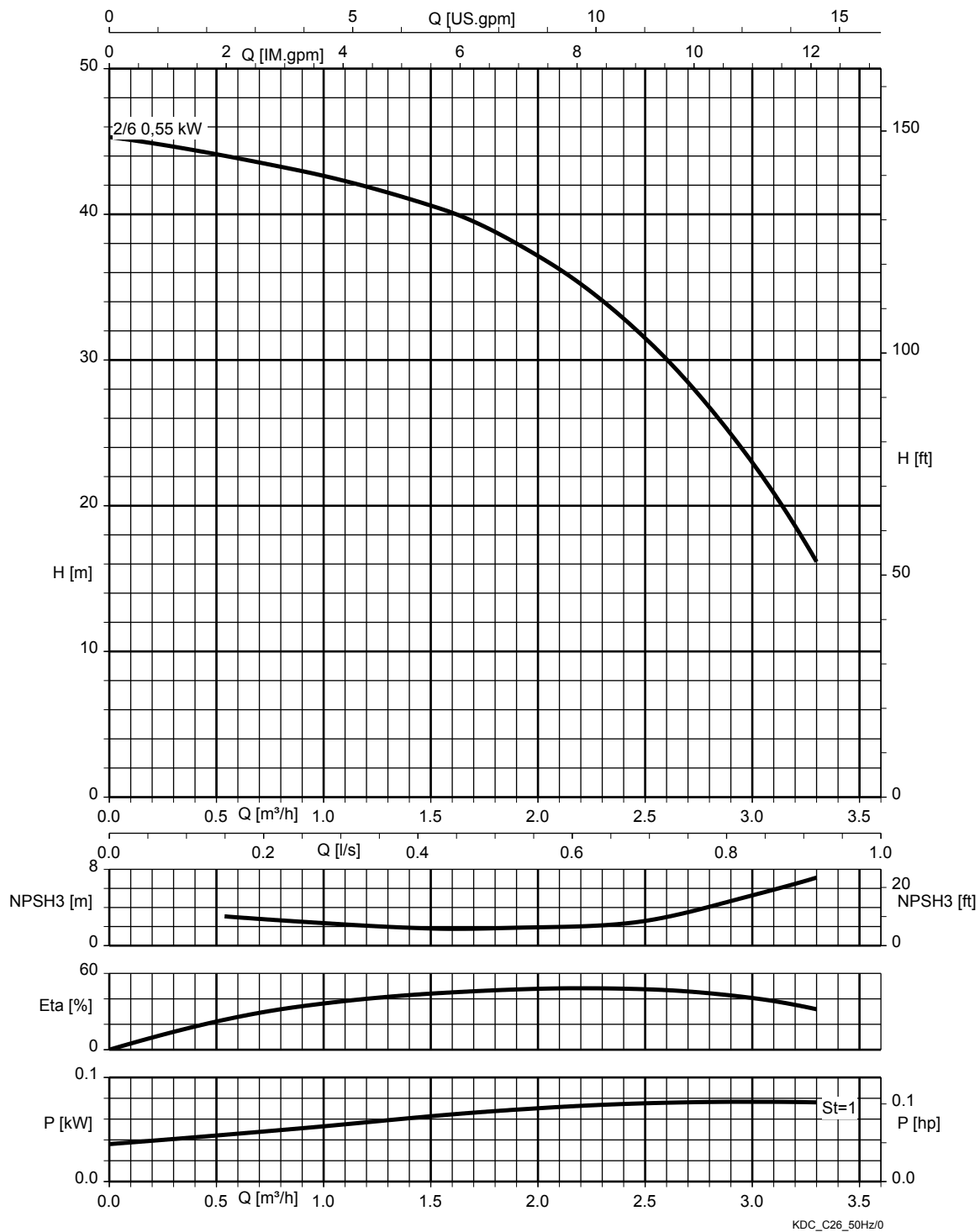
Dry running protection = via power factor, external contact (standard) and switch (optional)

50 Hz

Size	Number of pumps	Design	Number of stages	P _N	Motor efficiency class	I _N	I _A /I _N	Frequency of [x/h] starts	I _{max} System [A]	I _{max} Overcurrent protection [A]	Sound pressure level [dB(A)]	Enclosure	p	PN	[kg]	Mat. No.
				[kW]		[A]							[bar]			
DPHM2	2	VFD MMe	6	0,55	IE -	2,3	-	50	9	25	60	IP55	5,5	10	56	SD2H020605001F
DPHM4	2	VFD MMe	6	1,10	IE3	4,2	-	50	14	25	55	IP55	4,5	10	64	SD2H040605001F
DPHM6	2	VFD MMe	6	1,50	IE3	5,1	-	50	22	25	55	IP55	4	10	71	SD2H060605001F

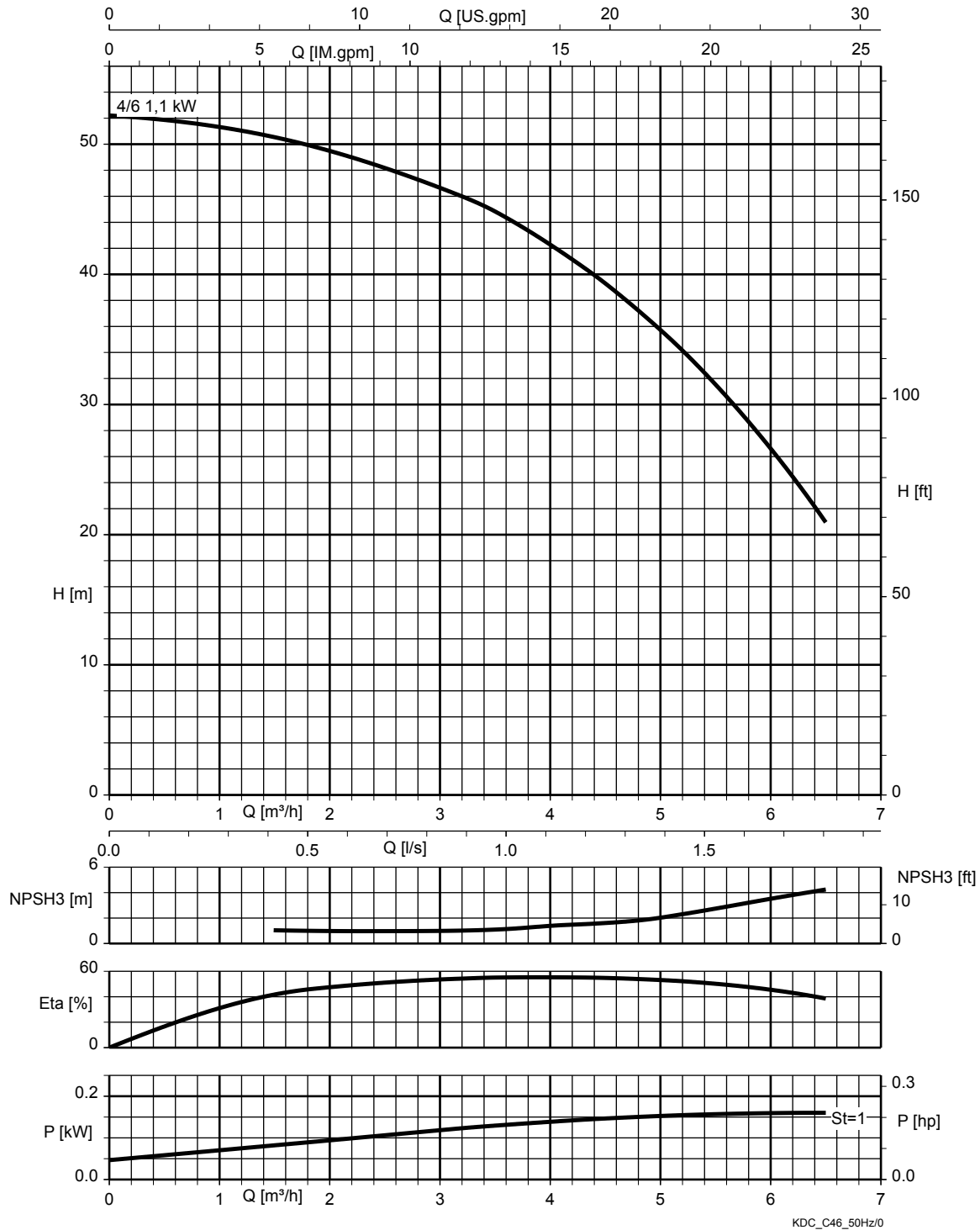
Characteristic curves

Hydro-Unit Economy Line, DPHM2 /6, VFD MMe Di, n = 2900 rpm



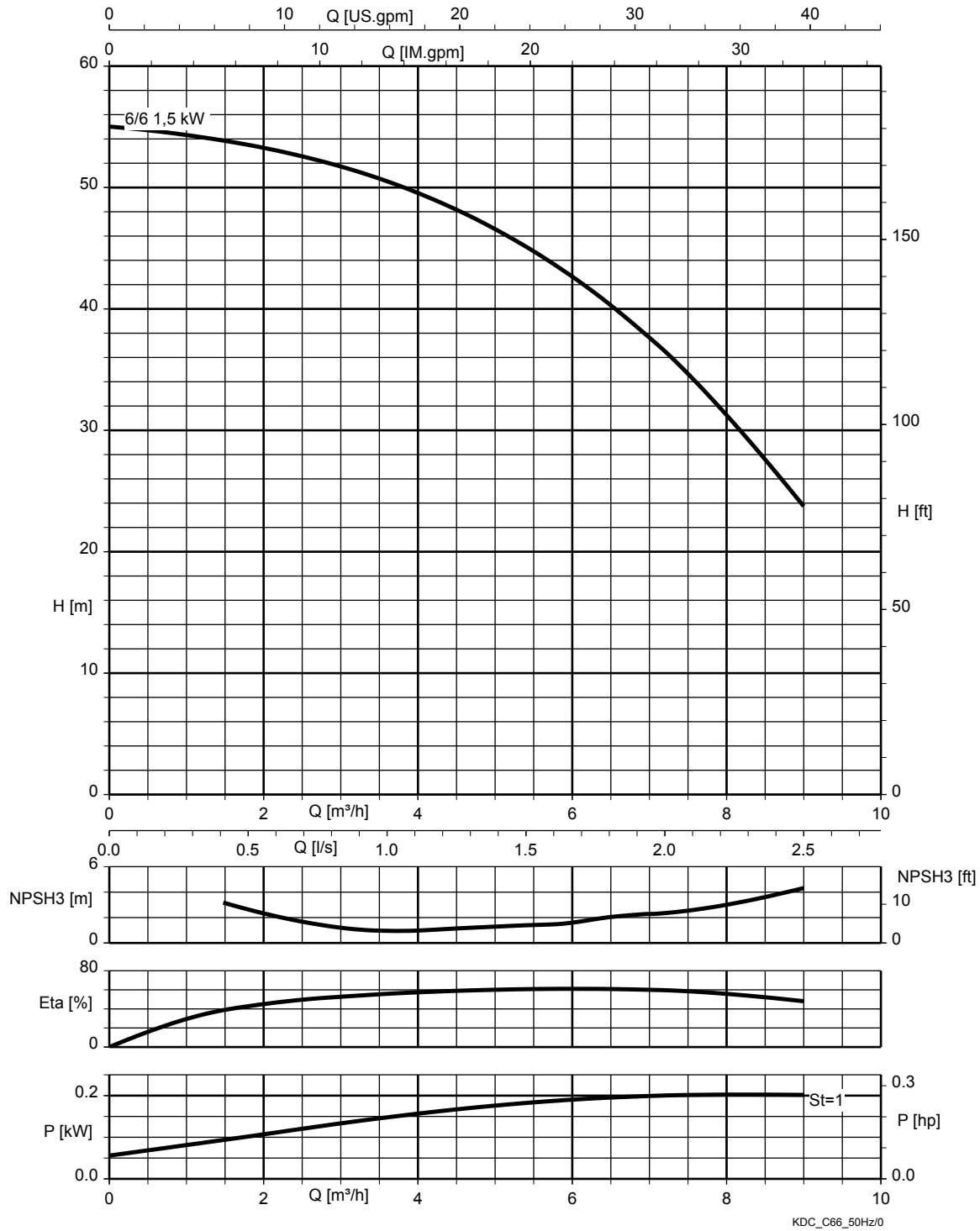
St = 1 | P per stage

Hydro-Unit Economy Line, DPHM4 /6, VFD MMe Di, n = 2900 rpm



St = 1 | P per stage

Hydro-Unit Economy Line, DPHM6 /6, VFD MMe Di, n = 2900 rpm



St = 1 | P per stage

Dimensions and connections

Hydro-Unit Economy Line HU1 DPHM_ /6 VFD MMe Di

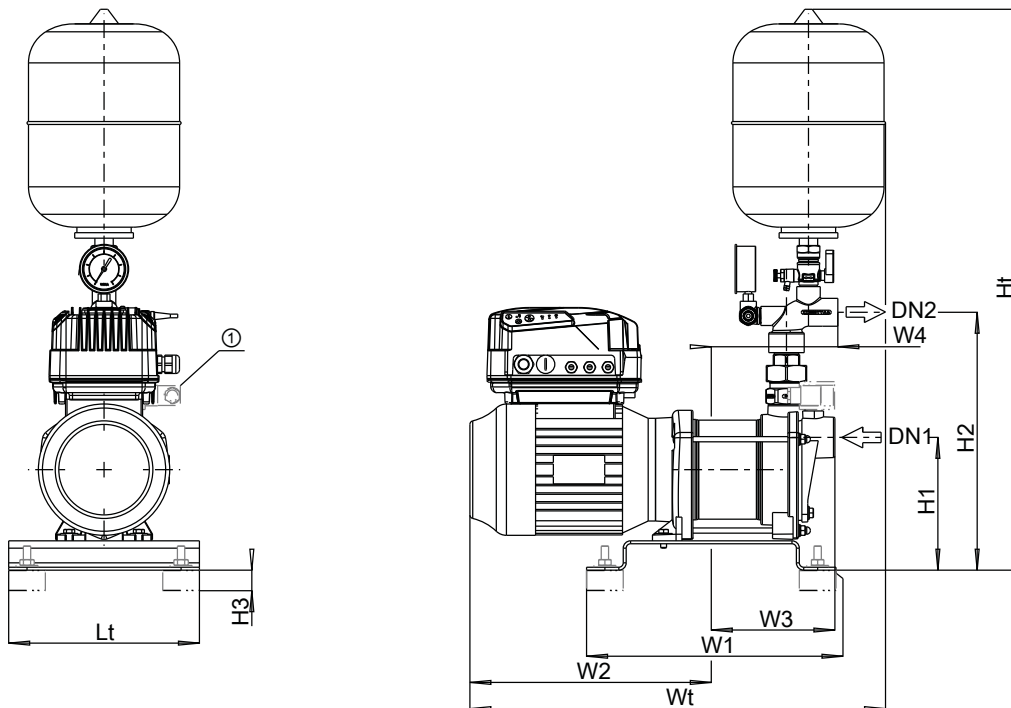


Fig. 16: Dimensions

①	Optional: pressure switch
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Dimensions [mm] and connections

Size	Number of pumps	Number of stages	DN1	DN2	Lt	H1	H2	H3	Ht	W1	W2	W3	W4	Wt
DPHM2	1	6	G 1 1/4	G 1	260	181	350	28	760	340	254	151	155	510
DPHM4	1	6	G 1 1/4	G 1	260	181	350	28	760	340	329	151	155	552
DPHM6	1	6	G 1 1/4	G 1	260	181	350	28	760	340	329	169	173	567

Hydro-Unit Economy Line HU2 DPHM_ /6 VFD MMe Di

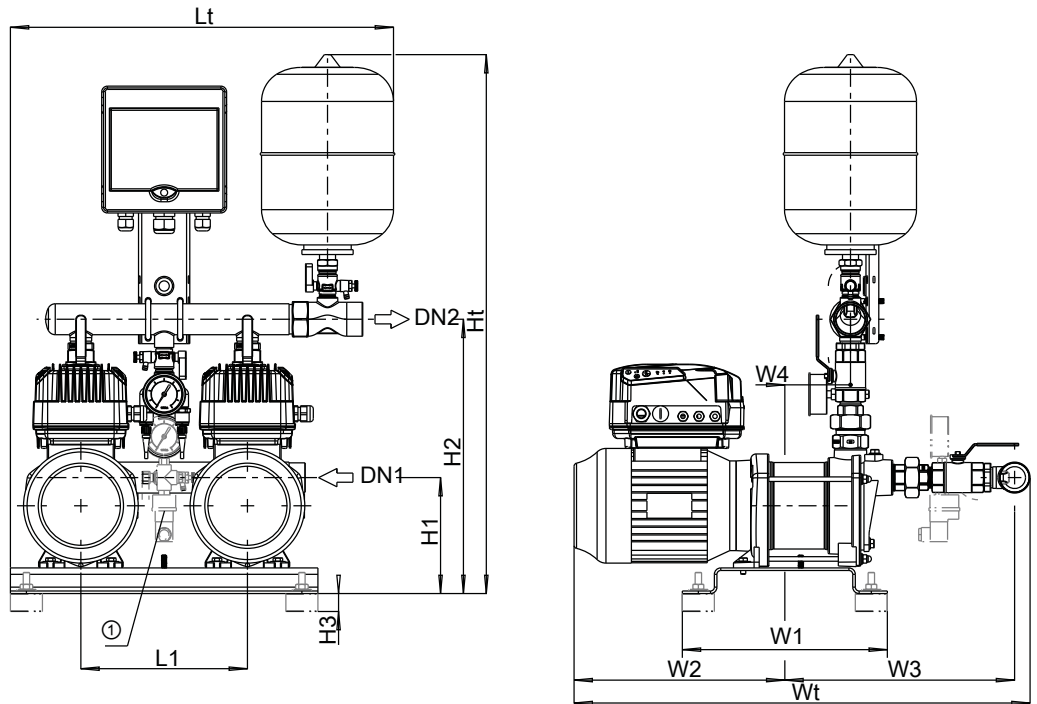


Fig. 17: Dimensions

①	Optional: pressure switch
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Dimensions [mm] and connections

Size	Number of pumps	Number of stages	DN1	DN2	L1	Lt	H1	H2	H3	Ht	W1	W2	W3	W4	Wt
DPHM2	2	6	G 1 1/2	G 1 1/2	260	598	181	418	28	837	320	289	341	85	654
DPHM4	2	6	G 1 1/2	G 1 1/2	260	598	181	418	28	837	320	333	341	85	698
DPHM6	2	6	G 1 1/2	G 1 1/2	260	598	181	418	28	837	320	329	359	103	712

DP Pumps

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