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ZDS

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ZDS
pump innovation

THE 4” SUBMERSIBLE PUMPS **SPECIALIST**

ZDS, headquartered in Padua, is specialized in the design and manufacture of 4” submersible pumps for water treatment and distribution; electric motors; electronic control systems and accessories.

ZDS products are manufactured to ISO 9001 standards: to achieve the quality objectives, to be innovative and to meet customer requirements.

From the very beginning, the company has been focused on the development of automatic and innovative complete solutions thanks to built-in electronic protections that are ready to use, economical and easy to install.

Innovative ideas have been supported by technical know-how and organizational skills gained from long-term experience which is rooted in the know-how of some historic manufacturers in the hydraulic field.

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ZDS
pump innovation

Basic instructions for the selection of a submersible pump:

1. Delivery (Q)

When you select a submersible pump and you do not know the real delivery of the borehole, it is recommended to consider the smallest quantity of water which is necessary for that installation (Q = delivery of water). If the quantity of water you draw is bigger than the one the borehole can deliver, the borehole itself might be damaged, even if the dry running protection of the pump is activated.
Regarding irrigation and other possible uses of water instead, it is necessary to consider the data provided by the manufacturer of the plant or equipment.

2. Pressure

In order to ensure the correct operating working pressure to the highest point of the plant, we advise you to make the calculation following described criteria for the determination of the pressure required by the pumps: **H** = **A** + **B** + **C**

H: Total Head, total dynamic pressure + safety factor 3%

A: maximum difference between the water surface and the ground with pump in action

B: distance from the ground to the highest point of use

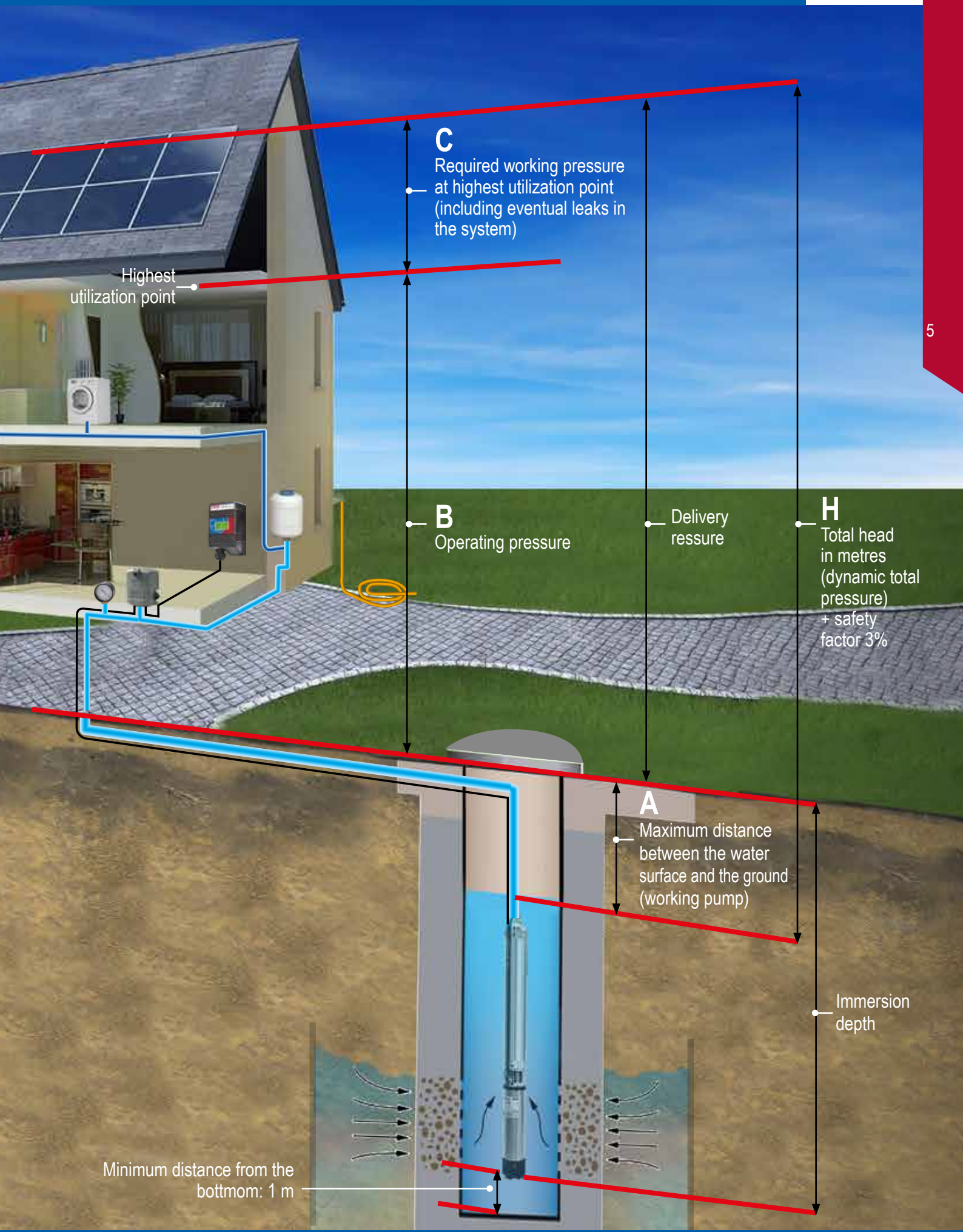
C: pressure required to the highest point of use + head losses

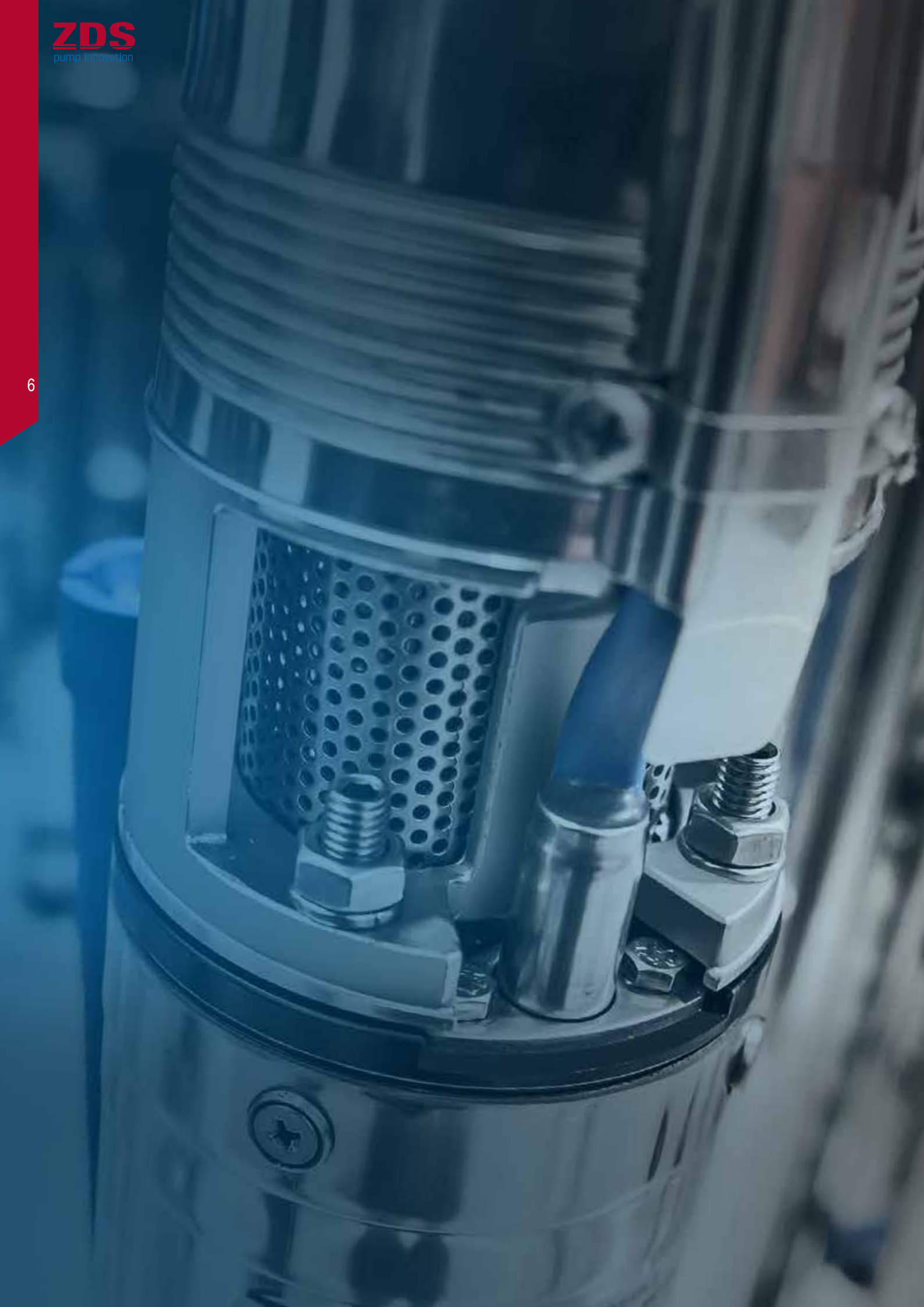
The total dynamic pressure (H) refers to the minimum pressure guaranteed. It may be influenced by the dynamic water level of the well, caused by the variation of the groundwater while the pump is running. In this case it is necessary to calculate correctly the dynamic water level of the well in order to avoid too much pressure for the user. As far as it relates to irrigation and other possible uses of water instead, it is necessary to consider the data provided by the manufacturer of the plant or equipment.

Example of head losses every 100 mt of straight pipeline

Material			Galvanized steel	Polyethylene PE 100		Galvanized steel	Polyethylene PE 100		Galvanized steel	Polyethylene PE 100		Galvanized steel	Polyethylene PE 100		Galvanized steel	Polyethylene PE 100	
DN (mm) External diameter			25	32		32	40		40	50		50	63		65	75	
Nominal Ø			1"			1" 1/4			1" 1/2			2"			2" 1/2		
Internal Ø (mm)			27	PN16 26	PN25 23.2	35.8	PN16 32.6	PN25 29	41.3	PN16 40.8	PN25 36.2	52.5	PN16 51.4	PN25 45.8	68	PN16 61.4	PN25 54.4
Delivery (Q)	m^3/h	l/min	METERS														
	0.6	10	0.7	0.5	0.9	0.2	0.2	0.3	-	-	0.1	-	-	-	-	-	-
	0.9	15	1.6	1.1	1.9	0.4	0.4	0.6	0.2	0.1	0.2	-	-	-	-	-	-
	1.2	20	2.6	1.8	3.2	0.7	0.6	1.1	0.4	0.2	0.4	-	-	-	-	-	-
	1.5	25	3.8	2.9	5.0	1.0	1.0	1.7	0.5	0.3	0.6	0.1	-	0.1	-	-	-
	1.8	30	5.3	4.0	6.9	1.4	1.3	2.3	0.7	0.4	0.8	0.2	0.1	0.2	-	-	0.1
	2.1	35	6.9	5.2	9.1	1.8	1.7	3.1	0.9	0.6	1.0	0.3	0.2	0.3	-	-	0.1
	2.4	40	8.8	6.8	11.9	2.3	2.3	4.0	1.2	0.8	1.4	0.4	0.3	0.4	-	0.1	0.2
	3.0	50	13.1	10.1	17.6	3.4	3.4	5.9	1.7	1.1	2.0	0.5	0.4	0.6	0.1	0.15	0.3
	3.6	60	18.3	14.3	24.9	4.7	4.7	8.4	2.4	1.6	2.8	0.8	0.5	0.9	0.2	0.2	0.4
	4.2	70	24.2	19.1	33.3	6.2	6.3	11.2	3.1	2.2	3.8	1.0	0.7	1.2	0.3	0.3	0.5
	4.8	80	30.9	24.2	42.1	7.9	8.0	14.2	4.0	2.7	4.8	1.3	0.9	1.5	0.3	0.4	0.7
	5.4	90	38.3	30.2	52.7	9.8	10.0	17.8	4.9	3.4	6.0	1.6	1.1	1.9	0.4	0.5	0.8
	6.0	100	46.5	36.9	-	11.9	12.3	21.7	6.0	4.1	7.4	1.9	1.3	2.3	0.5	0.6	1.0
	7.5	125	-	55.3	-	17.9	18.4	32.5	9.0	6.2	11.0	2.8	2.0	3.5	0.8	0.8	1.5
	9.0	150	-	-	-	25.1	25.8	45.7	12.5	8.7	15.5	3.9	2.8	4.9	1.1	1.2	2.1
	10.5	175	-	-	-	33.3	34.4	-	16.7	11.6	20.7	5.2	3.8	6.6	1.5	1.6	2.8
	12.0	200	-	-	-	42.8	43.9	-	21.4	14.7	26.4	6.6	4.8	8.4	1.9	2.0	3.6
	15.0	250	-	-	-	-	-	-	32.3	22.3	40.0	10.0	7.3	12.7	2.8	3.1	5.5
	18.0	300	-	-	-	-	-	-	44.5	30.5	57.5	13.8	10.2	17.8	3.9	4.3	7.7
	21.0	350	-	-	-	-	-	-	59.1	40.5	-	18.4	13.5	23.6	6.7	5.7	10.2
	24.0	400	-	-	-	-	-	-	-	52.0	-	23.6	17.3	30.3	10.0	7.3	13.1

We recommend to install a proper cooling jacket in installations bigger than 10 cm, to guarantee the correct motor cooling flow.
For every 90° pipe curve or valve losses to be added: 0,18 m
For every check valve losses to be added: 0,5 m
If possible we recommend not to exceed 15 m losses in 100 m of pipeline
Internal diameter of polyethylene pipeline: PE100 UNI 10910


C
Required working pressure at highest utilization point (including eventual leaks in the system)
Highest utilization point
B
Operating pressure
Delivery ressure
H
Total head in metres (dynamic total pressure) + safety factor 3%
A
Maximum distance between the water surface and the ground (working pump)
Immersion depth
Minimum distance from the bottmom: 1 m



4” HYDRAULIC PARTS

SUBMERSIBLE MOTORS

4” Hydraulic parts

Multistage centrifugal hydraulic parts designed to be used in 4” wells or larger, available in a wide range of deliveries and heads. Reliable, strong, easy to maintain, they are suitable in applications for lifting, distribution, and pressurization of water in water systems.

QS4P and QS4X main characteristics

Each single part of QS4P and QS4X has been designed with particular care to ensure the highest quality and reliability.

The pump impellers, diffusers, stage boxes, bushings and floating rings are made of special technopolymers, materials to improve performance, efficiency and to resist corrosion.
The non-return valve is integrated into the upper head to allow the weight of the water column and any water hammer to be discharged without damaging the impellers and diffusers.
The non-return valves have undergone very severe durability tests: more than 600.000 water hammers at 37 bars for QS4P and more than 1.000.000 water hammers at 37 bar for QS4X.
The stainless steel coupling shaft is oversized to better resist mechanical torque.
The special design of the hydraulic part, allows the pump to work even in heavy sand conditions, up to maximum of 120 g/m^3.
Thanks to its particular design, ZDS hydraulic part automatically eliminates any air contained in the submersible pump.

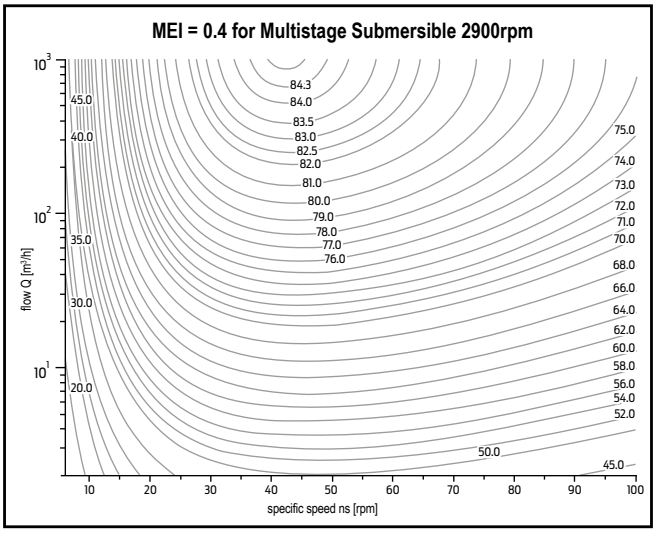
TECHNICAL SPECIFICATIONS	
Pumped liquid:	clean, free of solids and abrasives, non-viscous, non-aggressive, non-crystallised and chemically neutral.
Flange:	4” NEMA standard dimensions
Rated ambient temperature:	max. 40° C
Maximum quantity of suspended sand:	120 g/m^3
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Allowed range of water PH:	6,4 - 8,0
Outlet diameter:	1” ¼ G-F (1,2,3,5 series), 2” G-F (8,10 series)
Maximum pump overall diameter:	98 mm (cable cover included)
Maximum delivery (Q):	15.000 l/h
Maximum head (H):	300 m

What is so special about the design of our hydraulic parts?

The internal construction of our hydraulic parts primarily consists of the following components: technopolymer impellers with stainless steel support rings, technopolymer diffusers and stage-boxes, thermoplastic bushing and floating rings.
ZDS has selected this unique design in order to make the pump much more resistant to sand and equivalent abrasives.
Compared to conventional designs and similar products available on the market, the ZDS hydraulic part needs less starting torque to start pumping. This is why the ZDS pump is a particularly good option when you are challenged with unstable power supply.

ErP Ready - MEI Index:

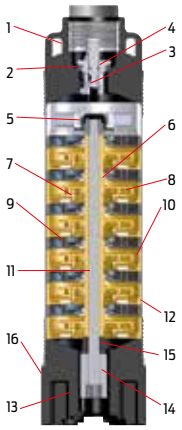
ZDS hydraulic parts from Series 1 to Series 5 are highly efficient and comply with the ErP Directive (Commission Regulation (EC) No 547/2012) which is effective from 1 January 2013. These hydraulic parts are classified/graduated in a new energy efficiency index (MEI).
Minimum Efficiency Index (MEI) is the dimensionless scale unit for hydraulic pump efficiency at best efficiency point (BEP), part load and overload.
The operation of ZDS hydraulic parts for clean water in variable points of the performance curve can be more efficient and cheap if it is controlled, for example, by an adjustable speed motor which adjusts the operation of the pump to the system.
Trimmed impeller diameter offer lower efficiency than full impeller diameter. Impeller trimming will make the submersible pump work in a fixed point with lower energy consumption. Minimum Efficiency Index (MEI) is based on the full diameter impeller.



QS4P

4” Hydraulic parts with pump head and lower support in TECHNOPOLYMER

- Pump head and lower support made of special material, strong and resistant to acid water corrosion (low pH value) and ferrous water.
- Extra mechanical resistance of the upper head is guaranteed by the double threaded stainless steel ring placed inside and outside of this component.
- Integrated filter inside the lower support.

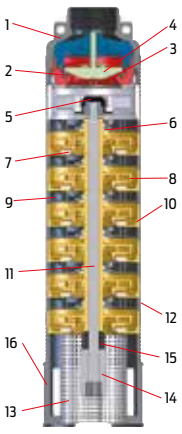


Pos.	COMPONENTS	MATERIALS
1	Upper head	PA 6.6
2	O-Ring	NBR
3	Complete valve	POM
4	Plate valve	POM
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stainless steel AISI 304 (DIN 1.4301)
12	Outer sleeve	Stainless steel AISI 304 (DIN 1.4301)
13	Filter	PA 6.6
14	Coupling	Stainless steel AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	PA 6.6
-	Cable cover	PVC

QS4X

4” Hydraulic parts with pump head and lower support in STAINLESS STEEL

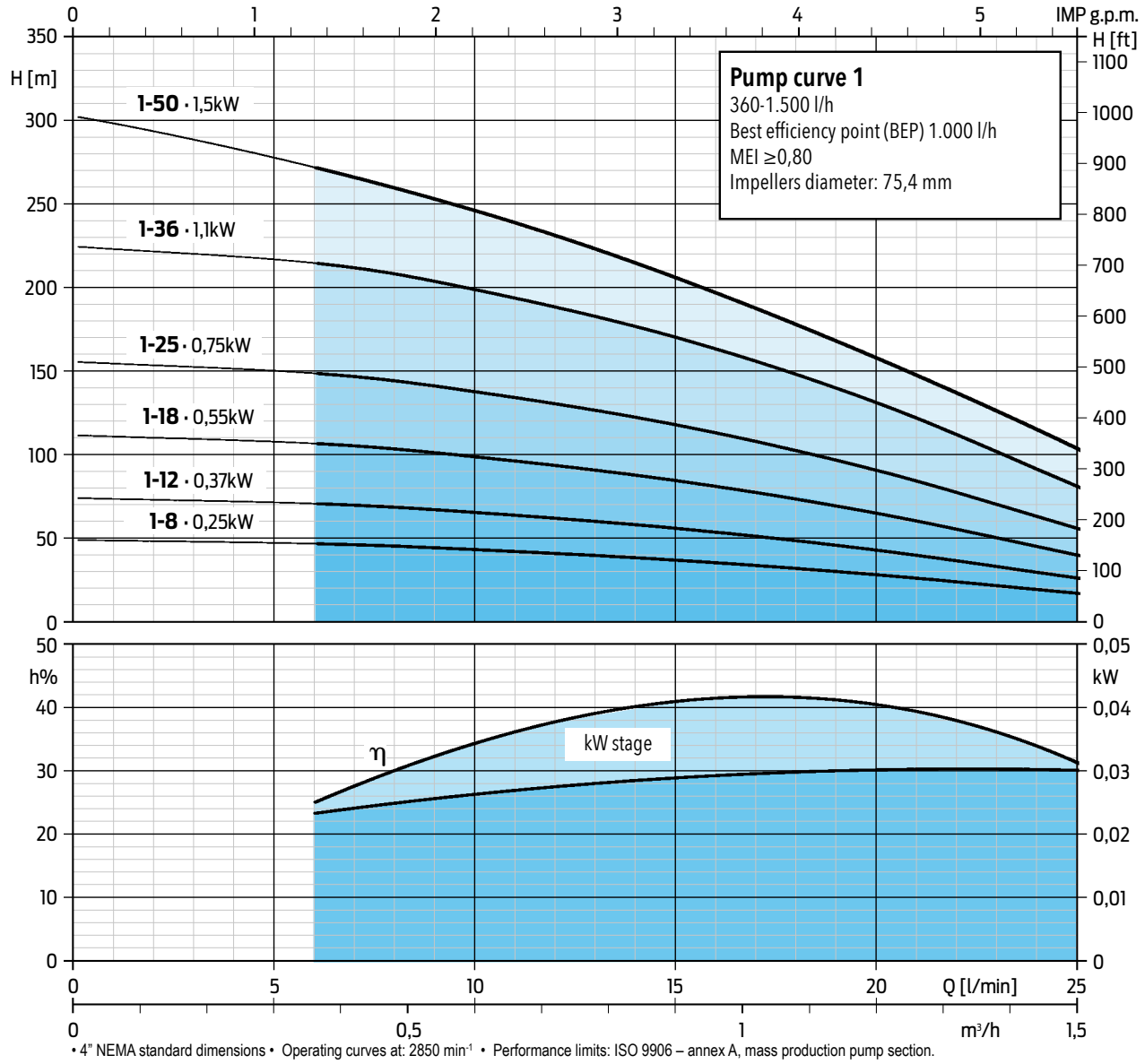
- Pump head available in 1-1/4” or 2” outlet diameter.
- Cable cover in stainless steel, to protect the power supply cable during installation.
- Removable stainless steel filter.



* Rimovibile

Pos.	COMPONENTS	MATERIALS
1	Upper head	Stainless steel AISI 304 (DIN 1.4301)
2	O-Ring	NBR
3	Complete valve	PA 6.6
4	Plate valve	PA 6.6
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stainless steel AISI 304 (DIN 1.4301)
12	Outer sleeve	Stainless steel AISI 304 (DIN 1.4301)
13	Filter	* Stainless steel AISI 304 (DIN 1.4301)
14	Coupling	Stainless steel AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	Stainless steel AISI 304 (DIN 1.4301)
-	Cable cover	Stainless steel AISI 304 (DIN 1.4301)

Hydraulic parts series 1



• 4" NEMA standard dimensions • Operating curves at: 2850 min^{-1} • Performance limits: ISO 9906 – annex A, mass production pump section.

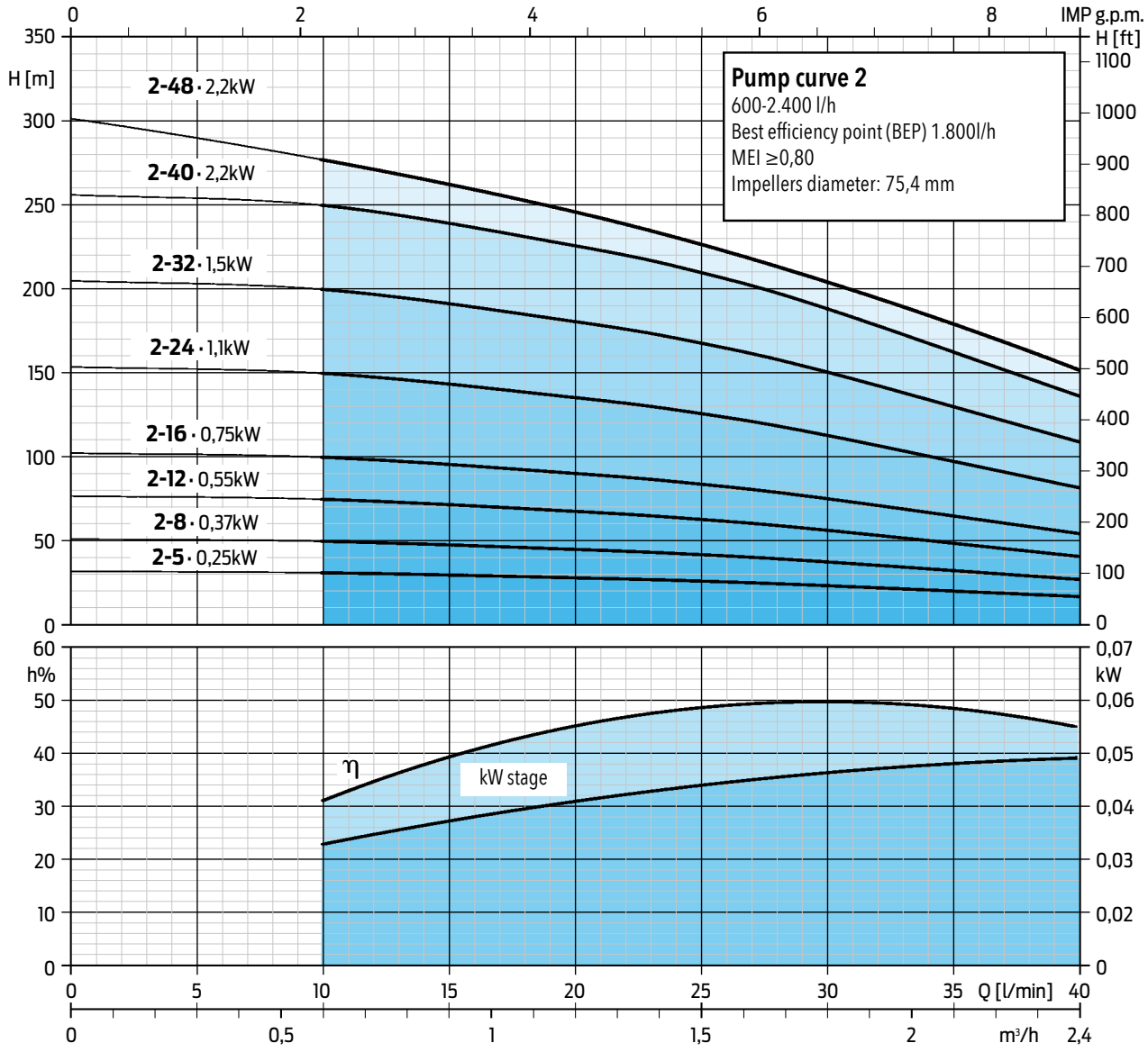
QS4P.1 Upper head and lower support in TECHNOPOLIMER

HYDRAULIC **TECHNOPOLYMER** Pump curve 1	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1}) Delivery (Q) – Ø Outlet diameter: 1" ¼ G-F						Lenght	Weight
			Power		Minimum Thrust	m³/h	0	0,36	0,6	1,2	1,5		
			kW	HP	F [N]	l/min	0	6	10	20	25	mm	kg
QS4P.1-8	181005008		0,25	0,33	1500	Total head in meters = H= dynamic total pressure	50,2	48	44,4	29,2	18	357	2,5
QS4P.1-12	181005012		0,37	0,5	1500		75,4	72	66,6	43,8	27	437	3
QS4P.1-18	181005018		0,55	0,75	1500		113	108	99,9	65,7	40,5	557	3,9
QS4P.1-25	181005025		0,75	1	1500		157	150	138,8	91,3	56,3	697	4,8

QS4X.1 Upper head and lower support in STAINLESS STEEL

HYDRAULIC **INOX** Pump curve 1	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1}) Delivery (Q) – Ø Outlet diameter: 1" ¼ G-F						Lenght	Weight
			Power		Minimum Thrust	m³/h	0	0,36	0,6	1,2	1,5		
			kW	HP	F [N]	l/min	0	6	10	20	25	mm	kg
QS4X.1-8	1810100081		0,25	0,33	1500	Total head in meters = H= dynamic total pressure	50,2	48	44,4	29,2	18	357	3,5
QS4X.1-12	1810100121		0,37	0,5	1500		75,4	72	66,6	43,8	27	437	4
QS4X.1-18	1810100181		0,55	0,75	1500		113	108	99,9	65,7	40,5	557	4,8
QS4X.1-25	1810100251		0,75	1	1500		157	150	138,8	91,3	56,3	697	5,7
QS4X.1-36	1810100361		1,1	1,5	2500		226,1	216	199,8	131,4	81	950	7,6
QS4X.1-50	1810100501		1,5	2	2500		300	280	260	170	106	1230	9,9

Hydraulic parts series 2



• 4" NEMA standard dimensions • Operating curves at: 2850 min^{-1} • Performance limits: ISO 9906 – annex A, mass production pump section.

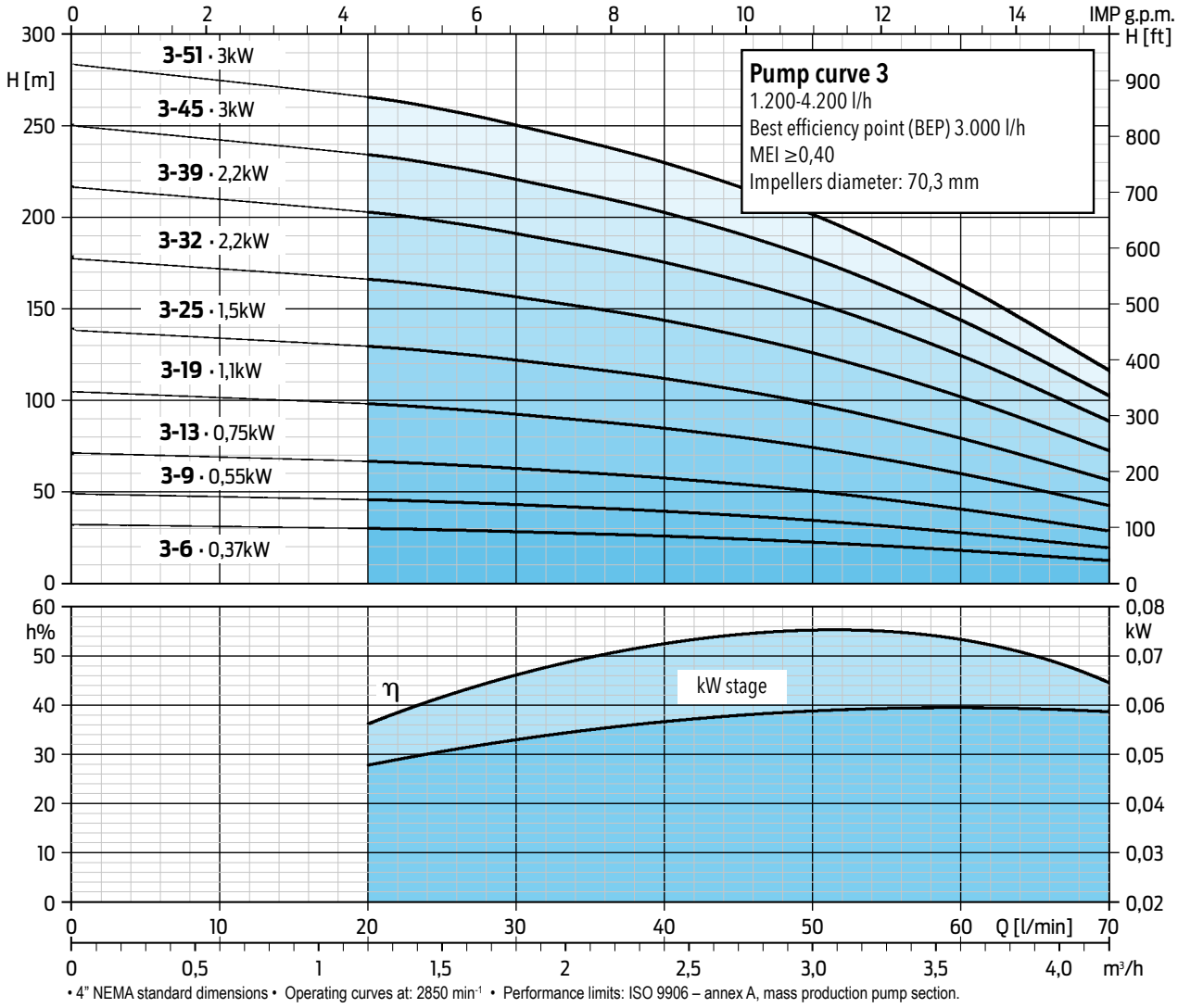
QS4P.2 Upper head and lower support in TECHNOPOLIMER

HYDRAULIC **TECHNOPOLYMER** Pump curve 2	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1}) Delivery (Q) – Ø Outlet diameter: 1" ¼ G-F							Lenght	Weight
			Power		Minimum Thrust	m³/h	0	0,6	1,2	1,5	1,8	2,4		
			kW	HP	F [N]	l/min	0	10	20	25	30	40	mm	kg
QS4P.2-5	181005105		0,25	0,33	1500	Total head in meters = H= dynamic total pressure	32	31,2	28,2	26,2	23,5	17,0	310	2,1
QS4P.2-8	181005108		0,37	0,5	1500		51,2	49,9	45,1	41,9	37,6	27,2	377	2,6
QS4P.2-12	181005112		0,55	0,75	1500		76,8	74,9	67,7	62,9	56,4	40,8	467	3,2
QS4P.2-16	181005116		0,75	1	1500		102,4	99,8	90,2	83,8	75,2	54,4	557	3,8
QS4P.2-24	181005124		1,1	1,5	2500		153,6	149,8	135,4	125,8	112,8	81,6	737	5,2

QS4X.2 Upper head and lower support in STAINLESS STEEL

HYDRAULIC **INOX** Pump curve 2	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1}) Delivery (Q) – Ø Outlet diameter: 1" ¼ G-F							Lenght	Weight
			Power		Minimum Thrust	m³/h	0	0,6	1,2	1,5	1,8	2,4		
			kW	HP	F [N]	l/min	0	10	20	25	30	40	mm	kg
QS4X.2-5	1810101051		0,25	0,33	1500	Total head in meters = H= dynamic total pressure	32	31,2	28,8	26,2	23,5	17	310	3,1
QS4X.2-8	1810101081		0,37	0,5	1500		51,2	49,9	45,1	41,9	37,6	27,2	377	3,6
QS4X.2-12	1810101121		0,55	0,75	1500		76,8	74,9	67,7	62,9	56,4	40,8	467	4,1
QS4X.2-16	1810101161		0,75	1	1500		102,4	99,8	90,2	83,8	75,2	54,4	557	4,8
QS4X.2-24	1810101241		1,1	1,5	2500		153,6	149,8	135,4	125,8	112,8	81,6	737	5,9
QS4X.2-32	1810101321		1,5	2	2500		204,7	199,7	180,5	167,7	150,4	108	917	7,7
QS4X.2-40	1810101401		2,2	3	3000		255,9	249,6	225,6	209,6	188	136	1130	8,5
QS4X.2-48	1810101481		2,2	3	4000		300	290	258	235	208	150	1310	9,9

Hydraulic parts series 3



• 4" NEMA standard dimensions • Operating curves at: 2850 min^{-1} • Performance limits: ISO 9906 – annex A, mass production pump section.

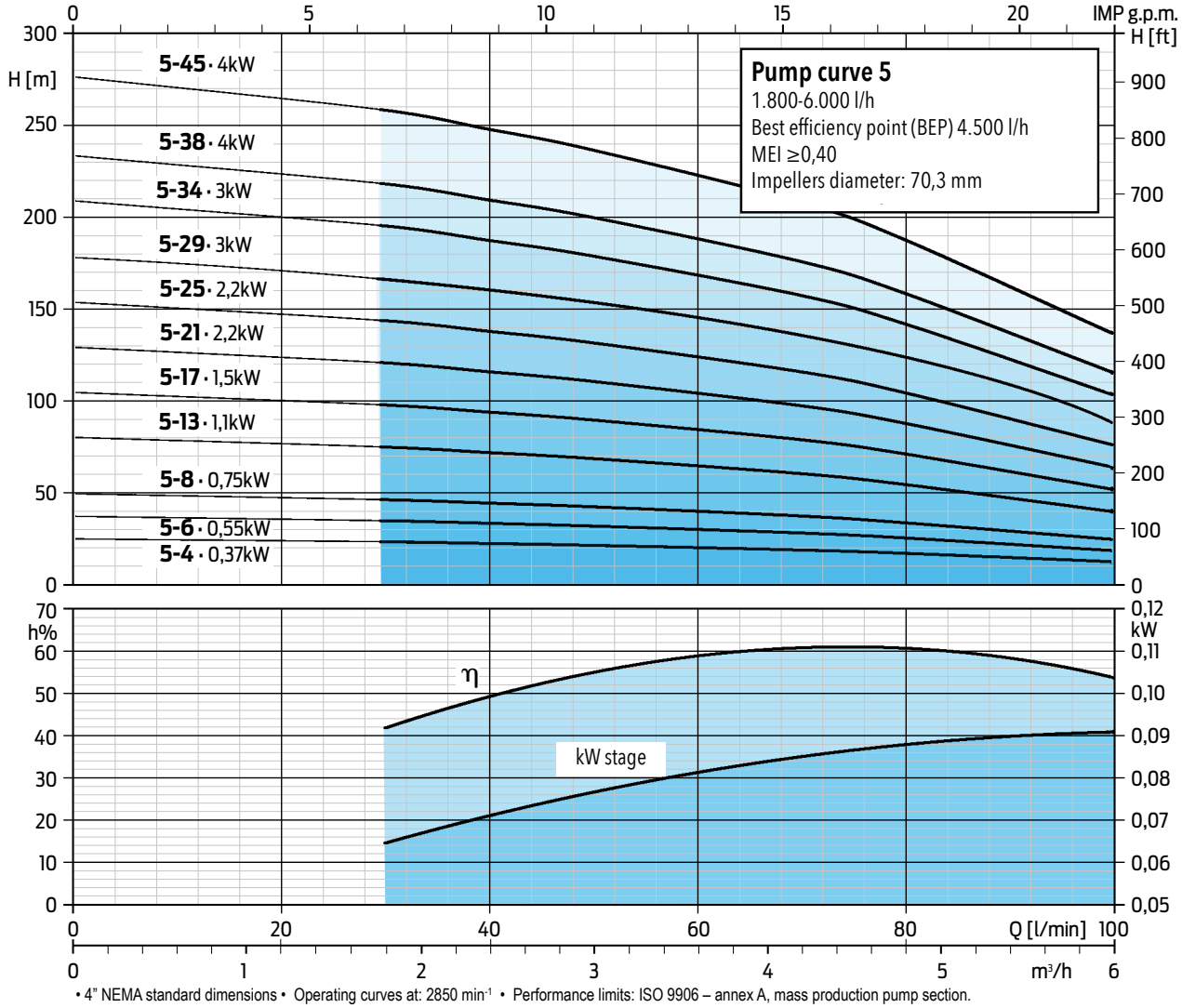
QS4P.3 Upper head and lower support in TECHNOPOLIMER

HYDRAULIC **TECHNOPOLYMER** Pump curve 3	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1})								Lenght	Weight
			Power		Minimum Thrust	Delivery (Q) – Ø Outlet diameter: 1" ¼ G-F									
						m³/h	0	1,2	1,5	1,8	2,4	3	4,2		
			kW	HP	F [N]	l/min	0	20	25	30	40	50	70	mm	kg
QS4P.3-6	181005206		0,37	0,5	1500	Total head in meters = H= dynamic total pressure	33,3	31,2	30,4	29,4	27	23,7	13,7	392	2,6
QS4P.3-9	181005209		0,55	0,75	1500		50	46,8	45,6	44,1	40,5	35,6	20,6	490	3,2
QS4P.3-13	181005213		0,75	1	1500		72,2	67,6	65,9	63,7	58,5	51,4	29,8	620	4
QS4P.3-19	181005219		1,1	1,5	1500		105,5	98,8	96,3	93,1	85,5	75,1	43,5	815	5,6
QS4P.3-25	181005225		1,5	2	2500		138,8	130	126,8	122,5	112,5	98,8	57,3	1010	6,7

QS4X.3 Upper head and lower support in STAINLESS STEEL

HYDRAULIC **INOX** Pump curve 3	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1})								Lenght	Weight
			Power		Minimum Thrust	Delivery (Q) – Ø Outlet diameter: 1" ¼ G-F									
						m³/h	0	1,2	1,5	1,8	2,4	3	4,2		
			kW	HP	F [N]	l/min	0	20	25	30	40	50	70	mm	kg
QS4X.3-6	1810102061		0,37	0,5	1500	Total head in meters = H= dynamic total pressure	33,3	31,2	30,4	29,4	27	23,7	13,7	392	3,6
QS4X.3-9	1810102091		0,55	0,75	1500		50	46,8	45,6	44,1	40,5	35,6	20,6	490	4,1
QS4X.3-13	1810102131		0,75	1	1500		72,2	67,6	65,9	63,7	58,5	51,4	29,8	620	5
QS4X.3-19	1810102191		1,1	1,5	1500		105,5	98,8	96,3	93,1	85,5	75,1	43,5	815	6,6
QS4X.3-25	1810102251		1,5	2	2500		138,8	130	126,8	122,5	112,5	98,8	57,3	1010	7,5
QS4X.3-32	1810102321		2,2	3	2500		177,6	166,4	162,2	156,8	144	126,4	73,3	1270	9,6
QS4X.3-39	1810102391		2,2	3	3000		216,5	202,8	197,7	191,1	175,5	154,1	89,3	1497	11
QS4X.3-45	1810102451		3	4	4000		249,8	234	228,2	220,5	202,5	177,8	103,1	1725	12,4
QS4X.3-51	1810102511		3	4	4000		283,1	265,2	258,6	249,9	229,5	201,5	116,8	1920	14,1

Hydraulic parts series 5



• 4" NEMA standard dimensions • Operating curves at: 2850 min^{-1} • Performance limits: ISO 9906 – annex A, mass production pump section.

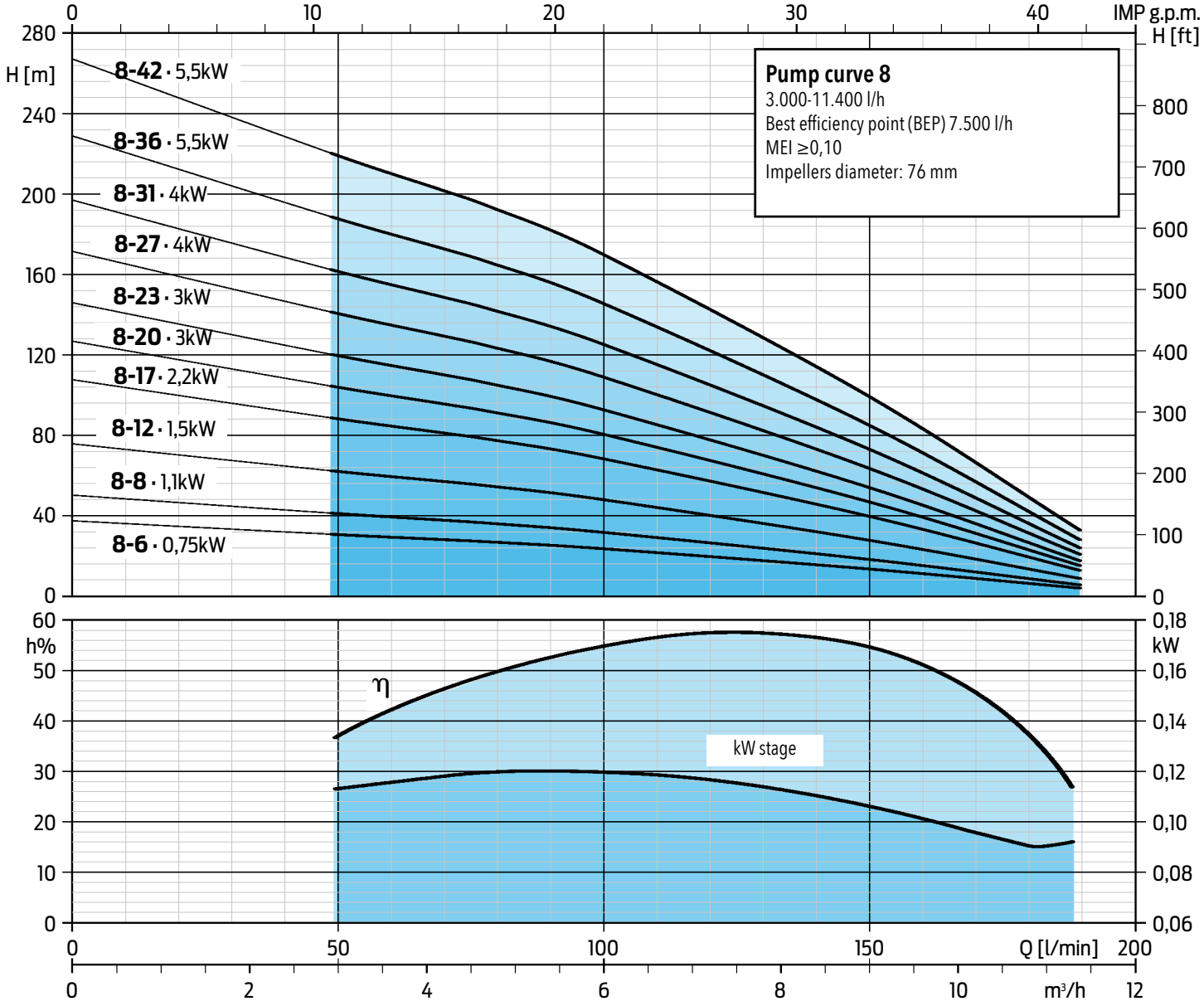
QS4P.5 Upper head and lower support in TECHNOPOLIMER

HYDRAULIC **TECHNOPOLYMER** Pump curve 5	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1}) Delivery (Q) – Ø Outlet diameter: 1" ¼ G-F								Lenght	Weight
			Power		Minimum Thrust	m³/h	0	1,8	2,4	3	4,2	4,8	6		
			kW	HP	F [N]	l/min	0	30	40	50	70	80	100	mm	kg
QS4P.5-4	181005304		0,37	0,5	1500	Total head in meters = H= dynamic total pressure	24,5	22,9	22	21	18,5	16,7	12,1	327	2,2
QS4P.5-6	181005306		0,55	0,75	1500		36,8	34,4	33	31,5	27,7	25	18,2	392	2,6
QS4P.5-8	181005308		0,75	1	1500		49,1	45,8	44	42	37	33,3	24,2	457	3
QS4P.5-13	181005313		1,1	1,5	1500		79,7	74,5	71,5	68,3	60,1	54,2	39,4	620	4,1
QS4P.5-17	181005317		1,5	2,0	2500		104,3	97,4	93,5	89,3	78,5	70,8	51,5	750	5
QS4P.5-21	181005321		2,2	3,0	2500		128,8	120,3	115,5	110,3	97	87,5	63,3	880	5,8
QS4P.5-25	181005325		2,2	3,0	2500		153,3	143,3	137,5	131,3	115,5	104,2	75,8	1010	6,7

QS4X.5 Upper head and lower support in STAINLESS STEEL

HYDRAULIC **INOX** Pump curve 5	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1}) Delivery (Q) – Ø Outlet diameter: 1" ¼ G-F								Lenght	Weight
			Power		Minimum Thrust	m³/h	0	1,8	2,4	3	4,2	4,8	6		
			kW	HP	F [N]	l/min	0	30	40	50	70	80	100	mm	kg
QS4X.5-4	1810103041		0,37	0,5	1500	Total head in meters = H= dynamic total pressure	24,5	22,9	22	21	18,5	16,7	12,1	327	3,2
QS4X.5-6	1810103061		0,55	0,75	1500		36,8	34,4	33	31,5	27,7	25	18,2	392	3,6
QS4X.5-8	1810103081		0,75	1	1500		49,1	45,8	44	42	37	33,3	24,2	457	4
QS4X.5-13	1810103131		1,1	1,5	1500		79,7	74,5	71,5	68,3	60,1	54,2	39,4	620	5,1
QS4X.5-17	1810103171		1,5	2	2500		104,3	97,4	93,5	89,3	78,5	70,8	51,5	750	6
QS4X.5-21	1810103211		2,2	3	2500		128,8	120,3	115,5	110,3	97	87,5	63,6	880	6,8
QS4X.5-25	1810103251		2,2	3	2500		153,3	143,3	137,5	131,3	115,5	104,2	75,8	1010	7,6
QS4X.5-29	1810103291		3	4	4000		177,9	166,2	159,5	152,3	134	120,8	87,9	1172	8,7
QS4X.5-34	1810103341		3	4	4000		208,5	194,8	187	178,5	157,1	141,7	103	1335	9,8
QS4X.5-38	1810103381		4	5,5	4000		233,1	217,1	209	199,5	175,6	158,3	115,1	1497	11,2
QS4X.5-45	1810103451		4	5,5	4000		276	257,9	247,5	236,3	207,9	187,5	136,4	1725	13

Hydraulic parts series 8



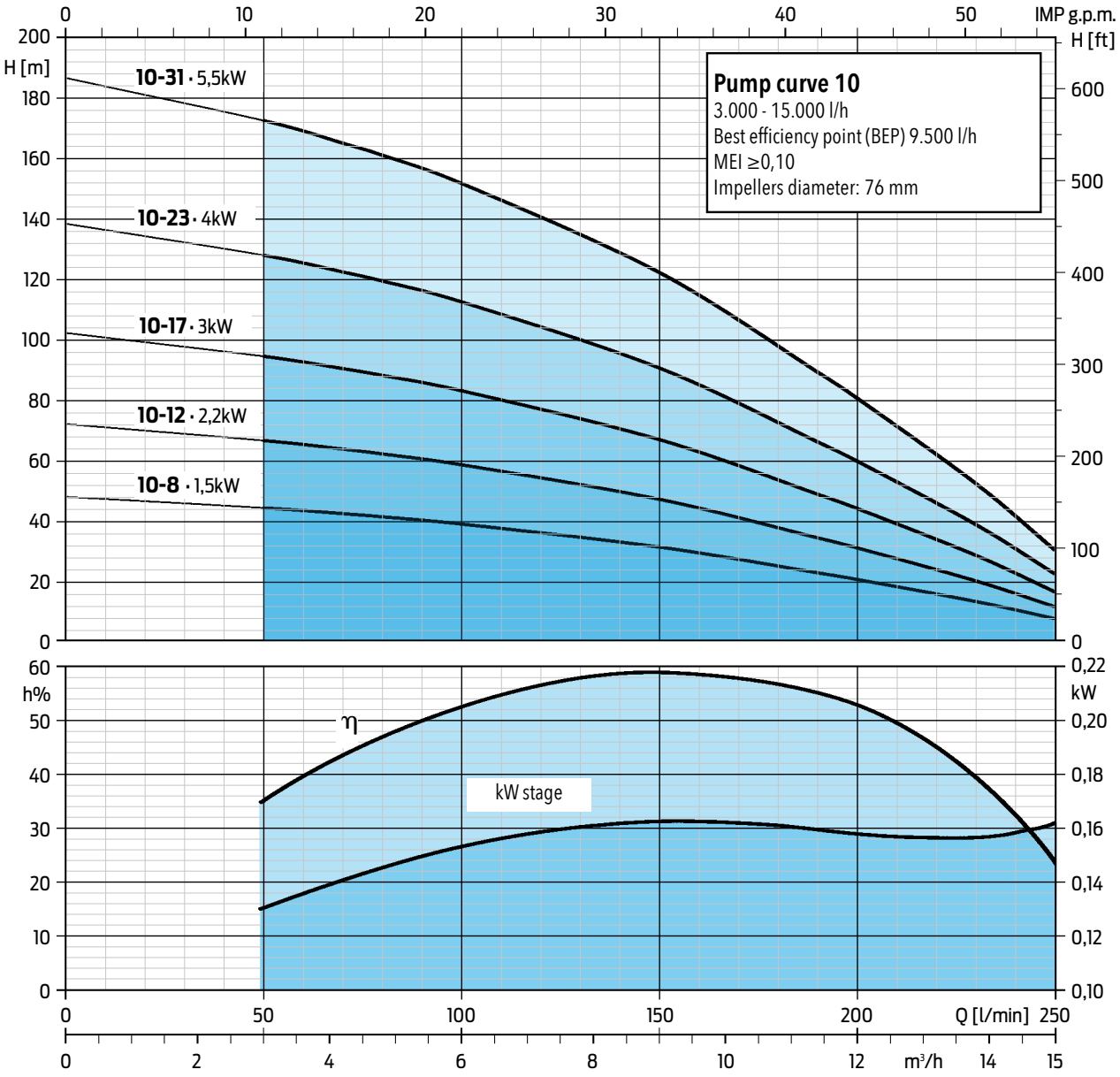
• 4" NEMA standard dimensions • Operating curves at: 2850 min^{-1} • Performance limits: ISO 9906 – annex A, mass production pump section.

QS4X.8 Upper head and lower support in STAINLESS STEEL

HYDRAULIC **INOX** Pump curve 8	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1}) Delivery (Q) – Ø Outlet diameter: 2" G-F							Lenght	Weight
			Power		Minimum Thrust	m³/h	0	3	4,8	6	9	11,4		
			kW	HP	F [N]	l/min	0	50	80	100	150	190	mm	kg
QS4X.8-6	1810104061		0,75	1	1500	Total head in meters = H= dynamic total pressure	38,4	31,5	27,7	24,5	14,4	4,8	512	4,2
QS4X.8-8	1810104081		1,1	1,5	1500		51,2	42	36,9	32,7	19,2	6,4	617	4,8
QS4X.8-12	1810104121		1,5	2	1500		76,8	63	55,3	49	28,8	9,6	827	6,2
QS4X.8-17	1810104171		2,2	3	2500		108,8	89,3	78,4	69,4	40,8	13,6	1122	7,8
QS4X.8-20	1810104201		3	4	2500		128	105	92,2	81,7	48	16	1280	8,9
QS4X.8-23	1810104231		3	4	2500		147,2	120,8	106	93,9	55,2	18,4	1437	9,8
QS4X.8-27	1810104271		4	5,5	4000		172,8	141,8	124,5	110,2	64,8	21,6	1680	11,4
QS4X.8-31	1810104311		4	5,5	4000		198,4	162,8	142,9	126,6	74,4	24,8	1890	12,6
QS4X.8-36	1810104361		5,5	7,5	4000		230,4	189	166	147	86,4	28,8	2185	14,4
QS4X.8-42	1810104421		5,5	7,5	4000		268,8	220,5	193,6	171,5	100,8	33,6	2500	16,3

PRODUCT NOT AVAILABLE FOR THE EUROPEAN MARKET

Hydraulic parts series 10



• 4" NEMA standard dimensions • Operating curves at: 2850 min^{-1} • Performance limits: ISO 9906 – annex A, mass production pump section.

QS4X.10 Upper head and lower support in STAINLESS STEEL

HYDRAULIC **INOX** Pump curve 10	CODE		COUPABLE MOTORS 50Hz n~2850 min^{-1}			HYDRAULIC CHARACTERISTICS (n~2850 min^{-1}) Delivery (Q) – Ø Outlet diameter: 2" G-F									Lenght	Weight
			Power		Minimum Thrust	m³/h	0	3	4,8	6	9	11,4	13,8	15		
			kW	HP	F [N]	l/min	0	50	80	100	150	190	230	250	mm	kg
QS4X.10-8	1810105081		1,5	2	1500	Total head in meters = H= dynamic total pressure	48,2	44,4	41,6	39,2	31,6	23,1	13,6	7,9	617	4,8
QS4X.10-12	1810105121		2,2	3	1500		72,3	66,6	62,4	58,8	47,4	34,7	20,4	11,9	827	6,2
QS4X.10-17	1810105171		3	4	2500		102,4	94,4	88,4	83,3	67,2	47,1	28,9	16,8	1122	7,8
QS4X.10-23	1810105231		4	5,5	4000		138,6	127,7	119,6	112,7	90,9	66,4	39,1	22,8	1437	9,8
QS4X.10-31	1810105311		5,5	7,5	4000		186,8	172,1	161,2	151,9	122,5	89,5	52,7	30,7	1890	12,7

PRODUCT NOT AVAILABLE FOR THE EUROPEAN MARKET

O2 4” oil-cooled single-phase submersible motors

O2 2-wire single-phase motor

Electric motors from series O2 are 2 pole asynchronous single-phase submersible motors, **designed to operate coupled to ZDS 4” hydraulic parts**. Strong and reliable, they are made of materials suitable for contact with water and oil-cooled by FDA - Food Drug Administration approved dielectric fluid. O2 motors are equipped with a special and unique start and run capacitor, which is designed to guarantee a long-life to the motor and avoid the installation of an external control panel. They also come with a special and manually resettable built-in thermal protection, which stops the motor when overheated.

APPLICATIONS

O2 oil-cooled motors ensure reliable working in 4” or larger diameter wells and are designed to be used in for lifting, distribution, and pressurisation of water in water systems. O2 motors can be installed with a frequency inverter.

TECHNICAL SPECIFICATIONS

Power range:	0,37 - 1,5 kW
Voltage range:	1x220 - 230V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Flange:	4” NEMA standard dimensions
Rotation:	CCW facing shaft end
Degree of protection:	IP 68
Insulation:	Cl. F
Rated ambient temperature:	max. 40° C
Required cooling flow:	min 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	150, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	100 m
Thrust:	1.500 N; 2.500 N (according to ranges)
Allowed range of water PH:	6,4-8,0
Cable size:	3x1,5 mm² (ACS approved)

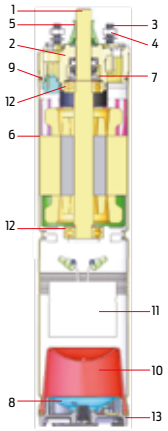
CHARACTERISTICS

- 2 pole asynchronous 2-wire single-phase oil-cooled motor.
- Special and long lasting integrated start and run capacitor.
- Rewindable stator and rotor immersed in dielectric fluid (FDA approved).
- Oversized axial and radial oil-lubricated bearings to guarantee longer life to the motor.
- The pressure compensation inside the motor is ensured by a special internal diaphragm.
- Sand protection to guarantee optimal operation even with sand in the borehole.
- Motor bottom cover for extra protection and safety.
- Removable lead connector to make installation and maintenance easier.
- Supply cable according to drinking water regulations (ACS), available in different lenghts.

MOTOR’S PROTECTIONS

Special thermal protector, manually resettable, especially designed to ensure higher reliability and longer life

°C	**Thermal protection** which stops the motor in case of overheating because of an incorrect installation
I>	**Current overload protection** which protects the motor in the case the submersible pump is partially or totally blocked.



Pos.	COMPONENTS	MATERIALS
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Stud	Stainless steel AISI 304
4	Nut	Stainless steel AISI 304
5	Rotating Sand Guard	NBR
6	Motor casing	Stainless steel AISI 304
7	Mechanical seal	Graphite/Ceramic
8	Bottom cover	Stainless steel AISI 304
9	O-Ring	NBR
10	Diaphragm	NBR
11	Capacitor	-
12	Bearing	Stanless Steel
13	Safety bottom cover	Technopolimer

O2 - 220-230V - 2-WIRE SINGLE-PHASE OIL-COOLED MOTORS - START AND RUN CONTROL PANEL NOT REQUIRED

Model	CODE (No cable)	CODE (Short cable)	CODE (with DRP)	Power [kW]	Power [HP]	Thrust [N]	Cable (m)	n_N [min⁻¹]	I_N [A]	I_{START} [A]	η eff [%]	CosΦ (P.f.)	T_{START} T_N	Lenght [mm]	W [kg]
O2.037.15	197100010	197100010L	197100010S	0,37	0,5	1500	1,5	2855	3,3-3,5	9,8-10,7	52	0,99	0,85	389	8,5
O2.055.15	197100015	197100015L	197100015S	0,55	0,75	1500	1,5	2840	4,4-4,6	12,8-13,9	60	0,99	0,64	404	9,2
O2.075.15	197100020	197100020L	197100020S	0,75	1	1500	1,5	2855	5,8-6,1	17,9-19,1	62	0,99	0,7	429	10,3
O2.110.25	197100025	197100025L	197100025S	1,1	1,5	2500	1,5	2855	7,8-8	23,8-24,7	66	0,99	0,62	464	11,9
O2.150.25	197100030	197100030L	197100030S	1,5	2	2500	2,5	2855	10,1-11	33-34	65	0,99	0,6	518	13,7

O3 4” oil-cooled single-phase submersible motors

O3 PSC single-phase motor

Electric motors from series O3 are 2 pole asynchronous single-phase submersible motors designed to operate coupled to hydraulic parts with 4” Nema standard. Strong and reliable, they are made of materials suitable for contact with water and oil-cooled by FDA - Food Drug Administration approved dielectric fluid.
O3 motors require a start and run control panel CBO, which includes capacitor and manual reset amperometric protection.

APPLICATIONS

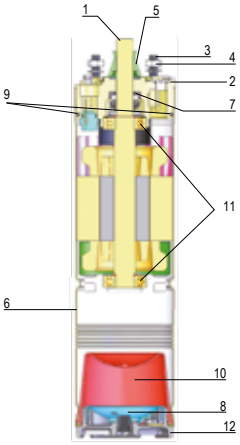
O3 oil-cooled motors ensure reliable working in 4” or larger diameter wells and are designed to be used in for lifting, distribution, and pressurisation of water in water systems. O3 motors can be installed with a frequency inverter.

TECHNICAL SPECIFICATIONS

Protection requirements for O3 motors without control panel:	N 60947-4-1 trip time < 10 sec. at 5 x I_N
Power range:	0,37 - 2,2 kW
Voltage range:	1x220 - 230V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Flange:	4” NEMA standard dimensions
Rotation:	CCW facing shaft end
Degree of protection:	IP 68
Insulation:	Cl. F
Rated ambient temperature:	max. 40° C
Required cooling flow:	min 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	150, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Thrust:	1.500 N; 2.500 N; 4.500 N (according to ranges)
Allowed range of water PH:	6,4-8,0
Cable size:	4x1,5 mm² (ACS approved)

CHARACTERISTICS

- 2 pole asynchronous single-phase PSC oil-cooled motor.
- Rewindable stator and rotor immersed in dielectric fluid (FDA approved).
- Oversized axial and radial oil-lubricated bearings to guarantee longer life to the motor.
- The pressure compensation inside the motor is ensured by a special internal diaphragm.
- Sand protection to guarantee optimal operation even with sand in the borehole.
- Motor bottom cover for extra protection and safety.
- Removable lead connector to make installation and maintenance easier.
- Supply cable according to drinking water regulations (ACS), available in different lenghts.



Pos.	COMPONENTS	MATERIALS
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Stud	Stainless steel AISI 304
4	Nut	Stainless steel AISI 304
5	Rotating Sand Guard	NBR
6	Outer sleeve	Stainless steel AISI 304
7	Mechanical seal	Graphite/Ceramic
8	Bottom cover	Stainless steel AISI 304
9	O-Ring	NBR
10	Diaphragm	NBR
11	Bearing	Stanless Steel
12	Safety bottom cover	Technopolimer

O3 - 220-230 V - SINGLE-PHASE PSC OIL-COOLED MOTORS - CONTROL PANEL NOT INCLUDED

Model	CODE (No cable)	CODE (Short cable)	CODE (with DRP)	Power [kW]	Power [HP]	Thrust [N]	Cable (m)	n_N [min⁻¹]	I_N [A]	I_{START} [A]	η eff [%]	CosΦ (P.f.)	C450V (µF)	T_{START} T_N	Lenght [mm]	Weight [kg]
O3.037.15	197101010	197101010L	197101010S	0,37	0,5	1500	1,5	2855	3,3-3,5	9,8-10,7	52	0,99	20	0,85	324	8,0
O3.055.15	197101015	197101015L	197101015S	0,55	0,75	1500	1,5	2840	4,4-4,6	12,8-13,9	60	0,99	25	0,64	339	8,7
O3.075.15	197101020	197101020L	197101020S	0,75	1	1500	1,5	2855	5,8-6,1	17,9-19,1	62	0,99	35	0,7	364	9,7
O3.110.25	197101025	197101025L	197101025S	1,1	1,5	2500	1,5	2855	7,8-8	23,8-24,7	66	0,99	40	0,62	399	11,3
O3.150.25	197101030	197101030L	197101030S	1,5	2	2500	2,5	2855	10,1-11	33-34	65	0,99	60	0,6	434	13,1
O3.150.45	197101035	197101035L	197101035S	1,5	2	4500	2,5	2855	10,1-11	33-34	65	0,99	60	0,6	457	13,7
O3.220.25	197101040	197101040L	197101040S	2,2	3	2500	2,5	2850	14-15,2	43-45	68	0,99	80	0,6	484	15,3
O3.220.45	197101045	197101045L	197101045S	2,2	3	4500	2,5	2850	14-15,2	43-45	68	0,99	80	0,6	507	15,8

OT 4” oil-cooled three-phase submersible motors

OT three-phase motor

Electric motors from series OT are 2 pole asynchronous three-phase submersible motors designed to operate coupled to hydraulic parts with 4” Nema standard. Strong and reliable, they are made of materials suitable for contact with water and oil-cooled by FDA - Food Drug Administration approved dielectric fluid. OT motors require a start, operation and protection system.

APPLICATIONS

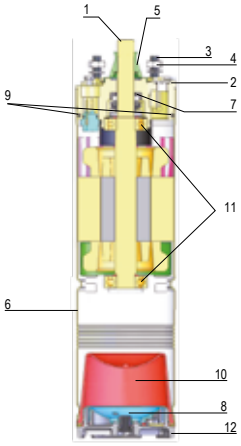
OT oil-cooled motors ensure reliable working in 4” or larger diameter wells and are designed to be used in for lifting, distribution, and pressurisation of water in water systems. OT motors are equipped with phase separator which ensures optimal operation when the motor is used with frequency inverter.

TECHNICAL SPECIFICATIONS

For OT motors an overload protection must be installed according to:	EN 60947-4-1 trip time < 10 sec. at 5 x I_N
Power range:	0,37 - 5,5 kW
Voltage range:	3x380 - 415V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Flange:	4” NEMA standard dimensions
Rotation:	reversibile
Degree of protection:	IP 68
Insulation:	Cl. F
Rated ambient temperature:	max. 40° C
Required cooling flow:	min 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	150, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Thrust:	1.500 N; 2.500 N; 4.500 N (according to ranges)
Allowed range of water PH:	6,4-8,0
Cable size:	4x1,5 mm² (ACS approved)

CHARACTERISTICS

- 2 pole asynchronous three-phase oil-cooled motor.
- Rewindable stator and rotor immersed in dielectric fluid (FDA approved)
- Oversized axial and radial oil-lubricated bearings to guarantee longer life to the motor.
- The pressure compensation inside the motor is ensured by a special internal diaphragm.
- Sand protection to guarantee optimal operation even with sand in the borehole.
- Motor bottom cover for extra protection and safety.
- Removable lead connector to make installation and maintenance easier.
- Supply cable according to drinking water regulations (ACS), available in different lenghts.



Pos.	COMPONENTS	MATERIALS
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Stud	Stainless steel AISI 304
4	Nut	Stainless steel AISI 304
5	Rotating Sand Guard	NBR
6	Motor casing	Stainless steel AISI 304
7	Mechanical seal	Graphite/Ceramic
8	Bottom cover	Stainless steel AISI 304
9	O-Ring	NBR
10	Diaphragm	NBR
11	Bearing	Steel
12	Safety bottom cover	Technopolymer

OT – 380-415V – THREE-PHASE OIL-COOLED MOTORS

Model	CODE (No cable)	CODE (Short cable)	CODE (with DRP)	Power [kW]	Power [HP]	Thrust [N]	Cable (m)	n_N [min⁻¹]	I_N [A]	I_{START} [A]	η eff [%]	CosΦ (P.f.)	T_{START} T_N	Lenght [mm]	W [kg]
OT.037.15	184198010	184198010L	184198010S	0,37	0,5	1500	1,5	2865-2885	1,5-1,7	6,5-7,4	58	0,63-0,54	4,1	313	7,5
OT.055.15	184198015	184198015L	184198015S	0,55	0,75	1500	1,5	2820-2855	1,6-1,8	7,6-8,3	64	0,75-0,67	3	324	8
OT.075.15	184198020	184198020L	184198020S	0,75	1	1500	1,5	2820-2850	2,3-2,6	10,3-11,2	66	0,75-0,63	3,2	339	8,8
OT.110.25	184198025	184198025L	184198025S	1,1	1,5	2500	1,5	2815-2840	3,1-3,6	14-15,2	69	0,77-0,66	3,7	364	9,9
OT.150.25	184198030	184198030L	184198030S	1,5	2	2500	2,5	2815-2840	4,1-4,6	19,6-21,4	71	0,77-0,66	3,7	399	11,6
OT.150.45	184198035	184198035L	184198035S	1,5	2	4500	2,5	2815-2840	4,1-4,6	19,6-21,4	71	0,77-0,66	3,7	422	12,2
OT.220.25	184198040	184198040L	184198040S	2,2	3	2500	2,5	2832-2865	5,2-5,4	24,2-27	74	0,86-0,76	2,2	434	13,1
OT.220.45	184198045	184198045L	184198045S	2,2	3	4500	2,5	2832-2865	5,2-5,4	24,2-27	74	0,86-0,76	2,2	457	13,8
OT.300.25	184198050	184198050L	184198050S	3	4	2500	2,5	2820-2855	7,0-7,2	33,7-36,8	75	0,85-0,76	3,2	434	13,1
OT.300.45	184198055	184198055L	184198055S	3	4	4500	2,5	2820-2855	7,0-7,2	33,7-36,8	75	0,85-0,76	3,2	457	13,8
OT.400.25	184198060	184198060L	184198060S	4	5,5	2500	2,5	2825-2860	9,3-9,8	42,9-46,8	76	0,84-0,75	2,8	484	16,3
OT.400.45	184198065	184198065L	184198065S	4	5,5	4500	2,5	2825-2860	9,3-9,8	42,9-46,8	76	0,84-0,75	2,8	484	16,9
OT.550.45	184198070	184198070L	Not available	5,5	7,5	4500	3,5	2820-2850	12,2-12,6	56,8-62	78	0,8-0,7	2,7	572	20,5

H2 4” encapsulated water-cooled single-phase submersible motors

H2 2-wire single-phase motor

Electric motors from series H2 are 2 pole asynchronous single-phase submersible motors **designed to operate coupled to 4” ZDS hydraulic parts**. They are made of materials suitable for contact with water, and cooling and lubrication of the thrust block and bushes are guaranteed by a mixture of water and glycol. H2 motors are equipped with a special and unique start and run capacitor, which is designed to guarantee a long-life to the motor and avoid the installation of an external control panel. They also come with a special and manually resettable built-in thermal protection, which stops the motor when overheated.

APPLICATIONS

H2 water-cooled motors ensure reliable working in 4” or larger diameter wells and are designed to be used in for lifting, distribution, and pressurisation of water in water systems. H2 motors can be installed with a frequency inverter.

TECHNICAL SPECIFICATIONS

Power range:	0,37 - 1,5 kW
Voltage range:	1x220 - 230V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Flange:	4” NEMA standard dimensions
Rotation:	CCW facing shaft end
Degree of protection:	IP 68
Insulation:	Cl. F
Rated ambient temperature:	max. 35° C
Required cooling flow:	min 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	150, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Thrust:	1.500 N; 2.500 N (according to ranges)
Allowed range of water PH:	6,4-8,0
Cable size:	3x1,5 mm² (ACS approved)

CHARACTERISTICS

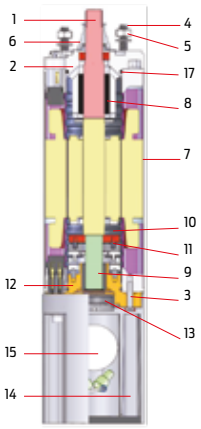
- 2 pole asynchronous 2-wire single-phase encapsulated water-cooled motor.
- Special and long lasting integrated start and run capacitor. In case of need it can be easily replaced.
- Axial and radial water-lubricated bearings allow for maintenance-free operation.
- Hermetically sealed stator by 304L stainless steel flanges, internal and external casings, filled by resin to guarantee optimal cooling capacity of temperature during operation.
- Rotor set on Kingsbury thrust block equipped with carbon clearance ring and oscillating pads in high-strength stainless steel to sustain high axial loads.
- Pre-filled with non-contaminating antifreeze lubricant liquid.
- Sand protection to guarantee optimal operation even with sand in the borehole.
- Removable lead connector to make installation and maintenance easier.
- Supply cable according to drinking water regulations (ACS), available in different lenghts.

MOTOR’S PROTECTIONS

Special thermal protector, manually resettable, especially designed to ensure higher reliability and longer life

Thermal protection
which stops the motor in case of overheating because of an incorrect installation

Current overload protection
which protects the motor in the case the submersible pump is partially or totally blocked.



Pos.	COMPONENTS	MATERIALS
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Pump support	G20 Cast Iron - cataphoretic treatment
4	Stud	Stainless steel AISI 304
5	Nut	Stainless steel AISI 304
6	Rotating Sand Guard	NBR
7	Outer sleeve	Stainless steel AISI 304
8	Upper bearing	Graphite HT 204
9	Lower bearing	Graphite HT 204
10	Rocking disk	Stainless steel AISI 304
11	Segments	Stainless steel AISI 304
12	O-ring	NBR
13	Diaphragm	NBR
14	Capacitor Box	Technopolimer
15	Capacitor	-

H2 - 220-230 V - 2-WIRE SINGLE-PHASE WATER COOLED ENCAPSULATED MOTORS - START AND RUN CONTROL PANEL NOT REQUIRED

Model	CODE (No cable)		CODE (Short cable)		CODE (with DRP)		Power		Thrust	Cable	n_N	I_N	I_{START}	η eff	CosΦ	T_{START}	Lenght	W
							[kW]	[HP]	[N]	(m)	[min⁻¹]	[A]	[A]	[%]	(P.f.)	T_N	[mm]	[kg]
H2.037.15	196190010		196190010L		196190010S		0,37	0,5	1500	1,5	2850	3,0-3,1	9,5-11	58	0,97	0,8	390	9,7
H2.055.15	196190015		196190015L		196190015S		0,55	0,75	1500	1,5	2830	4,1-4,2	14,2-15,7	63	0,99	0,8	417	11
H2.075.15	196190020		196190020L		196190020S		0,75	1	1500	1,5	2830	5,5-5,6	18-20,3	63	0,99	0,9	434	12,2
H2.110.30	196190025		196190025L		196190025S		1,1	1,5	2500	1,5	2840	8,3-8,5	29-31,5	63	0,97	0,8	465	13,5
H2.150.30	196190030		196190030L		196190030S		1,5	2	2500	1,5	2840	10,6-10,7	35-36,5	66	0,99	0,7	556	15,4

4” Encapsulated water-cooled Franklin submersible motors

Franklin Electric

1x220-230V SINGLE-PHASE PSC MOTORS - CONTROL PANEL NOT INCLUDED

Model	Code Franklin	CODE (No cable)	CODE (Short cable)	CODE (with DRP)	Power [kW]	Power [HP]	Thrust [N]	Cable (m)	I_N [A]	I_{START} / I_N	η eff [%]	CosΦ (P.f.)	C450V (µF)	Lenght [mm]	Weight [kg]
H3F.025.30	254 803 6700L	196191105	196191105L	196191105S	0,25	0,37	4000	1,5	2,4	9,0-9,4	51-50	0,92	12,5	214	7,3
H3F.037.30	254 805 6700L	196191110	196191110L	196191110S	0,37	0,5	4000	1,5	3,3	12,1-12,6	54-54	0,9	16	228	7,9
H3F.055.30	254 807 6700L	196191115	196191115L	196191115S	0,55	0,75	4000	1,5	4,3	16,9-17,7	63-63	0,94	20	253	9,1
H3F.075.30	254 808 6700L	196191120	196191120L	196191120S	0,75	1	4000	1,5	5,7	21,7-22,7	61-59	1	35	282	10
H3F.110.30	254 809 6700L	196191125	196191125L	196191125S	1,1	1,5	4000	1,5	8,4	32,5-33,9	65-63	0,92	40	306	11,5
H3F.150.30	254 810 6700L	196191130	196191130L	196191130S	1,5	2	3000	1,5	10,7	39,9-41,7	68-66	0,95	50	338	12,6
H3F.220.40	254 811 6700L	196191135	196191135L	196191135S	2,2	3	4000	2,5	14,7	59,2-61,8	70-68	0,97	70	436	17,4

3x380-415V THREE-PHASE MOTORS

Model	Code Franklin	CODE (No cable)	CODE (Short cable)	CODE (with DRP)	Power [kW]	Power [HP]	Thrust [N]	Cable (m)	I_N [A]	I_{START} / I_N	η eff [%]	CosΦ (P.f.)	Lenght [mm]	Weight [kg]
HTF.037.30	234 761 6700L	184192010	184192010L	184192010S	0,37	0,5	4000	1,5	1,1-1,1	5,1-5,6	66	0,79-0,71	214	6,3
HTF.055.30	234 762 6700L	184192015	184192015L	184192015S	0,55	0,75	4000	1,5	1,6-1,7	7,0-7,7	68	0,79-0,7	228	7,2
HTF.075.30	234 763 6700L	184192020	184192020L	184192020S	0,75	1	4000	1,5	2,0-2,1	10,1-10,9	70	0,81-0,73	248	8
HTF.110.30	234 724 6700L	184192025	184192025L	184192025S	1,1	1,5	4000	1,5	2,8-2,9	15,3-16,7	74	0,82-0,74	282	9,3
HTF.150.30	234 725 6700L	184192030	184192030L	184192030S	1,5	2	4000	1,5	3,9-4	19,7-21,5	73	0,83-0,73	306	10,3
HTF.220.40	234 726 6700L	184192035	184192035L	184192035S	2,2	3	4000	2,5	5,4-5,8	28,3-30,9	75	0,82-0,72	338	11,8
HTF.300.40	234 764 6700L	184192040	184192040L	184192040S	3	4	4000	3	7,4-7,9	39,9-43,6	77	0,82-0,72	393	14,3
HTF.400.65	234 765 3421L	184192045	184192045L	184192045S	4	5,5	6500	3	9,7-10-4	54,1-59,1	78	0,82-0,72	543	21,8
HTF.550.65	234 728 3421L	184192050	184192050L	Not available	5,5	7,5	6500	3	12,6-12,8	73,3-80,1	79	0,85-0,77	652	28,7
HTF.750.65	234 729 3421L	184192055	184192055L	Not available	7,5	10	6500	3	17,2-17,6	94,3-103	79	0,86-0,77	730	32,7

3x220-230V THREE-PHASE MOTORS

Model	Code Franklin	CODE - PRICE (No cable)		CODE - PRICE (Short cable)		Power [kW]	Power [HP]	Thrust [N]	Cable (m)	I_N [A]	I_{START} / I_N	η eff [%]	CosΦ (P.f.)	Lenght [mm]	Weight [kg]
HTF.038.30	234 751 6700L	197192010	**€ 355**	197192010L	**€ 406**	0,37	0,5	4000	1,5	1,9-1,9	8,8-9,3	66	0,79-0,74	214	7,2
HTF.056.30	234 752 6700L	197192015	**€ 363**	197192015L	**€ 414**	0,55	0,75	4000	1,5	2,7-2,8	12,2-12,9	68	0,79-0,74	228	7,7
HTF.076.30	234 753 6700L	197192020	**€ 390**	197192020L	**€ 441**	0,75	1	4000	1,5	3,5-3,5	17,4-18,3	70	0,81-0,77	248	8,7
HTF.111.30	234 754 6700L	197192025	**€ 456**	197192025L	**€ 506**	1,1	1,5	4000	1,5	4,9-4,9	26,4-27,8	74	0,82-0,78	282	10,2
HTF.151.30	234 755 6700L	197192030	**€ 540**	197192030L	**€ 591**	1,5	2	4000	1,5	6,7-6,7	34,0-35,9	73	0,83-0,78	306	11,2
HTF.221.40	234 756 6700L	197192035	**€ 665**	197192035L	**€ 726**	2,2	3	4000	2,5	9,3-9,5	49,0-51,6	75	0,82-0,77	338	12,6
HTF.301.40	234 766 6700L	197192040	**€ 805**	197192040L	**€ 865**	3	4	4000	2,5	12,8-13	69,1-72,8	76	0,82-0,77	393	15
HTF.401.65	234 767 3421L	197192045	**€ 1115**	197192045L	**€ 1175**	4	5,5	6500	2,5	16,7-17,2	93,7-98,7	78	0,82-0,77	543	20
HTF.551.65	234 758 3421L	197192050	**€ 1304**	197192050L	**€ 1364**	5,5	7,5	6500	2,5	21,9-21,8	127-133,7	79	0,85-0,81	652	26,6

4” COMPLETE SUBMERSIBLE PUMPS

QPGo

4" complete submersible pump, made of ZDS hydraulic part, ZDS 2-wire single-phase oil-cooled O2 motor and supply cable in different lenghts.
Reliable, strong, easy to maintain and available in a wide range of models; it's ready to use as it doesn't require a start and run control panel.
It can be protected against many possible installation or operation faults thanks to the DRP (integrated in the power supply cable) or the DRP-Plus (display monitoring protections).

HYDRAULIC PART

QS4P technopolymer or QS4X stainless steel ZDS hydraulic part, with floating ring technology and reinforced impeller.
Great reliability with the integrated non-return valve.
Special design and selected materials to ensure optimal resistance against sand and other abrasives.
Improved impellers design, which requires less starting torque to the motor.

MOTOR

2 pole asynchronous 2-wire single-phase oil-cooled O2 motor.
Special and long lasting integrated start and run capacitor.
Rewindable stator and rotor immersed in dielectric fluid (FDA approved).
Oversized axial and radial oil-lubricated bearings to guarantee longer life to the motor.
The pressure compensation inside the motor is ensured by a special internal diaphragm.
Sand protection to guarantee optimal operation even with sand in the borehole.
Motor bottom cover for extra protection and safety.
Removable lead connector to make installation and maintenance easier.
Supply cable according to drinking water regulations (ACS), available in different lenghts.

MOTOR'S PROTECTIONS

Special thermal protector, manually resettable, especially designed to ensure higher reliability and longer life

°C	**Thermal protection** which stops the motor in case of overheating because of an incorrect installation.
I>	**Current overload protection** which protects the motor in the case the submersible pump is partially or totally blocked.

APPLICATIONS

Submersible pump designed to be used in 4" boreholes (or larger) and tanks, for lifting, distribution, pressurization of water in water systems.

OPTIONAL

DRP:
INTEGRATED DRP -
DRY RUNNING PROTECTION

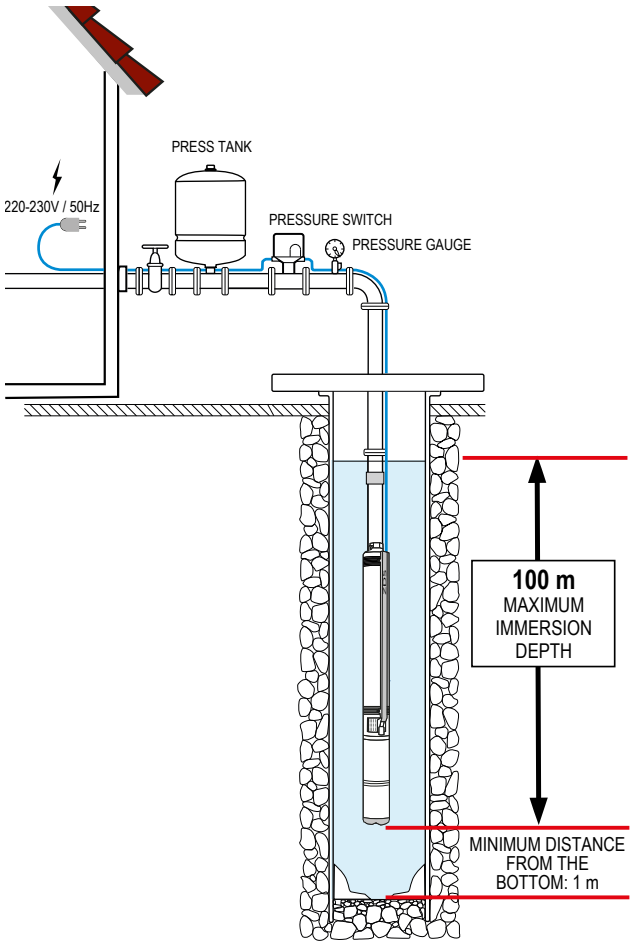
DRP-PLUS DISPLAY
MONITORING
PROTECTION

READY AND EASY TO INSTALL

NO NEED FOR EXTERNAL CONTROL PANEL

INTEGRATED CAPACITOR AND SPECIAL THERMAL PROTECTION

TECHNICAL SPECIFICATIONS	
Power range:	0,37 - 1,5 kW
Voltage range:	1x220-230V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Degree of protection:	IP 68
Insulation:	Cl. F
Rated ambient temperature:	max. 40° C
Required cooling flow:	min. 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	150, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	100 m
Allowed range of water PH:	6,4-8,0
Outlet diameter:	1" ¼ G-F - 2" G-F
Maximum delivery (Q):	15.000 l/h
Maximum head (H):	220 m



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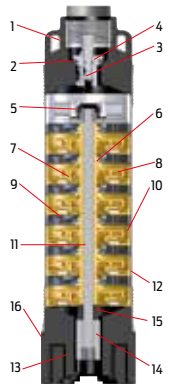
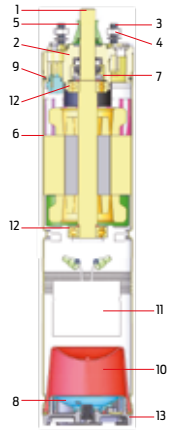
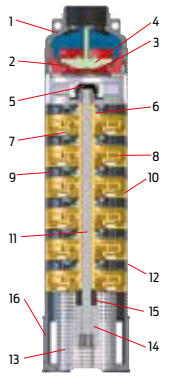
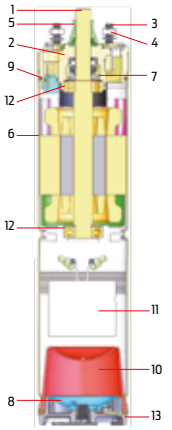




Pos.	COMPONENTS	MATERIALS
1	Upper head	PA 6.6
2	O-Ring	NBR
3	Complete valve	POM
4	Plate valve	POM
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stainless steel AISI 304 (DIN 1.4301)
12	Outer sleeve	Stainless steel AISI 304 (DIN 1.4301)
13	Filter	PA 6.6
14	Coupling	Stainless steel AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	PA 6.6
-	Cable cover	PVC
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Stud	Stainless steel AISI 304
4	Nut	Stainless steel AISI 304
5	Rotating Sand Guard	NBR
6	Outer sleeve	Stainless steel AISI 304
7	Mechanical seal	Graphite/Ceramic
8	Bottom cover	Stainless steel AISI 304
9	O-Ring	NBR
10	Diaphragm	NBR
11	Capacitor	-
12	Bearing	Stanless Steel
13	Safety bottom cover	Technopolimer

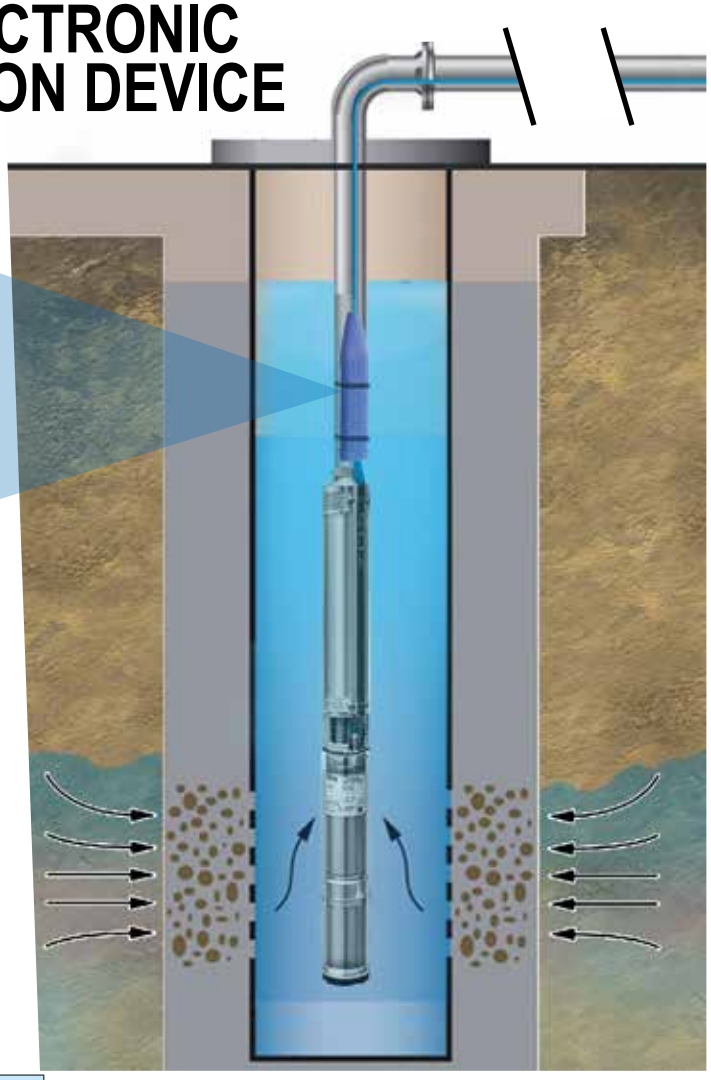
QPGo.X





Pos.	COMPONENTS	MATERIALS
1	Upper head	Stainless steel AISI 304 (DIN 1.4301)
2	O-Ring	NBR
3	Complete valve	PA 6.6
4	Plate valve	PA 6.6
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stainless steel AISI 304 (DIN 1.4301)
12	Outer sleeve	Stainless steel AISI 304(DIN 1.4301)
13	Filter (removable)	Stainless steel AISI 304 (DIN 1.4301)
14	Coupling	Stainless steel AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	Stainless steel AISI 304 (DIN 1.4301)
-	Cable cover	Stainless steel AISI 304 (DIN 1.4301)
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Stud	Stainless steel AISI 304
4	Nut	Stainless steel AISI 304
5	Rotating Sand Guard	NBR
6	Outer sleeve	Stainless steel AISI 304
7	Mechanical seal	Graphite/Ceramic
8	Bottom cover	Stainless steel AISI 304
9	O-Ring	NBR
10	Diaphragm	NBR
11	Capacitor	-
12	Bearing	Stanless Steel
13	Safety bottom cover	Technopolimer

DRP ELECTRONIC PROTECTION DEVICE

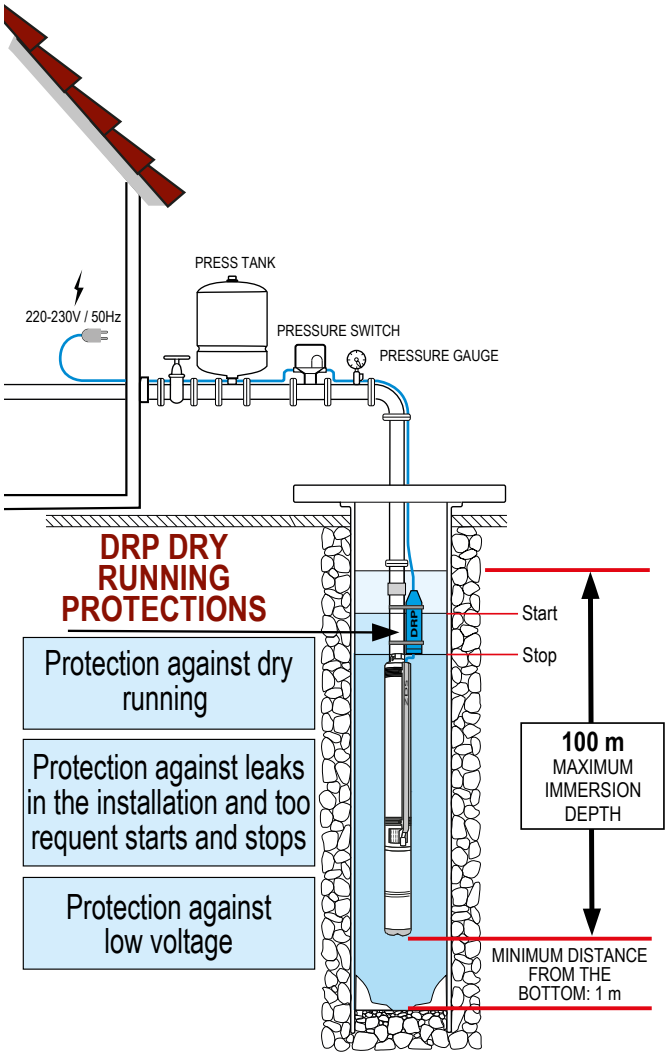


DRP is an electronic device that guarantees optimal protection of the submersible pump from dry running, positioned in the pump supply cable just above the pump. In case of water shortage, the DRP stops the pump immediately, the water drops below the DRP to allow water to flow into the bore hole. Thus the pump operation is directly proportional to the water supply for optimum efficiency. In contrast to traditional solutions, no additional cables, sensors and control boxes are needed. The DRP device has been developed and tested to make the submersible pump function autonomously in conditions of water shortage. The DRP is ready for use, integrated into the connection cable and needs no further installation.

FEATURES
Automatic programmed restarts in case of protection
Stand-by mode at maximum number of restart attempts overcoming
Ready to use, doesn't need any further calibration or setting up

DRP Protection	
	Protection against dry running and lack of water in the well The DRP completely protects the submersible pump against lack of water in the well, without the aid of other equipment (probes, cables, sensors, control panels etc.). In case of dry running, the DRP automatically stops the pump. When the water level is restored in the well, the DRP restarts the pump after a programmed cycle time.
	Protection against leaks in the installation and too frequent starts and stops The DRP protects the submersible pump against leaks in the piping system (also when the pressure tank is exhausted or its membrane is defective, or when there is a defective pressure switch) and too frequent starts and stops (for example if the tank is too small for the system). In such cases to avoid potential damages, the DRP, after some automatic re-start attempts, makes the pump enter the stand-by mode.
$U<$	**Protection against low voltage** The DRP protects thesubmersible pump against low voltage, that can damage the motor.

Technical Specifications	
Casing:	Thermoplastic material
Voltage range:	1x220-230V +6% / -10% / 50 Hz
Degree of protection:	IP 68
Rated ambient temperature:	-10/+40° C
Size (cm):	33 x 5 x 3



DRP- PLUS DISPLAY MONITORING PROTECTIONS

CHARACTERISTICS

- *LCD display for easy diagnostic*
- *Soft start technology*
- *Extra torque on start up when necessary*
- *Sounder alarm in the event of a fault*
- *Ready to use, doesn't need any further calibration or setting up*
- *Self-learning button for possible field approach*

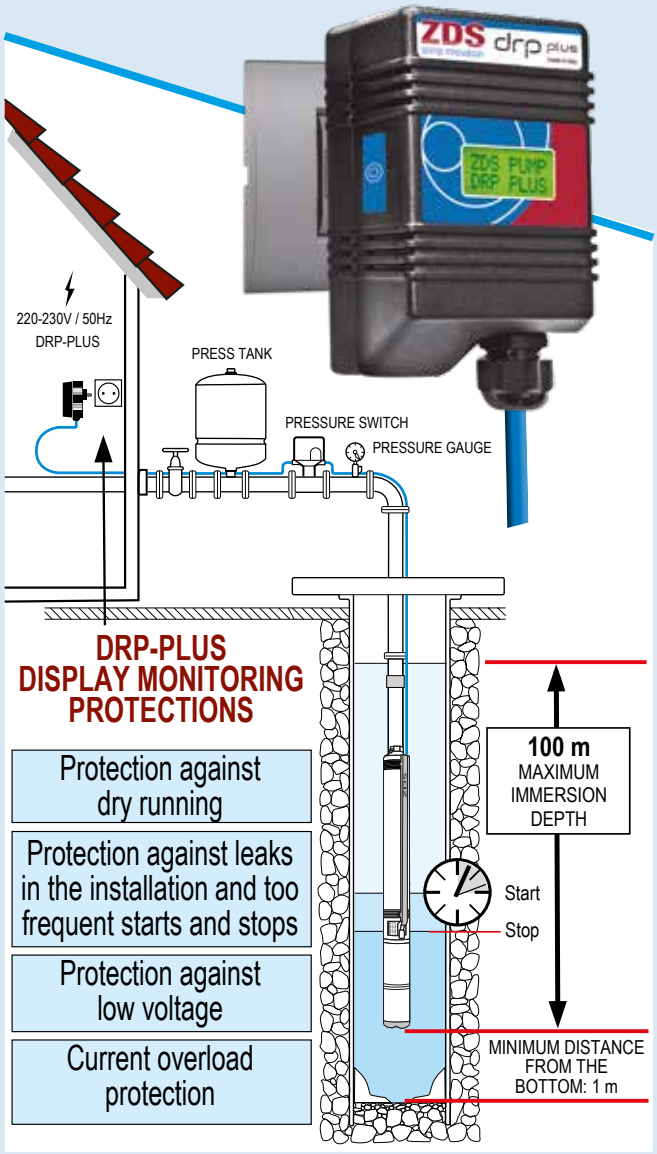
DRP-Plus device is designed to guarantee an optimal protection of the QPGo pump against many possible installation and operation faults: an alarm will be shown on the dispaly in case of current overload, low voltage or high voltage, too frequent starts and stops and dry running; ensuring a high degree of automation and restoration. ***DRP-Plus*** allows to continuously monitor the submersible pump, guaranteeing its operation in the most efficient way through a Soft start procedure (first start attempt with low starting torque) and if needed, a Strong start procedure to benefit of more starting torque. ***DRP-Plus*** allows to continuously detect and monitor in real time the power: the electrical parameters obtained are processed by a special software, which will efficiently guarantee the correct working conditions. With ***DRP-Plus***, the QPGo.DRP-Plus submersible pump can work and be continuously protected also when actual supply voltage values are at tolerance limit, providing the effectiveness of the protection operation. In addition, ***DRP-Plus***, thanks to a "smart software" at variable time and automatic restart, can ensure the optimization of water withdrawal from the borehole or tank when the pump is dry running.

DRP-PLUS Protection

	Protection against dry running and lack of water in the well The device automatically stops the submersible pump showing an alarm on the display, to restart it after a programmed cycle time.
	Protection against leaks in the installation and too frequent starts and stops In case of leaks in the piping system (also when the pressure tank is exhausted or its membrane is damaged, or when there is a defective pressure switch) and too frequent starts and stops (for example if the tank is too small for the system), DRP-Plus automatically makes the pump enter the stand-by mode showing an alarm on the display.
U≷	**Protection against low/high voltage** Avoid motor damages caused by too low or too high power supply voltages.
I>	**Current overload protection** In case the submersible pump is partially or totally blocked, after some restart attempts it enters the stand-by mode.

Technical Specifications

Schuko plug:	Integrated
Casing:	Thermoplastic material
Voltage range:	1x220-230V +6% / -10% / 50 Hz
Degree of protection:	IP 40
Rated ambient temperature:	-10/+35° C
Size (cm):	7,6 x 13 x 5,5



Product codes and hydraulics performance data

QPGo.P complete submersible pump

Hydraulic part with upper head and lower support in **technopolymer** and 2-wire single-phase oil-cooled motor - **220-230V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})							Cable 1,5 m	Cable 15 m	Cable 30 m	Cable 45 m
					I_N	m^3/h	0	0	0,6	1,5	2,4	4,2	6				
		kW	HP		(A)	l/min	0	6	10	25	40	70	100	Code	Code	Code	Code
PUMP CURVE 1	QPGo.P.1-8													197300108L	197300108L1	197300108L2	Not available
	QPGo.P.1-8.DRP	0,25	0,33	0,55	2,9		50,2	48	44,4	18				197300108S	197300108S1	197300108S2	Not available
	QPGo.P.1-8.DRP-Plus													197300108P	197300108P1	197300108P2	Not available
	QPGo.P.1-12													197300112L	197300112L1	197300112L2	197300112L3
	QPGo.P.1-12.DRP	0,37	0,5	0,72	3,3		75,4	72	66,6	27				197300112S	197300112S1	197300112S2	197300112S3
	QPGo.P.1-12.DRP-Plus													197300112P	197300112P1	197300112P2	197300112P3
	QPGo.P.1-18													197300118L	197300118L1	197300118L2	197300118L3
	QPGo.P.1-18.DRP	0,55	0,75	0,95	4,4		113	108	99,9	40,5				197300118S	197300118S1	197300118S2	197300118S3
	QPGo.P.1-18.DRP-Plus													197300118P	197300118P1	197300118P2	197300118P3
	QPGo.P.1-25													197300125L	197300125L1	197300125L2	197300125L3
	QPGo.P.1-25.DRP	0,75	1	1,24	5,8		157	150	138,8	56,3				197300125S	197300125S1	197300125S2	197300125S3
	QPGo.P.1-25.DRP-Plus													197300125P	197300125P1	197300125P2	197300125P3
PUMP CURVE 2	QPGo.P.2-5													197300205L	197300205L1	197300205L2	Not available
	QPGo.P.2-5.DRP	0,25	0,33	0,59	2,9		32		31,2	26,2	17			197300205S	197300205S1	197300205S2	Not available
	QPGo.P.2-5.DRP-Plus													197300205P	197300205P1	197300205P2	Not available
	QPGo.P.2-8													197300208L	197300208L1	197300208L2	197300208L3
	QPGo.P.2-8.DRP	0,37	0,5	0,73	3,3		51,2		49,9	41,9	27,2			197300208S	197300208S1	197300208S2	197300208S3
	QPGo.P.2-8.DRP-Plus													197300208P	197300208P1	197300208P2	197300208P3
	QPGo.P.2-12													197300212L	197300212L1	197300212L2	197300212L3
	QPGo.P.2-12.DRP	0,55	0,75	0,97	4,4		76,8		74,9	62,9	40,8			197300212S	197300212S1	197300212S2	197300212S3
	QPGo.P.2-12.DRP-Plus													197300212P	197300212P1	197300212P2	197300212P3
	QPGo.P.2-16													197300216L	197300216L1	197300216L2	197300216L3
	QPGo.P.2-16.DRP	0,75	1	1,27	5,8		102,4		99,8	83,8	54,4			197300216S	197300216S1	197300216S2	197300216S3
	QPGo.P.2-16.DRP-Plus													197300216P	197300216P1	197300216P2	197300216P3
	QPGo.P.2-24													197300224L	197300224L1	197300224L2	197300224L3
	QPGo.P.2-24.DRP	1,1	1,5	1,7	7,8		153,6		149,8	125,8	81,6			197300224S	197300224S1	197300224S2	197300224S3
	QPGo.P.2-24.DRP-Plus													197300224P	197300224P1	197300224P2	197300224P3
PUMP CURVE 3	QPGo.P.3-6													197300306L	197300306L1	197300306L2	Not available
	QPGoP.3-6.DRP	0,37	0,5	0,7	3,3		33,3			30,4	27	13,7		197300306S	197300306S1	197300306S2	Not available
	QPGo.P.3-6.DRP-Plus													197300306P	197300306P1	197300306P2	Not available
	QPGo.P.3-9													197300309L	197300309L1	197300309L2	197300309L3
	QPGo.P.3-9.DRP	0,55	0,75	0,93	4,4		50			45,6	40,5	20,6		197300309S	197300309S1	197300309S2	197300309S3
	QPGo.P.3-9.DRP-Plus													197300309P	197300309P1	197300309P2	197300309P3
	QPGo.P.3-13													197300313L	197300313L1	197300313L2	197300313L3
	QPGo.P.3-13.DRP	0,75	1	1,24	5,8		72,2			65,9	58,5	29,8		197300313S	197300313S1	197300313S2	197300313S3
	QPGo.P.3-13.DRP-Plus													197300313P	197300313P1	197300313P2	197300313P3
	QPGo.P.3-19													197300319L	197300319L1	197300319L2	197300319L3
	QPGo.P.3-19.DRP	1,1	1,5	1,66	7,8		105,5			96,3	85,5	43,5		197300319S	197300319S1	197300319S2	197300319S3
	QPGo.P.3-19.DRP-Plus													197300319P	197300319P1	197300319P2	197300319P3
	QPGo.P.3-25													197300325L	197300325L1	197300325L2	Not available
	QPGo.P.3-25.DRP	1,5	2	2,23	10,1		138,8			126,8	112,5	57,3		197300325S	197300325S1	197300325S2	Not available
	QPGo.P.3-25.DRP-Plus													197300325P	197300325P1	197300325P2	Not available
PUMP CURVE 5	QPGo.P.5-4													197300504L	197300504L1	197300504L2	Not available
	QPGo.P.5-4.DRP	0,37	0,5	0,72	3,3		24,5				22	18,5	12,1	197300504S	197300504S1	197300504S2	Not available
	QPGo.P.5-4.DRP-Plus													197300504P	197300504P1	197300504P2	Not available
	QPGo.P.5-6													197300506L	197300506L1	197300506L2	Not available
	QPGo.P.5-6.DRP	0,55	0,75	0,95	4,4		36,9				33	27,7	18,2	197300506S	197300506S1	197300506S2	Not available
	QPGo.P.5-6.DRP-Plus													197300506P	197300506P1	197300506P2	Not available
	QPGo.P.5-8													197300508L	197300508L1	197300508L2	197300508L3
	QPGo.P.5-8.DRP	0,75	1	1,23	5,8		49,1				44	37	24,2	197300508S	197300508S1	197300508S2	197300508S3
	QPGo.P.5-8.DRP-Plus													197300508P	197300508P1	197300508P2	197300508P3
	QPGo.P.5-13													197300513L	197300513L1	197300513L2	197300513L3
	QPGo.P.5-13.DRP	1,1	1,5	1,7	7,8		79,7				71,5	60,1	39,4	197300513S	197300513S1	197300513S2	197300513S3
	QPGo.P.5-13.DRP-.Plus													197300513P	197300513P1	197300513P2	197300513P3
	QPGo.P.5-17													197300517L	197300517L1	197300517L2	Not available
	QPGo.P.5-17.DRP	1,5	2	2,25	10,4		104,3				93,5	78,5	51,5	197300517S	197300517S1	197300517S2	Not available
	QPGo.P.5-17.DRP-Plus													197300517P	197300517P1	197300517P2	Not available

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

Product codes and hydraulics performance data

QPGo.X complete submersible pump

Hydraulic part with upper head and lower support in **stainless steel** and 2-wire single-phase oil-cooled motor - **220-230V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})									Cable 1,5 m		Cable 15 m		Cable 30 m		Cable 45 m	
		kW	HP		I_N (A)	m^3/h l/min	0 0	0,6 10	1,5 25	2,4 40	4,2 70	6 100	11,4 190	15 250		Code		Code	Price	Code		Code
PUMP CURVE 1	QPGo.X.1-8	0,25	0,33	0,59	2,9		50,2	44,4	18							197200108L		197200108L1		197200108L2		Not available
	QPGo.X.1-8.DRP															197200108S		197200108S1		197200108S2		Not available
	QPGo.X.1-8.DRP-Plus															197200108P		197200108P1		197200108P2		Not available
	QPGo.X.1-12	0,37	0,5	0,72	3,3		75,4	66,6	27							197200112L		197200112L1	€ 742	197200112L2		197200112L3
	QPGo.X.1-12.DRP															197200112S		197200112S1	€ 879	197200112S2		197200112S3
	QPGo.X.1-12.DRP-Plus															197200112P		197200112P1	€ 992	197200112P2		197200112P3
	QPGo.X.1-18	0,55	0,75	0,95	4,4		113	99,9	40,5							197200118L		197200118L1		197200118L2		197200118L3
	QPGo.X.1-18.DRP															197200118S		197200118S1		197200118S2		197200118S3
	QPGo.X.1-18.DRP-Plus															197200118P		197200118P1		197200118P2		197200118P3
	QPGo.X.1-25	0,75	1	1,24	5,8		157	138,8	56,3							197200125L		197200125L1	€ 867	197200125L2		197200125L3
	QPGo.X.1-25.DRP															197200125S		197200125S1	€ 1014	197200125S2		197200125S3
	QPGo.X.1-25.DRP-Plus															197200125P		197200125P1	€ 1127	197200125P2		197200125P3
	QPGo.X.1-36	1,1	1,5	1,66	7,8		226,1	199,8	81							197200136L		197200136L1		197200136L2		197200136L3
	QPGo.X.1-36.DRP															197200136S		197200136S1		197200136S2		197200136S3
	QPGo.X.1-36.DRP-Plus															197200136P		197200136P1		197200136P2		197200136P3
PUMP CURVE 2	QPGo.X.2-5	0,25	0,33	0,59	2,9		32	31,2	26,2	17						197200205L		197200205L1	€ 684	197200205L2		Not available
	QPGo.X.2-5.DRP															197200205S		197200205S1	€ 831	197200205S2		Not available
	QPGo.X.2-5.DRP-Plus															197200205P		197200205P1	€ 943	197200205P2		Not available
	QPGo.X.2-8	0,37	0,5	0,73	3,3		51,2	49,9	41,9	27,2						197200208L		197200208L1		197200208L2		197200208L3
	QPGo.X.2-8.DRP															197200208S		197200208S1		197200208S2		197200208S3
	QPGo.X.2-8.DRP-Plus															197200208P		197200208P1		197200208P2		197200208P3
	QPGo.X.2-12	0,55	0,75	0,97	4,4		76,8	74,9	62,9	40,8						197200212L		197200212L1	€ 749	197200212L2		197200212L3
	QPGo.X.2-12.DRP															197200212S		197200212S1	€ 897	197200212S2		197200212S3
	QPGo.X.2-12.DRP-Plus															197200212P		197200212P1	€ 1009	197200212P2		197200212P3
	QPGo.X.2-16	0,75	1	1,27	5,8		102,4	99,8	83,8	54,4						197200216L		197200216L1		197200216L2		197200216L3
	QPGo.X.2-16.DRP															197200216S		197200216S1		197200216S2		197200216S3
	QPGo.X.2-16.DRP-Plus															197200216P		197200216P1		197200216P2		197200216P3
	QPGo.X.2-24	1,1	1,5	1,7	7,8		153,6	149,8	125,8	81,6						197200224L		197200224L1	€ 896	197200224L2		197200224L3
	QPGo.X.2-24.DRP															197200224S		197200224S1	€ 1043	197200224S2		197200224S3
	QPGo.X.2-24.DRP-Plus															197200224P		197200224P1	€ 1155	197200224P2		197200224P3
	QPGo.X.2-32	1,5	2	2,25	10,5		204,7	199,7	167,7	108						197200232L		197200232L1		197200232L2		Not available
	QPGo.X.2-32.DRP															197200232S		197200232S1		197200232S2		Not available
	QPGo.X.2-32.DRP-Plus															197200232P		197200232P1		197200232P2		Not available
PUMP CURVE 3	QPGo.X.3-6	0,37	0,5	0,7	3,3		33,3		30,4	27	13,7					197200306L		197200306L1	€ 895	197200306L2		Not available
	QPGo.X.3-6.DRP															197200306S		197200306S1	€ 842	197200306S2		Not available
	QPGo.X.3-6.DRP-Plus															197200306P		197200306P1	€ 955	197200306P2		Not available
	QPGo.X.3-9	0,55	0,75	0,93	4,4		50		45,6	40,5	20,6					197200309L		197200309L1		197200309L2		197200309L3
	QPGo.X.3-9.DRP															197200309S		197200309S1		197200309S2		197200309S3
	QPGo.X.3-9.DRP-Plus															197200309P		197200309P1		197200309P2		197200309P3
	QPGo.X.3-13	0,75	1	1,24	5,8		72,2		65,9	58,5	29,8					197200313L		197200313L1	€ 793	197200313L2		197200313L3
	QPGo.X.3-13.DRP															197200313S		197200313S1	€ 940	197200313S2		197200313S3
	QPGo.X.3-13.DRP-Plus															197200313P		197200313P1	€ 1057	197200313P2		197200313P3
	QPGo.X.3-19	1,1	1,5	1,66	7,8		105,5		96,3	85,5	43,5					197200319L		197200319L1		197200319L2		197200319L3
	QPGo.X.3-19.DRP															197200319S		197200319S1		197200319S2		197200319S3
	QPGo.X.3-19.DRP-Plus															197200319P		197200319P1		197200319P2		197200319P3
	QPGo.X.3-25	1,5	2	2,23	10,1		138,8		126,8	112,5	57,3					197200325L		197200325L1	€ 1021	197200325L2		Not available
	QPGo.X.3-25.DRP															197200325S		197200325S1	€ 1172	197200325S2		Not available
	QPGo.X.3-25.DRP-Plus															197200325P		197200325P1	€ 1283	197200325P2		Not available
PUMP CURVE 5	QPGo.X.5-4	0,37	0,5	0,72	3,3		24,5			22	18,5	12,1				197200504L		197200504L1		197200504L2		Not available
	QPGo.X.5-4.DRP															197200504S		197200504S1		197200504S2		Not available
	QPGo.X.5-4.DRP-Plus															197200504P		197200504P1		197200504P2		Not available
	QPGo.X.5-6	0,55	0,75	0,95	4,4		36,8			33	27,7	18,2				197200506L		197200506L1	€ 719	197200506L2		Not available
	QPGo.X.5-6.DRP															197200506S		197200506S1	€ 856	197200506S2		Not available
	QPGo.X.5-6.DRP-Plus															197200506P		197200506P1	€ 968	197200506P2		Not available
	QPGo.X.5-8	0,75	1	1,23	5,9		49,1			44	37	24,2				197200508L		197200508L1		197200508L2		197200508L3
	QPGo.X.5-8.DRP															197200508S		197200508S1		197200508S2		197200508S3
	QPGo.X.5-8.DRP-Plus															197200508P		197200508P1		197200508P2		197200508P3
	QPGo.X.5-13	1,1	1,5	1,7	7,8		79,7			71,5	60,1	39,4				197200513L		197200513L1	€ 824	197200513L2		197200513L3
	QPGo.X.5-13.DRP															197200513S		197200513S1	€ 981	197200513S2		197200513S3
	QPGo.X.5-13.DRP-Plus															197200513P		197200513P1	€ 1094	197200513P2		197200513P3
	QPGo.X.5-17	1,5	2	2,35	10,4		104,3			93,5	78,5	51,5				197200517L		197200517L1		197200517L2		Not available
	QPGo.X.5-17.DRP															197200517S		197200517S1		197200517S2		Not available
	QPGo.X.5-17.DRP-Plus															197200517P		197200517P1		197200517P2		Not available
PUMP CURVE 8	QPGo.X.8-6	0,75	1	1,23	5,8		38,4				29	25	5			197200806L		197200806L1	€ 793	197200806L2		Not available
	QPGo.X.8-6.DRP															197200806S		197200806S1	€ 900	197200806S2		Not available
	QPGo.X.8-6.DRP-Plus															197200806P		197200806P1	€ 1012	197200806P2		Not available
	QPGo.X.8-8	1,1	1,5	1,71	7,8		51,2				39	33	7			197200808L		197200808L1		197200808L2		197200808L3
	QPGo.X.8-8.DRP															197200808S		197200808S1		197200808S2		197200808S3
	QPGo.X.8-8.DRP-Plus															197200808P		197200808P1		197200808P2		197200808P3
	QPGo.X.8-12	1,5	2	2,25	10,1		76,8				58	49	9,6			197200812L		197200812L1	€ 948	197200812L2		Not available
	QPGo.X.8-12.DRP															197200812S		197200812S1	€ 1098	197200812S		Not available
	QPGo.X.8-12.DRP-Plus															197200812P		197200812P1	€ 1206	197200812P2		Not available
P.C.10	QPGo.X.10-8	1,5	2	2,35	10,8		48,2					39,2		7,9		197200906L		197200906L1		197200906L2		Not available
	QPGo.X.10-8.DRP															197200906S		197200906S1		197200906S2		Not available
	QPGo.X.10-8.DRP-Plus															197200906P		197200906P1		197200906P2		Not available

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

P/X.03

4" complete submersible pump, made of ZDS hydraulic part, ZDS single-phase PSC oil-cooled O3 motor, supply cable in different lenghts and ZDS CBO electrical start panel (which includes on/off switch, start and run capacitor and overload protector).

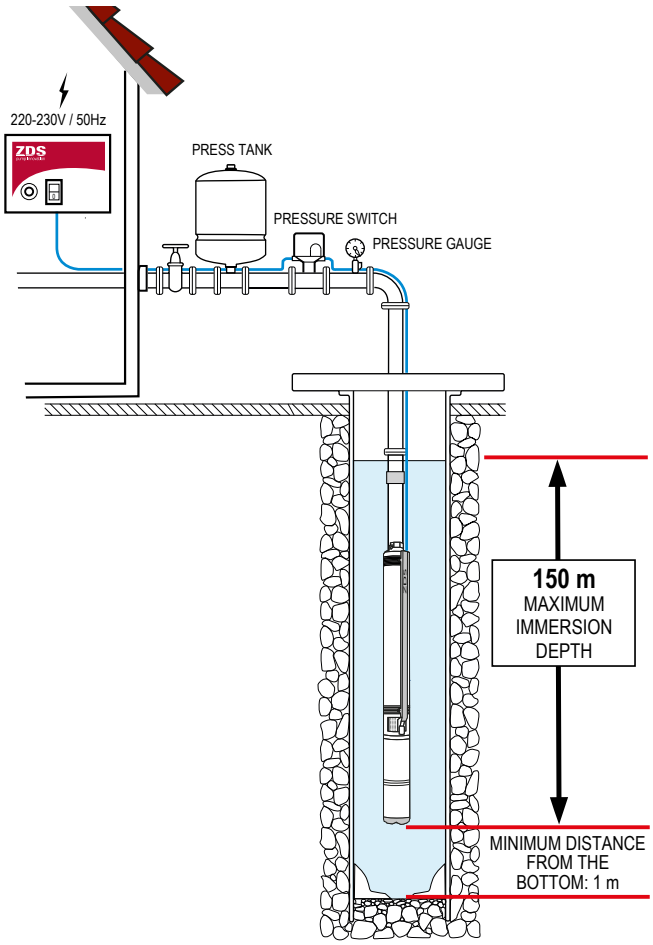
Reliable, strong, easy to maintain and available in a wide range of models.
It can be protected against many possible installation or operation faults thanks to the DRP protection device.

HYDRAULIC PART

QS4P technopolymer or QS4X stainless steel ZDS hydraulic part, with floating ring technology and reinforced impeller.
Great reliability with the integrated non-return valve.
Special design and selected materials to ensure optimal resistance against sand and other abrasives.
Improved impellers design, which requires less starting torque to the motor.

MOTOR

2 pole asynchronous single-phase PSC oil-cooled motor O3.
Rewindable stator and rotor immersed in dielectric fluid (FDA approved)
Oversized axial and radial oil-lubricated bearings to guarantee longer life to the motor.
The pressure compensation inside the motor is ensured by a special internal diaphragm.
Sand protection to guarantee optimal operation even with sand in the borehole.
Motor bottom cover for extra protection and safety.
Removable lead connector to make installation and maintenance easier.
Supply cable according to drinking water regulations (ACS), available in different lenghts.



TECHNICAL SPECIFICATIONS

Power range:	0,37 - 2,2 kW
Voltage range:	1x220-230V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Degree of protection:	IP 68
Insulation:	Cl. F
Rated ambient temperature:	max. 40° C
Required cooling flow:	min. 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	150, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Allowed range of water PH:	6,4-8,0
Outlet diameter:	1" ¼ G-F - 2" G-F
Maximum delivery (Q):	15.000 l/h
Maximum head (H):	220 m

OPTIONAL

DRP:
INTEGRATED DRP - DRY RUNNING PROTECTION

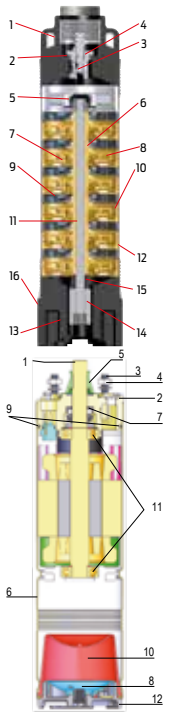
CBO - Electric start panel

Motor start and operation system with capacitor, equipped with thermal amperometric protection against current overload, ON/OFF illuminated switch, terminal box, cable glands, power supply cable, mounting accessories.

APPLICATIONS

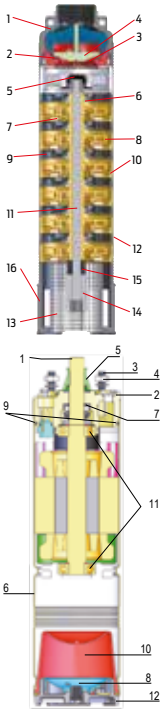
Submersible pump designed to be used in 4" boreholes (or larger) and tanks, for lifting, distribution, pressurization of water in water systems.

P.03



Pos.	COMPONENTS	MATERIALS
1	Upper head	PA 6.6
2	O-Ring	NBR
3	Complete valve	POM
4	Plate valve	POM
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stainless steel AISI 304 (DIN 1.4301)
12	Outer sleeve	Stainless steel AISI 304 (DIN 1.4301)
13	Filter	PA 6.6
14	Coupling	Stainless steel AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	PA 6.6
-	Cable cover	PVC
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Stud	Stainless steel AISI 304
4	Nut	Stainless steel AISI 304
5	Rotating Sand Guard	NBR
6	Outer sleeve	Stainless steel AISI 304
7	Mechanical seal	Graphite/Ceramic
8	Bottom cover	Stainless steel AISI 304
9	O-Ring	NBR
10	Diaphragm	NBR
11	Bearing	Stanless Steel
12	Safety bottom cover	Technopolimer

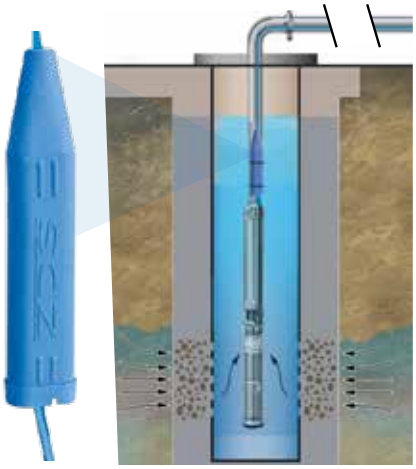
X.03



Pos.	COMPONENTS	MATERIALS
1	Upper head	Stainless steel AISI 304 (DIN 1.4301)
2	O-Ring	NBR
3	Complete valve	PA 6.6
4	Plate valve	PA 6.6
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stainless steel AISI 304 (DIN 1.4301)
12	Outer sleeve	Stainless steel AISI 304 (DIN 1.4301)
13	Filter (removable)	Stainless steel AISI 304 (DIN 1.4301)
14	Coupling	Stainless steel AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	Stainless steel AISI 304 (DIN 1.4301)
-	Cable cover	Stainless steel AISI 304 (DIN 1.4301)
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Stud	Stainless steel AISI 304
4	Nut	Stainless steel AISI 304
5	Rotating Sand Guard	NBR
6	Outer sleeve	Stainless steel AISI 304
7	Mechanical seal	Graphite/Ceramic
8	Bottom cover	Stainless steel AISI 304
9	O-Ring	NBR
10	Diaphragm	NBR
11	Bearing	Stanless Steel
12	Safety bottom cover	Technopolimer

DRP ELECTRONIC PROTECTION DEVICE

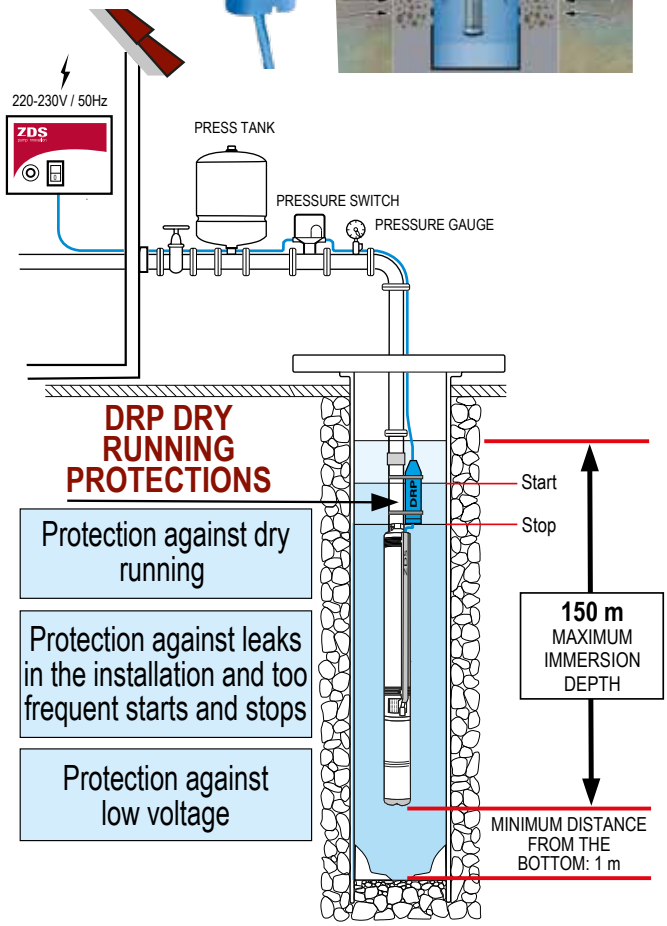
DRP is an electronic device that guarantees optimal protection of the submersible pump from dry running, positioned in the pump supply cable just above the pump. In case of water shortage, the DRP stops the pump immediately, the water drops below the DRP to allow water to flow into the bore hole. Thus the pump operation is directly proportional to the water supply for optimum efficiency. In contrast to traditional solutions, no additional cables, sensors and control boxes are needed. The DRP device has been developed and tested to make the submersible pump function autonomously in conditions of water shortage. The DRP is ready for use, integrated into the connection cable and needs no further installation.



CHARACTERISTICS
Automatic programmed restarts in case of protection
Stand-by mode at maximum number of restart attempts overcoming
Ready to use, doesn't need any further calibration or setting up

DRP Protection	
	Protection against dry running and lack of water in the well The DRP completely protects the submersible pump against lack of water in the well, without the aid of other equipment (probes, cables, sensors, control panels etc.). In case of dry running, the DRP automatically stops the pump. When the water level is restored in the well, the DRP restarts the pump after a programmed cycle time.
	Protection against leaks in the installation and too frequent starts and stops The DRP protects the submersible pump against leaks in the piping system (also when the pressure tank is exhausted or its membrane is defective, or when there is a defective pressure switch) and too frequent starts and stops (for example if the tank is too small for the system). In such cases to avoid potential damages, the DRP, after some automatic re-start attempts, makes the pump enter the stand-by mode.
U<	**Protection against low voltage**The DRP protects thesubmersible pump against low voltage, that can damage the motor.

Technical Specifications	
Casing:	Thermoplastic material
Voltage range:	1x220-230V +6% / -10% / 50 Hz
Degree of protection:	IP 68
Rated ambient temperature:	-10/+40° C
Size (cm):	33 x 5 x 3



Product codes and hydraulics performance data

P.O3 complete submersible pump

Hydraulic part with upper head and lower support in **technopolymer** and single-phase PSC oil-cooled motor - **220-230V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})							Cable 1,5 m		Cable 15 m		Cable 30 m		Cable 45 m	
					I_N	m^3/h	0	0.6	1.5	2.4	4.2	6								
		kW	HP		(A)	l/min	0	10	25	40	70	100		Code		Code		Code		Code
PUMP CURVE 1	P.1-8.O3	0,25	0,33	0,59	2,9		50,2	44,4	18					197500108L		197500108L1		197500108L2		Not available
	P.1-8.O3.DRP													197500108S		197500108S1		197500108S2		Not available
	P.1-12.O3	0,37	0,5	0,72	3,3		75,4	66,6	27					197500112L		197500112L1		197500112L2		197500112L3
	P.1-12.O3.DRP													197500112S		197500112S1		197500112S2		197500112S3
	P.1-18.O3	0,55	0,75	0,95	4,4		113	100	40					197500118L		197500118L1		197500118L2		197500118L3
	P.1-18.O3.DRP													197500118S		197500118S1		197500118S2		197500118S3
	P.1-25.O3	0,75	1	1,24	5,8		157	139	56					197500125L		197500125L1		197500125L2		197500125L3
	P.1-25.O3.DRP													197500125S		197500125S1		197500125S2		197500125S3
PUMP CURVE 2	P.2-5.O3	0,25	0,33	0,59	2,9		32	31,2	28,2	17				197500205L		197500205L1		197500205L2		Not available
	P.2-5.O3.DRP													197500205S		197500205S1		197500205S2		Not available
	P.2-8.O3	0,37	0,5	0,73	3,3		51,2	49,9	41,9	27,2				197500208L		197500208L1		197500208L2		197500208L3
	P.2-8.O3.DRP													197500208S		197500208S1		197500208S2		197500208S3
	P.2-12.O3	0,55	0,97	4,4	113		76,8	74,9	62,9	40,8				197500212L		197500212L1		197500212L2		197500212L3
	P.2-12.O3.DRP													197500212S		197500212S1		197500212S2		197500212S3
	P.2-16.O3	0,75	1	1,27	5,8		102,4	99,8	83,8	54,4				197500216L		197500216L1		197500216L2		197500216L3
	P.2-16.O3.DRP													197500216S		197500216S1		197500216S2		197500216S3
	P.2-24.O3	1,1	1,5	1,7	7,8		153,6	149,8	125,8	81,6				197500224L		197500224L1		197500224L2		197500224L3
	P.2-24.O3.DRP													197500224S		197500224S1		197500224S2		197500224S3
PUMP CURVE 3	P.3-6.O3	0,37	0,5	0,7	3,3		33,3		30,4	27	13,7			197500306L		197500306L1		197500306L2		Not available
	P.3-6.O3.DRP													197500306S		197500306S1		197500306S2		Not available
	P.3-9.O3	0,55	0,75	0,93	4,4		50		45,6	40,5	20,6			197500309L		197500309L1		197500309L2		197500309L3
	P.3-9.O3.DRP													197500309S		197500309S1		197500309S2		197500309S3
	P.3-13.O3	0,75	1	1,24	5,8		72,2		65,9	58,5	29,8			197500313L		197500313L1		197500313L2		197500313L3
	P.3-13.O3.DRP													197500313S		197500313S1		197500313S2		197500313S3
	P.3-19.O3	1,1	1,5	1,66	7,8		100,5		96,38	85,5	43,5			197500319L		197500319L1		197500319L2		197500319L3
	P.3-19.O3.DRP													197500319S		197500319S1		197500319S2		197500319S3
	P.3-25.O3	1,5	2	2,23	10,1		138,8		126,8	112,5	57,3			197500325L		197500325L1		197500325L2		Not available
	P.3-25.O3.DRP													197500325S		197500325S1		197500325S2		Not available
PUMP CURVE 5	P.5-4.O3	0,37	0,5	0,72	3,3		24,5			22	18,5	12,1		197500504L		197500504L1		197500504L2		Not available
	P.5-4.O3.DRP													197500504S		197500504S1		197500504S2		Not available
	P.5-6.O3	0,55	0,75	0,95	4,4		36,8			33	27,7	18,2		197500506L		197500506L1		197500506L2		Not available
	P.5-6.O3.DRP													197500506S		197500506S1		197500506S2		Not available
	P.5-8.O3	0,75	1	1,23	5,8		49,1			44	37	24,2		197500508L		197500508L1		197500508L2		197500508L3
	P.5-8.O3.DRP													197500508S		197500508S1		197500508S2		197500508S3
	P.5-13.O3	1,1	1,5	1,7	7,8		79,7			71,5	60,1	39,4		197500513L		197500513L1		197500513L2		197500513L3
	P.5-13.O3.DRP													197500513S		197500513S1		197500513S2		197500513S3
	P.5-17.O3	1,5	2	2,3	10,1		104,3			93,5	78,5	51,5		197500517L		197500517L1		197500517L2		Not available
	P.5-17.O3.DRP													197500517S		197500517S1		197500517S2		Not available
	P.5-21.O3	2,2	3	2,75	13,1		128,8			115,5	97	63,6		197500521L		197500521L1		Not available		Not available
	P.5-21.O3.DRP													197500521S		197500521S1		Not available		Not available

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

CBO included in the price

Product codes and hydraulics performance data

X.O3 complete submersible pump

Hydraulic part with upper head and lower support in **stainless steel** and single-phase PSC oil-cooled motor - **220-230V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})								Cable 1,5 m	Cable 15 m	Cable 30 m	Cable 45 m
					I_N	m^3/h	0	0,6	1,5	2,4	4,2	6	11,4	15				
		kW	HP		(A)	l/min	0	10	25	40	70	100	190	250	Code	Code	Code	Code
PUMP CURVE 1	X.1-8.O3	0,25	0,33	0,59	2,9		50,2	44,4	18						197400108L	197400108L1	197400108L2	Not available
	X.1-8.O3.DRP														197400108S	197400108S1	197400108S2	Not available
	X.1-12.O3	0,37	0,5	0,72	3,3		75,4	66,6	27						197400112L	197400112L1	197400112L2	197400112L3
	X.1-12.O3.DRP														197400112S	197400112S1	197400112S2	197400112S3
	X.1-18.O3	0,55	0,75	0,95	4,4		113	99,9	40,5						197400118L	197400118L1	197400118L2	197400118L3
	X.1-18.O3.DRP														197400118S	197400118S1	197400118S2	197400118S3
	X.1-25.O3	0,75	1	1,24	5,8		157	138,8	56,3						197400125L	197400125L1	197400125L2	197400125L3
	X.1-25.O3.DRP														197400125S	197400125S1	197400125S2	197400125S3
	X.1-36.O3	1,1	1,5	1,66	7,8		226,1	199,8	91						197400136L	197400136L1	197400136L2	197400136L3
	X.1-36.O3.DRP														197400136S	197400136S1	197400136S2	197400136S3
PUMP CURVE 2	X.2-5.O3	0,25	0,33	0,59	2,9		32	31,2	28,2	17					197400205L	197400205L1	197400205L2	Not available
	X.2-5.O3.DRP														197400205S	197400205S1	197400205S2	Not available
	X.2-8.O3	0,37	0,5	0,73	3,3		51,2	49,9	41,9	27,2					197400208L	197400208L1	197400208L2	197400208L3
	X.2-8.O3.DRP														197400208S	197400208S1	197400208S2	197400208S3
	X.2-12.O3	0,55	0,75	0,97	4,4		76,8	74,9	62,9	40,8					197400212L	197400212L1	197400212L2	197400212L3
	X.2-12.O3.DRP														197400212S	197400212S1	197400212S2	197400212S3
	X.2-16.O3	0,75	1	1,27	5,8		102,4	99,8	83,8	54,4					197400216L	197400216L1	197400216L2	197400216L3
	X.2-16.O3.DRP														197400216S	197400216S1	197400216S2	197400216S3
	X.2-24.O3	1,1	1,5	1,7	7,8		153,6	149,8	125,8	81,6					197400224L	197400224L1	197400224L2	197400224L3
	X.2-24.O3.DRP														197400224S	197400224S1	197400224S2	197400224S3
	X.2-32.O3	1,5	2	2,3	10,1		204,7	199,7	167,7	108					197400232L	197400232L1	197400232L2	Not available
	X.2-32.O3.DRP														197400232S	197400232S1	197400232S2	Not available
PUMP CURVE 3	X.3-6.O3	0,37	0,5	0,7	3,3		33,3		30,4	27	13,7				197400306L	197400306L1	197400306L2	Not available
	X.3-6.O3.DRP														197400306S	197400306S1	197400306S2	Not available
	X.3-9.O3	0,55	0,75	0,93	4,4		50		45,6	40,5	20,6				197400309L	197400309L1	197400309L2	197400309L3
	X.3-9.O3.DRP														197400309S	197400309S1	197400309S2	197400309S3
	X.3-13.O3	0,75	1	1,24	5,8		72,2		65,9	58,5	29,8				197400313L	197400313L1	197400313L2	197400313L3
	X.3-13.O3.DRP														197400313S	197400313S1	197400313S2	197400313S3
	X.3-19.O3	1,1	1,5	1,66	7,8		105,5		96,3	85,5	43,5				197400319L	197400319L1	197400319L2	197400319L3
	X.3-19.O3.DRP														197400319S	197400319S1	197400319S2	197400319S3
	X.3-25.O3	1,5	2	2,23	10,1		138,8		126,8	112,5	57,3				197400325L	197400325L1	197400325L2	Not available
	X.3-25.O3.DRP														197400325S	197400325S1	197400325S2	Not available
PUMP CURVE 5	X.5-4.O3	0,37	0,5	0,72	3,3		24,5			22	18,5	12,1			197400504L	197400504L1	197400504L2	Not available
	X.5-4.O3.DRP														197400504S	197400504S1	197400504S2	Not available
	X.5-6.O3	0,55	0,75	0,95	4,4		36,8			33	27,7	18,2			197400506L	197400506L1	197400506L2	Not available
	X.5-6.O3.DRP														197400506S	197400506S1	197400506S2	Not available
	X.5-8.O3	0,75	1	1,23	5,8		49,1			44	37	24,2			197400508L	197400508L1	197400508L2	197400508L3
	X.5-8.O3.DRP														197400508S	197400508S1	197400508S2	197400508S3
	X.5-13.O3	1,1	1,5	1,7	7,8		79.7			71,5	60,1	39,4			197400513L	197400513L1	197400513L2	197400513L3
	X.5-13.O3.DRP														197400513S	197400513S1	197400513S2	197400513S3
	X.5-17.O3	1,5	2	2,3	10,4		104,3			93,5	78,5	51,5			197400517L	197400517L1	197400517L2	Not available
	X.5-17.O3.DRP														197400517S	197400517S1	197400517S2	Not available
	X.5-21.O3	2,2	3	2,75	13,5		128,8			115,5	97	63,6			197400521L	197400521L1	Not available	Not available
	X.5-21.O3.DRP														197400521S	197400521S1	Not available	Not available
PUMP CURVE 8	X.8-6.O3	0,75	1	1,23	5,8		38,4				29	24,5	4,8		197400806L	197400806L1	197400806L2	Not available
	X.8-6.O3.DRP														197400806S	197400806S1	197400806S2	Not available
	X.8-8.O3	1,1	1,5	1,71	7,8		51,2				38,6	32,7	6,4		197400808L	197400808L1	197400808L2	197400808L3
	X.8-8.O3.DRP														197400808S	197400808S1	197400808S2	197400808S3
	X.8-12.O3	1,5	2	2,25	10,1		76,8				58	49	9,6		197400812L	197400812L1	197400812L2	Not available
	X.8-12.O3.DRP														197400812S	197400812S1	197400812S2	Not available
	X.8-17.O3	2,2	3	3,05	14		108,8				82,1	69,4	13,6		197400817L	197400817L1	Not available	Not available
	X.8-17.O3.DRP														197400817S	197400817S1	Not available	Not available
P.C.10	X.10-8.O3	1,5	2	2,6	10,1		48,2				42,6	39,2	23,1	7,9	197401008L	197401008L1	197401008L2	Not available
	X.10-8.O3.DRP														197401008S	197401008S1	197401008S2	Not available
	X.10-12.O3	2,2	3	2,9	14		72,3				64	58,8	34,7	11,9	197401012L	197401012L1	Not available	Not available
	X.10-12.O3.DRP														197401012S	197401012S1	Not available	Not available

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

CBO included in the price

P/X.OT

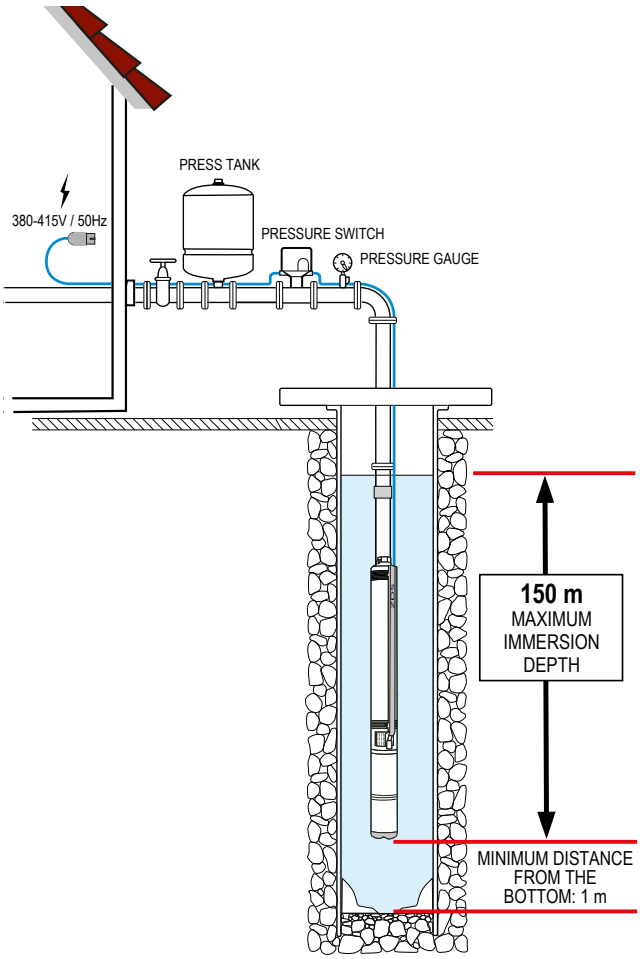
4" complete submersible pump, made of ZDS hydraulic part, ZDS three-phase oil-cooled OT motor and supply cable in different lenghts.
Reliable, strong and easy to maintain, it's available in a wide range of models. It can be protected against many possible installation or operation faults thanks to the DRP protection device.
It requires a start, operation and protection system.

HYDRAULIC PART

QS4P technopolymer or QS4X stainless steel ZDS hydraulic part, with floating ring technology and reinforced impeller.
Great reliability with the integrated non-return valve.
Special design and selected materials to ensure optimal resistance against sand and other abrasives.
Improved impellers design, which requires less starting torque to the motor.

MOTOR

2 pole asynchronous three-phase oil-cooled OT motor.
Rewindable stator and rotor immersed in dielectric fluid (FDA approved)
Oversized axial and radial oil-lubricated bearings to guarantee longer life to the motor.
The pressure compensation inside the motor is ensured by a special internal diaphragm.
Sand protection to guarantee optimal operation even with sand in the borehole.
Motor bottom cover for extra protection and safety.
Removable lead connector to make installation and maintenance easier.
Supply cable according to drinking water regulations (ACS), available in different lenghts.



TECHNICAL SPECIFICATIONS

Overload protection requirements according to:	EN 60947-4-1 trip time < 10 sec. at $5xI_N$
Power range:	0,37 - 2,2 kW
Voltage range:	3x380-415V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Degree of protection:	IP 68
Insulation:	Cl. F
Rated ambient temperature:	max. 40° C
Required cooling flow:	min. 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	150, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Allowed range of water PH:	6,4-8,0
Outlet diameter:	1" ¼ G-F - 2" G-F
Maximum delivery (Q):	15.000 l/h
Maximum head (H):	220 m

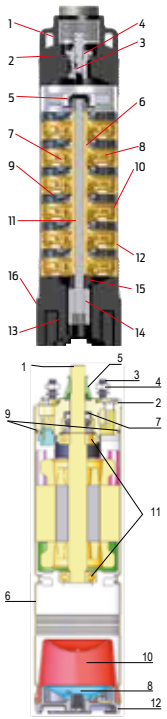
OPTIONAL

DRP:
INTEGRATED DRP -
DRY RUNNING PROTECTION

APPLICATIONS

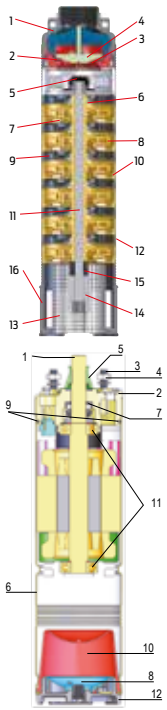
Submersible pump designed to be used in 4" boreholes (or larger) and tanks, for lifting, distribution, pressurization of water in water systems.

P.OT



Pos.	COMPONENTS	MATERIALS
1	Upper head	PA 6.6
2	O-Ring	NBR
3	Complete valve	POM
4	Plate valve	POM
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stainless steel AISI 304 (DIN 1.4301)
12	Outer sleeve	Stainless steel AISI 304 (DIN 1.4301)
13	Filter	PA 6.6
14	Coupling	Stainless steel AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	PA 6.6
-	Cable cover	PVC
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Stud	Stainless steel AISI 304
4	Nut	Stainless steel AISI 304
5	Rotating Sand Guard	NBR
6	Outer sleeve	Stainless steel AISI 304
7	Mechanical seal	Graphite/Ceramic
8	Bottom cover	Stainless steel AISI 304
9	O-Ring	NBR
10	Diaphragm	NBR
11	Bearing	Stanless Steel
12	Safety bottom cover	Technopolimer

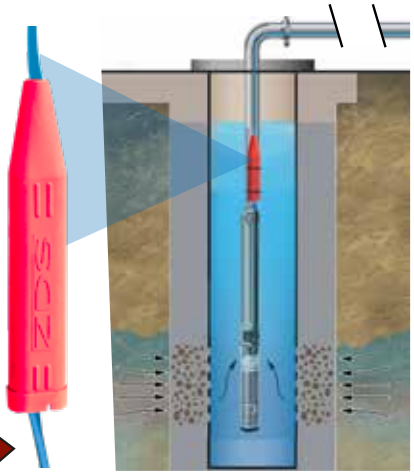
X.OT



Pos.	COMPONENTS	MATERIALS
1	Upper head	Stainless steel AISI 304 (DIN 1.4301)
2	O-Ring	NBR
3	Complete valve	PA 6.6
4	Plate valve	PA 6.6
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stainless steel AISI 304 (DIN 1.4301)
12	Outer sleeve	Stainless steel AISI 304 (DIN 1.4301)
13	Filter (removable)	Stainless steel AISI 304 (DIN 1.4301)
14	Coupling	Stainless steel AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	Stainless steel AISI 304 (DIN 1.4301)
-	Cable cover	Stainless steel AISI 304 (DIN 1.4301)
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Stud	Stainless steel AISI 304
4	Nut	Stainless steel AISI 304
5	Rotating Sand Guard	NBR
6	Outer sleeve	Stainless steel AISI 304
7	Mechanical seal	Graphite/Ceramic
8	Bottom cover	Stainless steel AISI 304
9	O-Ring	NBR
10	Diaphragm	NBR
11	Bearing	Stanless Steel
12	Safety bottom cover	Technopolimer

DRP ELECTRONIC PROTECTION DEVICE

DRP is an electronic device that guarantees optimal protection of the submersible pump from dry running, positioned in the pump supply cable just above the pump. In case of water shortage, the DRP stops the pump immediately, the water drops below the DRP to allow water to flow into the bore hole. Thus the pump operation is directly proportional to the water supply for optimum efficiency. In contrast to traditional solutions, no additional cables, sensors and control boxes are needed. The DRP device has been developed and tested to make the submersible pump function autonomously in conditions of water shortage. The DRP is ready for use, integrated into the connection cable and needs no further installation.



CHARACTERISTICS
Automatic programmed restarts in case of protection
Stand-by mode at maximum number of restart attempts overcoming
Ready to use, doesn't need any further calibration or setting up

DRP Protection

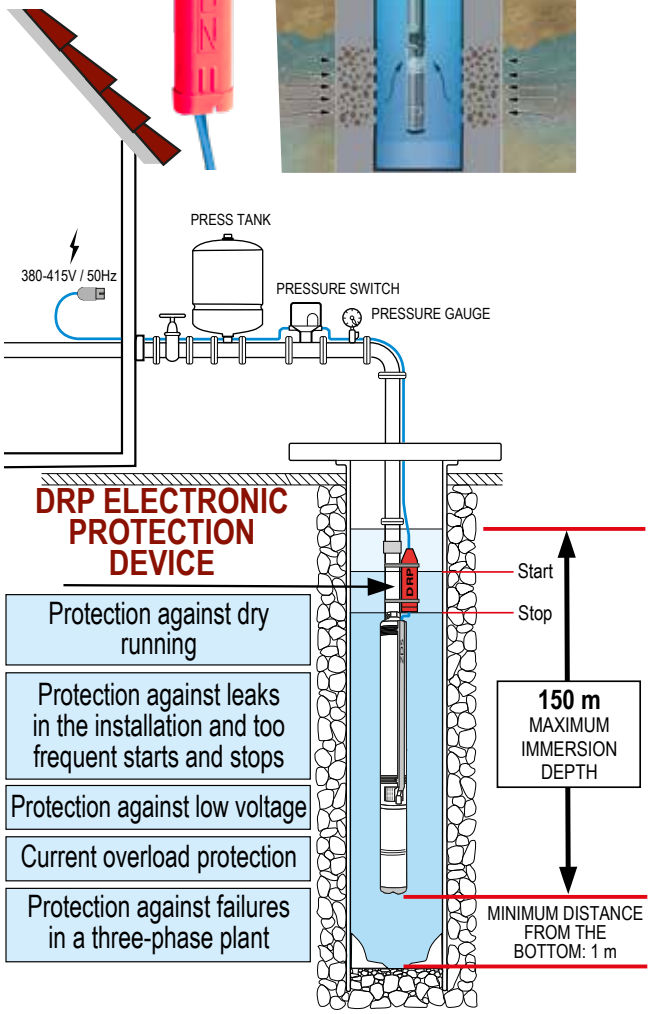
Protection against dry running and lack of water in the well
The DRP completely protects the submersible pump against lack of water in the well, without the aid of other equipment (probes, cables, sensors, control panels etc.). In case of dry running, the DRP automatically stops the pump. When the water level is restored in the well, the DRP restarts the pump after a programmed cycle time.

Protection against leaks in the installation and too frequent starts and stops
The DRP protects the submersible pump against leaks in the piping system (also when the pressure tank is exhausted or its membrane is defective, or when there is a defective pressure switch) and too frequent starts and stops (for example if the tank is too small for the system). In such cases to avoid potential damages, the DRP, after some automatic re-start attempts, makes the pump enter the stand-by mode.

Protection against low voltage
The DRP protects thesubmersible pump against low voltage, that can damage the motor.

Current overload proyection
In case the submersible pump is partially or totally blocked, after some restart attempts it enters the stand-by mode.

Protection against failures in a three-phase plant
The submersible pump is protected against phase-loss (caused by a brake of a fuse). The DRP protects the motor against damaging.



Technical Specifications	
Casing:	Thermoplastic material
Voltage range:	3x380-415V +6% / -10% / 50 Hz
Degree of protection:	IP 68
Rated ambient temperature:	-10/+40° C
Size (cm):	33 x 5 x 3

Product codes and hydraulics performance data

P.OT Complete submersible pump

Hydraulic part with upper head and lower support in **technopolymer** and three-phase oil-cooled motor - **380-415V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})							Cable 1,5 m	Cable 15 m	Cable 30 m	Cable 45 m
					I_N	m^3/h	0	0.6	1.5	2.4	4.2	6				
		kW	HP		(A)	l/min	0	10	25	40	70	100	Code	Code	Code	Code
PUMP CURVE 1	P.1-8.OT	0,25	0,33	0,57	1,65		50,2	44,4	18				184086008	184086008L	184086008L1	Not available
	P.1-8.OT.DRP												184086008S	184086008S1	184086008S2	Not available
	P.1-12.OT	0,37	0,5	0,7	1,7		75,4	66,6	27				184086011	184086011L	184086012	184086012L
	P.1-12.OT.DRP												184086011S	184086011S1	184086012S	184086012S1
	P.1-18.OT	0,55	0,75	0,87	1,75		113	99,9	40,5				184086017	184086017L	184086018	184086018L
	P.1-18.OT.DRP												184086017S	184086017S1	184086018S	184086018S1
	P.1-25.OT	0,75	1	1,16	2,35		157	138,9	56,3				184086024	184086024L	184086024L1	18408624L2
	P.1-25.OT.DRP												184086024S	184086024S1	184086024S2	18408624S3
PUMP CURVE 2	P.2-5.OT	0,25	0,33	0,57	1,65		32	31,2	28,2	17			184086104	184086105	184086105L	Not available
	P.2-5.OT.DRP												184086104S	184086505S	184086505S1	Not available
	P.2-8.OT	0,37	0,5	0,71	1,7		51,2	49,9	41,9	27,2			184086107	184086108	184086108L	184086108L1
	P.2-8.OT.DRP												184086107S	184086108S	184086108S1	184086108S2
	P.2-12.OT	0,55	0,75	0,88	1,75		76,8	74,9	62,9	40,8			184086111	184086111L	184086112	184086112L
	P.2-12.OT.DRP												184086111S	184086111S1	184086112S	184086112S1
	P.2-16.OT	0,75	1	1,21	2,4		102,4	99,8	83,8	54,4			184086115	184086115L	184086116	184086116L
	P.2-16.OT.DRP												184086115S	184086115S1	184086116S	184086116S1
	P.2-24.OT	1,1	1,5	1,71	3,3		153,6	149,8	125,8	81,6			184086124L	184086124L1	184086124L2	184086124L3
	P.2-24.OT.DRP												184086123S	184086123S1	184086123S2	184086123S3
PUMP CURVE 3	P.3-6.OT	0,37	0,5	0,68	1,7		33,3		30,4	27	13,7		184086205	184086206	184086206L	Not available
	P.3-6.OT.DRP												184086205S	184086206S	184086206S1	Not available
	P.3-9.OT	0,6	0,8	0,8	1,7		50		45,6	40,5	20,6		184086208	184086209	184086209L	184086209L1
	P.3-9.OT.DRP												184086208S	184086209S	184086209S1	184086209S2
	P.3-13.OT	0,75	1	1,16	2,35		72,2		65,9	58,5	29,8		184086212	184086212L	184086213	184086213L
	P.3-13.OT.DRP												184086212S	184086212S1	184086213S	184086213S1
	P.3-19.OT	1,1	1,5	1,6	3,2		105,5		96,3	85,5	43,5		184086218	184086218L	184086219	184086219L
	P.3-19.OT.DRP												184086218S	184086218S1	184086219S	184086219S1
	P.3-25.OT	1,5	2	2,1	4,3		138,8		126,8	112,5	57,3		184086225	184086225L	184086225L1	184086225L2
	P.3-25.OT.DRP												184086225S	184086225S1	184086225S2	184086225S3
PUMP CURVE 5	P.5-4.OT	0,37	0,5	0,7	1,7		24,5			22	18,5	12,1	184086303	184086304	184086304L	Not available
	P.5-4.OT.DRP												184086303S	184086304S	184086604S1	Not available
	P.5-6.OT	0,6	0,8	0,9	1,8		36,8			33	27,7	18,2	184086305	184086306	184086306L	Not available
	P.5-6.OT.DRP												184086305S	184086306S	184086306S1	Not available
	P.5-8.OT	0,8	1	1,2	2,3		49,1			44	37	24,2	184086307	184086308	184086308L	184086308L1
	P.5-8.OT.DRP												184086307S	184086308S	184086308S1	184086308S2
	P.5-13.OT	1,1	1,5	1,7	3,3		79,7			71,5	60,1	39,4	184086311	184086311L	184086313	184086313L
	P.5-13.OT.DRP												184086311S	184086311S1	184086313S	184086313S1
	P.5-17.OT	1,5	2	2,2	4,4		104,3			93,5	78,5	51,5	184086317	184086317L	184086317L1	184086317L2
	P.5-17.OT.DRP												184086317S	184086317S1	184086317S2	184086317S3
	P.5-21.OT	2,2	3	2,6	4,9		128,8			115,5	97	63,6	184086321	184086321L	184086321L1	184086321L2
	P.5-21.OT.DRP												184086321S	184086321S1	184086321S2	184086321S3

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

Product codes and hydraulics performance data

X.OT Complete submersible pump

Hydraulic part with upper head and lower support in **stainless steel** and three-phase oil-cooled motor - **380-415V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})									Cable 1,5 m		Cable 15 m		Cable 30 m		Cable 45 m	
		kW	HP		I_N (A)	m^3/h l/min	0 0	0,6 10	1,5 25	2,4 40	4,2 70	6 100	11,4 190	15 250		Code		Code		Code		Code
PUMP CURVE 1	X.1-8.OT	0,25	0,33	0,57	1,65		50,2	44,4	18							184068008		184068008L		184068008L1		Not available
	X.1-8.OT.DRP															184068008S		184068008S1		184068008S2		Not available
	X.1-12.OT	0,37	0,5	0,7	1,7		75,4	66,6	27							184068011		184068011L		184068012		184068012L
	X.1-12.OT.DRP															184068011S		184068011S1		184068012S2		184068012S1
	X.1-18.OT	0,55	0,75	0,87	1,75		113	99,9	40,5							184068017		184068017L		184068018		184068018L
	X.1-18.OT.DRP															184068017S		184068017S1		184068018S		184068018S1
	X.1-25.OT	0,75	1	1,16	2,35		157	138,8	56,3							184068024		184068024L		184068024L1		184068024L2
	X.1-25.OT.DRP															184068024S		184068024S1		184068024S2		184068024S3
	X.1-36.OT	1,1	1,5	1,64	3,25		226,1	199,8	91							184068016		184068016L		184068016L1		184068016L2
	X.1-36.OT.DRP															184068016S		184068016S1		184068016S2		184068016S3
PUMP CURVE 2	X.2-5.OT	0,25	0,33	0,57	1,65		32	31,2	28,2	17						184068104		184068105		184068105L		Not available
	X.2-5.OT.DRP															184068104S		184068105S		184068105S1		Not available
	X.2-8.OT	0,37	0,5	0,71	1,7		51,2	49,9	41,9	27,2						184068107		184068108		184068108L		184068108L1
	X.2-8.OT.DRP															184068107S		184068108S		184068108S1		184068108S2
	X.2-12.OT	0,55	0,75	0,88	1,75		76,8	74,9	62,9	40,8						184068111		184068111L		184068112		184068112L
	X.2-12.OT.DRP															184068111S		184068111S1		184068112S		184068112S1
	X.2-16.OT	0,75	1	1,21	2,4		102,4	99,8	83,8	54,4						184068115		184068115L		184068116		184068116L
	X.2-16.OT.DRP															184068115S		184068115S1		184068116S		184068116S1
	X.2-24.OT	1,1	1,5	1,71	3,3		153,6	149,8	125,8	81,6						184068124L		184068124L1		184068124L2		184068124L3
	X.2-24.OT.DRP															184068123S		184068123S1		184068123S2		184068123S3
	X.2-32.OT	1,5	2	2,17	4,4		204,7	199,7	167,7	108						197069132		197069132L		197069132L1		197069132L2
	X.2-32.OT.DRP															197069132S		197069132S1		197069132S2		197069132S3
PUMP CURVE 3	X.3-6.OT	0,37	0,5	0,68	1,7		33,3		30,4	27	13,7					184068205		184068206		184068206L		Not available
	X.3-6.OT.DRP															184068205S		184068206S		184068206S1		Not available
	X.3-9.OT	0,55	0,75	0,85	1,7		50		45,6	40,5	20,6					184068208		184068209		184068209L		184068209L1
	X.3-9.OT.DRP															184068208S		184068209S		184068209S1		184068209S2
	X.3-13.OT	0,75	1	1,16	2,35		72,2		65,9	58,5	29,8					184068212		184068212L		184068213		184068213L
	X.3-13.OT.DRP															184068212S		184068212S1		184068213S		184068213S1
	X.3-19.OT	1,1	1,5	1,64	3,25		105,5		96,3	85,5	43,5					184068218		184068218L		184068219		184068219L
	X.3-19.OT.DRP															184068218S		184068218S1		184068219S		184068219S1
	X.3-25.OT	1,5	2	2,1	4,3		138,8		126,8	112,5	57,3					197069225L		197068225L1		197068225L2		197069225L3
	X.3-25.OT.DRP															197069225S		197068225S1		197068225S2		197069225S3
PUMP CURVE 5	X.5-4.OT	0,37	0,5	0,7	1,7		24,5			22	18,5	12,1				184068303		184068304		184068304L		Not available
	X.5-4.OT.DRP															184068303S		184068304S		184068304S1		Not available
	X.5-6.OT	0,55	0,75	0,87	1,75		36,8			33	27,7	18,2				184068305		184068306		184068306L		Not available
	X.5-6.OT.DRP															184068305S		184068306S		184068306S1		Not available
	X.5-8.OT	0,75	1	1,15	2,3		49,1			44	37	24,2				184068307		184068308		184068308L		184068308L1
	X.5-8.OT.DRP															184068307S		184068308S		184068308S1		184068308S2
	X.5-13.OT	1,1	1,5	1,71	3,3		79.7			71,5	60,1	39,4				184068311S		184068311L		184068313		184068313L
	X.5-13.OT.DRP															184068311		184068311S1		184068313S		184068313S1
	X.5-17.OT	1,5	2	2,17	4,4		104,3			93,5	78,5	51,5				184068317		184068318		184068318L		184068318L1
	X.5-17.OT.DRP															184068317S		184068318S		184068318S1		184068318S2
	X.5-21.OT	2,2	3	2,6	4,9		128,8			115,5	97	63,6				184068321		184068322		184068322L		184068322L1
	X.5-21.OT.DRP															184068321S		184068322S		184068322S1		184068322S2
PUMP CURVE 8	X.8-6.OT	0,75	1	1,16	2,35		38,4				29	24,5	4,8			184068406		184068407		184068407L		Not available
	X.8-6.OT.DRP															184068406S		184068407S		184068407S1		Not available
	X.8-8.OT	1,1	1,5	1,52	3		51,2				38,6	32,7	6,4			184068408		184068409		184068409L		184068409L1
	X.8-8.OT.DRP															184068408S		184068409S		184068409S1		184068409S2
	X.8-12.OT	1,5	2	2,12	4,3		76,8				58	49	9,6			184068412		184068413		186068413L		186068413L1
	X.8-12.OT.DRP															184068412S		184068413S		184068413S1		184068413S2
	X.8-17.OT	2,2	3	2,9	5,2		109				82,1	69,4	13,6			184068417		184068417L		184068417L1		184068417L2
	X.8-17.OT.DRP															184068417S		184068417S1		184068417S2		184068417S3
P.C.10	X.10-8.OT	1,5	2	1,94	4		48,2				42,6	39,2	23,1	7,9		184068508		184068509		184068509L		184068509L1
	X.10-8.OT.DRP															184068508S		184068509S		184068509S1		184068509S2
	X.10-12.OT	2,2	3	2,76	5		72,3				64	58,8	34,7	11,9		184068512		184068513		184068513SL		184068513L11
	X.10-12.OT.DRP															184068512S		184068513S		184068513S1		184068513S2

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

ZDJet

4" complete submersible pump, made of ZDS hydraulic part, ZDS 2-wire single-phase encapsulated water-cooled H2 motor and supply cable in different lenghts.

Reliable, strong, easy to maintain and available in a wide range of models; it's ready to use as it doesn't require a start and run control panel.

It can be protected against many possible installation or operation faults thanks to the DRP (integrated in the power supply cable) or the DRP-Plus (display monitoring protections).

HYDRAULIC PART

QS4P technopolymer or QS4X stainless steel ZDS hydraulic part, with floating ring technology and reinforced impeller.
Great reliability with the integrated non-return valve.
Special design and selected materials to ensure optimal resistance against sand and other abrasives.
Improved impellers design, which requires less starting torque to the motor.

MOTOR

2 pole asynchronous 2-wire single-phase encapsulated water-cooled H2 motor.
Special and long lasting integrated start and run capacitor. In case of need it can be easily replaced.
Axial and radial water-lubricated bearings allow for maintenance-free operation.
Hermetically sealed stator by 304L stainless steel flanges, internal and external casings, filled by resin to guarantee optimal cooling capacity of temperature during operation.
Rotor set on Kingsbury thrust block equipped with carbon clearance ring and oscillating pads in high-strength stainless steel to sustain high axial loads.
Pre-filled with non-contaminating antifreeze lubricant liquid.
Sand protection to guarantee optimal operation even with sand in the borehole.
Removable lead connector to make installation and maintenance easier.
Supply cable according to drinking water regulations (ACS), available in different lenghts.

MOTOR'S PROTECTIONS

Special thermal protector, manually resettable, especially designed to ensure higher reliability and longer life

°C	**Thermal protection** which stops the motor in case of overheating because of an incorrect installation.
I>	**Current overload protection** which protects the motor in the case the submersible pump is partially or totally blocked.

APPLICATIONS

Submersible pump designed to be used in 4" boreholes (or larger) and tanks, for lifting, distribution, pressurization of water in water systems.

OPTIONAL

DRP:
INTEGRATED DRP -
DRY RUNNING PROTECTION

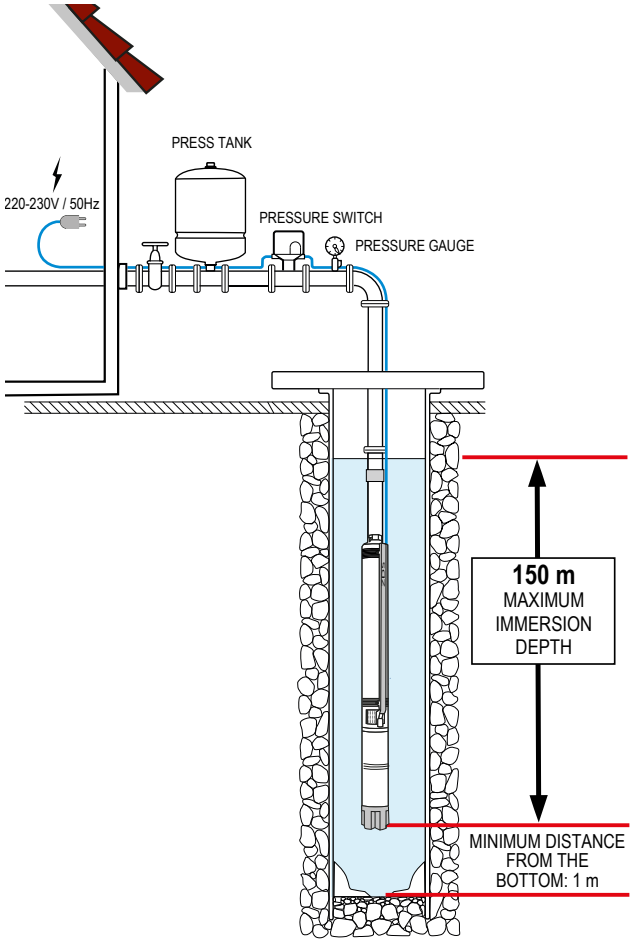
DRP-PLUS
DISPLAY MONITORING
PROTECTION

READY AND EASY TO INSTALL

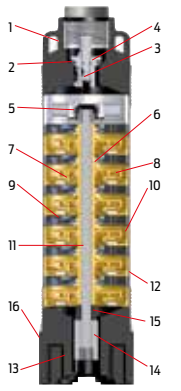
NO NEED FOR EXTERNAL CONTROL PANEL

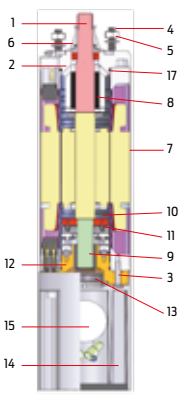
INTEGRATED CAPACITOR AND SPECIAL THERMAL PROTECTION

TECHNICAL SPECIFICATIONS	
Power range:	0,37 - 1,5 kW
Voltage range:	1x220-230V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Degree of protection:	IP 68
Insulation:	Cl. F
Rated ambient temperature:	max. 35° C
Required cooling flow:	min. 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	150, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Allowed range of water PH:	6,4-8,0
Outlet diameter:	1" ¼ G-F - 2" G-F
Maximum delivery (Q):	15.000 l/h
Maximum head (H):	220 m



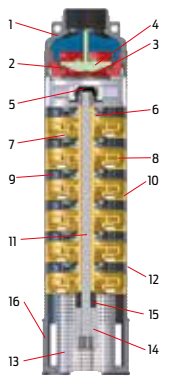
ZDJet.P

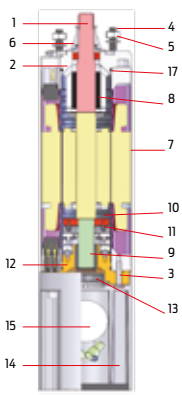




Pos.	COMPONENTS	MATERIALS
1	Upper head	PA 6.6
2	O-Ring	NBR
3	Complete valve	POM
4	Plate valve	POM
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stainless steel AISI 304 (DIN 1.4301)
12	Outer sleeve	Stainless steel AISI 304 (DIN 1.4301)
13	Filter	PA 6.6
14	Coupling	Stainless steel AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	PA 6.6
-	Cable cover	PVC
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Pump support	G20 Cast Iron - cataphoretic treatment
4	Stud	Stainless steel AISI 304
5	Nut	Stainless steel AISI 304
6	Rotating Sand Guard	NBR
7	Outer sleeve	Stainless steel AISI 304
8	Upper bearing	Graphite HT 204
9	Lower bearing	Graphite HT 204
10	Rocking disk	Stainless steel AISI 304
11	Segments	Stainless steel AISI 304
12	O-ring	NBR
13	Diaphragm	NBR
14	Capacitor Box	Technopolimer
15	Capacitor	-

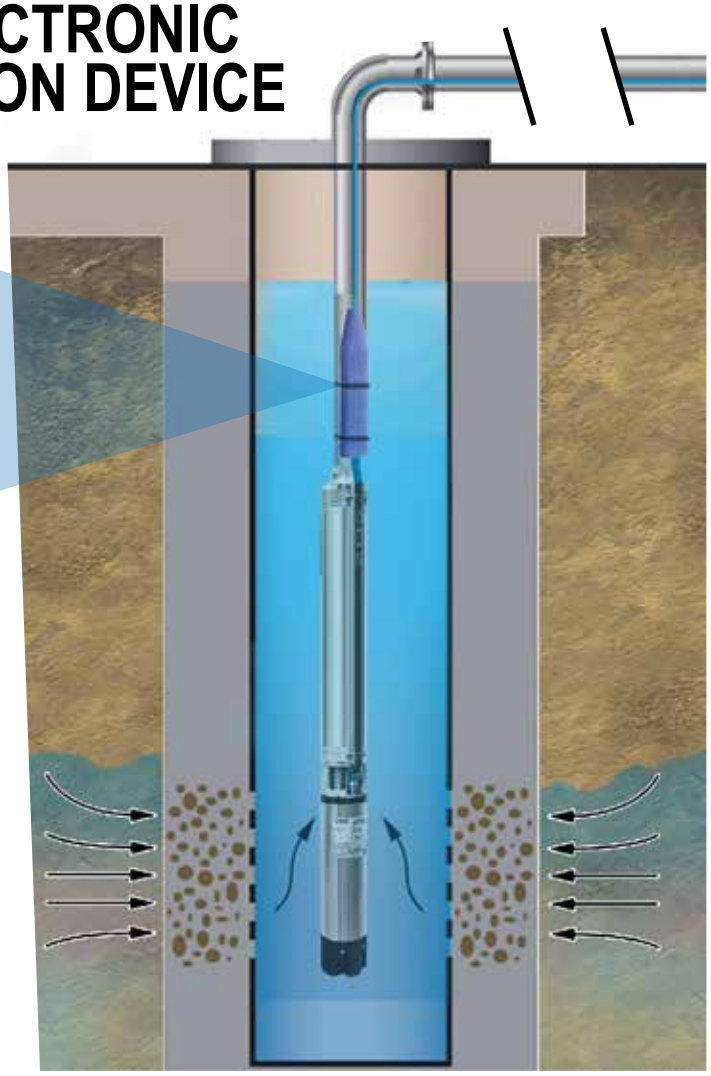
ZDJet.X





Pos.	COMPONENTS	MATERIALS
1	Upper head	Stainless steel AISI 304 (DIN 1.4301)
2	O-Ring	NBR
3	Complete valve	PA 6.6
4	Plate valve	PA 6.6
5	Shaft guide	NBR
6	Bearing	TPU
7	Floating ring	TPU
8	Impeller	Noryl and stainless steel
9	Diffuser	Noryl
10	Stage box	Noryl
11	Pump shaft	Stanless Steel inox AISI 304 (DIN 1.4301)
12	Outer sleeve	Stanless Steel inox AISI 304 (DIN 1.4301)
13	Filter (removable)	Stainless steel AISI 304 (DIN 1.4301)
14	Coupling	Stanless Steel inox AISI 304 (DIN 1.4301)
15	Spacer	Noryl
16	Pump support	Stainless steel AISI 304 (DIN 1.4301)
-	Cable cover	Stainless steel AISI 304 (DIN 1.4301)
1	Shaft End	Stainless steel AISI 304/420
2	Top bracket	G20 Cast Iron - cataphoretic treatment
3	Pump support	G20 Cast Iron - cataphoretic treatment
4	Stud	Stainless steel AISI 304
5	Nut	Stainless steel AISI 304
6	Rotating Sand Guard	NBR
7	Outer sleeve	Stainless steel AISI 304
8	Upper bearing	Graphite HT 204
9	Lower bearing	Graphite HT 204
10	Rocking disk	Stainless steel AISI 304
11	Segments	Stainless steel AISI 304
12	O-ring	NBR
13	Diaphragm	NBR
14	Capacitor Box	Technopolimer
15	Capacitor	-

DRP ELECTRONIC PROTECTION DEVICE



DRP is an electronic device that guarantees optimal protection of the submersible pump from dry running, positioned in the pump supply cable just above the pump. In case of water shortage, the DRP stops the pump immediately, the water drops below the DRP to allow water to flow into the bore hole. Thus the pump operation is directly proportional to the water supply for optimum efficiency. In contrast to traditional solutions, no additional cables, sensors and control boxes are needed. The DRP device has been developed and tested to make the submersible pump function autonomously in conditions of water shortage. The DRP is ready for use, integrated into the connection cable and needs no further installation.

CHARACTERISTICS

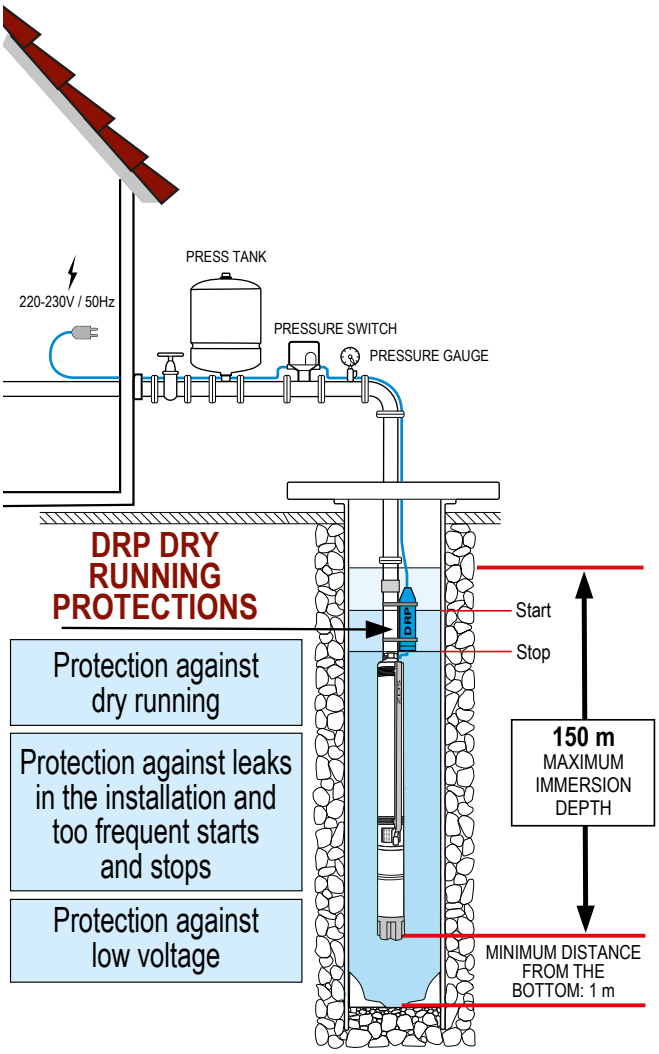
Automatic programmed restarts in case of protection
Stand-by mode at maximum number of restart attempts overcoming
Ready to use, doesn't need any further calibration or setting up

DRP Protection

	Protection against dry running and lack of water in the well The DRP completely protects the submersible pump against lack of water in the well, without the aid of other equipment (probes, cables, sensors, control panels etc.). In case of dry running, the DRP automatically stops the pump. When the water level is restored in the well, the DRP restarts the pump after a programmed cycle time.
	Protection against leaks in the installation and too frequent starts and stops The DRP protects the submersible pump against leaks in the piping system (also when the pressure tank is exhausted or its membrane is defective, or when there is a defective pressure switch) and too frequent starts and stops (for example if the tank is too small for the system). In such cases to avoid potential damages, the DRP, after some automatic re-start attempts, makes the pump enter the stand-by mode.
$U<$	**Protection against low voltage** The DRP protects thesubmersible pump against low voltage, that can damage the motor.

Technical Specifications

Casing:	Thermoplastic material
Voltage range:	1x220-230V +6% / -10% / 50 Hz
Degree of protection:	IP 68
Rated ambient temperature:	-10/+40° C
Size (cm):	33 x 5 x 3



DRP-PLUS DISPLAY MONITORING PROTECTIONS

CHARACTERISTICS

- *LCD display for easy diagnostic*
- *Soft start technology*
- *Extra torque on start up when necessary*
- *Sounder alarm in the event of a fault*
- *Ready to use, doesn't need any further calibration or setting up*
- *Self-learning button for possible field approach*

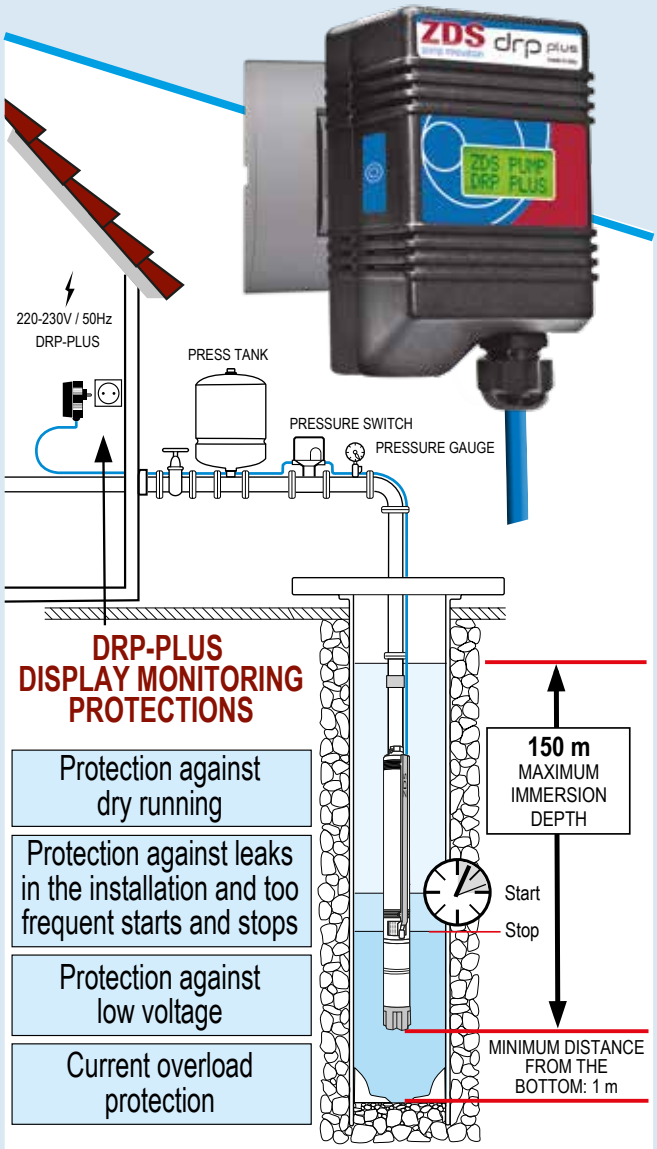
DRP-Plus device is designed to guarantee an optimal protection of the ZDJet pump against many possible installation and operation faults: an alarm will be shown on the dispaly in case of current overload, low voltage or high voltage, too frequent starts and stops and dry running; ensuring a high degree of automation and restoration. ***DRP-Plus*** allows to continuously monitor the submersible pump, guaranteeing its operation in the most efficient way through a Soft start procedure (first start attempt with low starting torque) and if needed, a Strong start procedure to benefit of more starting torque. ***DRP-Plus*** allows to continuously detect and monitor in real time the power: the electrical parameters obtained are processed by a special software, which will efficiently guarantee the correct working conditions. With ***DRP-Plus***, the ZDJet.DRP-Plus submersible pump can work and be continuously protected also when actual supply voltage values are at tolerance limit, providing the effectiveness of the protection operation. In addition, ***DRP-Plus***, thanks to a "smart software" at variable time and automatic restart, can ensure the optimization of water withdrawal from the borehole or tank when the pump is dry running.

DRP-PLUS Protection

	Protection against dry running and lack of water in the well The device automatically stops the submersible pump showing an alarm on the display, to restart it after a programmed cycle time.
	Protection against leaks in the installation and too frequent starts and stops In case of leaks in the piping system (also when the pressure tank is exhausted or its membrane is damaged, or when there is a defective pressure switch) and too frequent starts and stops (for example if the tank is too small for the system), DRP-Plus automatically makes the pump enter the stand-by mode showing an alarm on the display.
U≷	**Protection against low/high voltage** Avoid motor damages caused by too low or too high power supply voltages.
I>	**Current overload protection** In case the submersible pump is partially or totally blocked, after some restart attempts it enters the stand-by mode.

Technical Specifications

Schuko plug:	Integrated
Casing:	Thermoplastic material
Voltage range:	1x220-230V +6% / -10% / 50 Hz
Degree of protection:	IP 40
Rated ambient temperature:	-10/+35° C
Size (cm):	7,6 x 13 x 5,5



Product codes and hydraulics performance data

ZDJet.P complete submersible pump

Hydraulic part with upper head and lower support in **technopolymer** and 2-wire single-phase encapsulated water-cooled motor - **220-230V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})							Cable 1,5 m	Cable 15 m	Cable 30 m	Cable 45 m
					I_N	m^3/h	0	0	0,6	1,5	2,4	4,2	6			
		kW	HP		(A)	l/min	0	6	10	25	40	70	100	Code	Code	Code	Code
PUMP CURVE 1	ZDJet.P.1-8													196025108	196025108L	196025108L1	Not available
	ZDJet.P.1-8.DRP	0,25	0,33	0,55	2,7		50,2	48	44,4	18				196025108S	196025108S1	196025108S2	Not available
	ZDJet.P.1-8.DRP-Plus													196025108P	196025108P1	196025108P2	Not available
	ZDJet.P.1-12													196025112	196025112L	196025112L0	196025112L2
	ZDJet.P.1-12.DRP	0,37	0,5	0,69	3,3		75,4	72	66,6	27				196025112S	196025112S1	196025112S2	196025112S3
	ZDJet.P.1-12.DRP-Plus													196025112P	196025112P1	196025112P2	196025112P3
	ZDJet.P.1-18													196025118	196025118L	196025118L1	196025118L2
	ZDJet.P.1-18.DRP	0,55	0,75	0,87	4,3		113	108	99,9	40,5				196025118S	196025118S1	196025118S2	196025118S3
	ZDJet.P.1-18.DRP-Plus													196025118P	196025118P1	196025118P2	196025118P3
	ZDJet.P.1-25													196025125	196025125L	196025125L1	196025125L2
	ZDJet.P.1-25.DRP	0,75	1	1,23	5,7		157	150	138,8	56,3				196025125S	196025125S1	196025125S2	196025125S3
	ZDJet.P.1-25.DRP-Plus													196025125P	196025125P1	196025125P2	196025125P3
PUMP CURVE 2	ZDJet.P.2-5													196025205	196025205L	196025205L1	Not available
	ZDJet.P.2-5.DRP	0,25	0,33	0,55	2,7		32		31,2	26,2	17			196025205S	196025205S1	196025205S2	Not available
	ZDJet.P.2-5.DRP-Plus													196025205P	196025205P1	196025205P2	Not available
	ZDJet.P.2-8													196025208	196025208L	196025208L0	196025208L2
	ZDJet.P.2-8.DRP	0,37	0,5	0,73	3,4		51,2		49,9	41,9	27,2			196025208S	196025208S1	196025208S2	196025208S3
	ZDJet.P.2-8.DRP-Plus													196025208P	196025208P1	196025208P2	196025208P
	ZDJet.P.2-12													196025212	196025212L	196025212L0	196025212L2
	ZDJet.P.2-12.DRP	0,55	0,75	0,97	4,4		77		74,9	62,9	40,8			196025212S	196025212S1	196025212S2	196025212S3
	ZDJet.P.2-12.DRP-Plus													196025212P	196025212P1	196025212P2	196025212P3
	ZDJet.P.2-16													196025216	196025216L	196025216L1	196025216L2
	ZDJet.P.2-16.DRP	0,75	1	1,27	5,8		102		99,8	83,8	54,4			196025216S	196025216S1	196025216S2	196025216S3
	ZDJet.P.2-16.DRP-Plus													196025216P	196025216P1	196025216P2	196025216P3
	ZDJet.P.2-24													196025224	196025224L	196025224L1	196025224L2
	ZDJet.P.2-24.DRP	1,1	1,5	1,7	8,6		153,6		149,8	125,8	81,6			196025224S	196025224S1	196025224S2	196025224S3
	ZDJet.P.2-24.DRP-Plus													196025224P	196025224P1	196025224P2	196025224P3
PUMP CURVE 3	ZDJet.P.3-6													196025306	196025306L	196025306L1	Not available
	ZDJet.P.3-6.DRP	0,37	0,5	0,7	3,2		33,3			30,4	27	13,7		196025306S	196025306S1	196025306S2	Not available
	ZDJet.P.3-6.DRP-Plus													196025306P	196025306P1	196025306P2	Not available
	ZDJet.P.3-9													196025309	196025309L	196025309L0	196025309L2
	ZDJet.P.3-9.DRP	0,55	0,75	0,93	4		50			45,6	40,5	20,6		196025309S	196025309S1	196025309S2	196025309S3
	ZDJet.P.3-9.DRP-Plus													196025309P	196025309P1	196025309P2	196025309P3
	ZDJet.P.3-13													196025313	196025313L	196025313L0	196025313L2
	ZDJet.P.3-13.DRP	0,75	1	1,24	5,8		72,2			65,9	58,5	29,8		196025313S	196025313S1	196025313S2	196025313S3
	ZDJet.P.3-13.DRP-Plus													196025313P	196025313P1	196025313P2	196025313P3
	ZDJet.P.3-19													196025319	196025319L	196025319L1	196025319L2
	ZDJet.P.3-19.DRP	1,1	1,5	1,66	8,1		105,5			96	85,5	43,50		196025319S	196025319S1	196025319S2	196025319S3
	ZDJet.P.3-19.DRP-Plus													196025319P	196025319P1	196025319P2	196025319P3
	ZDJet.P.3-25													196025325	196025325L	196025325L1	Not available
	ZDJet.P.3-25.DRP	1,5	2	2,34	10,6		138,8			126,8	112,5	57,3		196025325S	196025325S1	196025325S2	Not available
	ZDJet.P.3-25.DRP-Plus													196025325P	196025325P1	196025325P2	Not available
PUMP CURVE 5	ZDJet.P.5-4													196025504	196025504L1	196025504L2	Not available
	ZDJet.P.5-4.DRP	0,37	0,5	0,72	3,3		24,5				22	18,5	12,1	196025504S	196025504S1	196025504S2	Not available
	ZDJet.P.5-4.DRP-Plus													196025504P	196025504P1	196025504P2	Not available
	ZDJet.P.5-6													196025506	196025506L	196025506L1	Not available
	ZDJet.P.5-6.DRP	0,55	0,75	0,95	4,2		37				33	27,7	18,2	196025506S	196025506S1	196025506S2	Not available
	ZDJet.P.5-6.DRP-Plus													196025506P	196025506P1	196025506P2	Not available
	ZDJet.P.5-8													196025508	196025508L	196025508L0	196025508L2
	ZDJet.P.5-8.DRP	0,75	1	1,23	5,7		49,1				44	37	24,2	196025508S	196025508S1	196025508S2	196025508S3
	ZDJet.P.5-8.DRP-Plus													196025508P	196025508P1	196025508P2	196025508P3
	ZDJet.P.5-13													196025513	196025513L	196025513L0	196025513L2
	ZDJet.P.5-13.DRP	1,1	1,5	1,7	8,8		79,7				72	60,1	39,4	196025513S	196025513S1	196025513S2	196025513S3
	ZDJet.P.5-13DRP-.Plus													196025513P	196025513P1	196025513P2	196025513P3
	ZDJet.P.5-17													196025517	196025517L	196025517L1	Not available
	ZDJet.P.5-17.DRP	1,5	2	2,35	10,8		104,3				93,5	78,5	51,5	196025517S	196025517S1	196025517S2	Not available
	ZDJet.P.5-17.DRP-Plus													196025517P	196025517P1	196025517P2	Not available

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

Product codes and hydraulics performance data

ZDJet.X complete submersible pump

Hydraulic part with upper head and lower support in **stainless steel** and 2-wire single-phase encapsulated water-cooled motor - **220-230V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})								Cable 1,5 m	Cable 15 m	Cable 30 m	Cable 45 m
					I_N	m^3/h	0	0,6	1,5	2,4	4,2	6	11,4	15				
		kW	HP		(A)	l/min	0	10	25	40	70	100	190	250	Code	Code	Code	Code
PUMP CURVE 1	ZDJet.X.1-8														196020108	196020108L	196020108L1	Not available
	ZDJet.X.1-8.DRP	0,25	0,33	0,55	2,7		50,2	44,4	18						196020108S	196020108S1	196020108S2	Not available
	ZDJet.X.1-8.DRP-Plus														196020108P	196020108P1	196020108P2	Not available
	ZDJet.X.1-12														196020112	196020112L	196020112L1	196020112L2
	ZDJet.X.1-12.DRP	0,37	0,5	0,69	3,3		75,4	66,6	27						196020112S	196020112S1	196020112S2	196020112S3
	ZDJet.X.1-12.DRP-Plus														196020112P	196020112P1	196020112P2	196020112P3
	ZDJet.X.1-18														196020118	196020118L	196020118L1	196020118L2
	ZDJet.X.1-18.DRP	0,55	0,75	0,87	4,3		113	99,9	40,5						196020118S	196020118S1	196020118S2	196020118S3
	ZDJet.X.1-18.DRP-Plus														196020118P	196020118P1	196020118P2	196020118P3
	ZDJet.X.1-25														196020125	196020125L	196020125L1	196020125L2
	ZDJet.X.1-25.DRP	0,75	1	1,23	5,7		157	138,8	56,3						196020125S	196020125S1	196020125S2	196020125S3
	ZDJet.X.1-25.DRP-Plus														196020125P	196020125P1	196020125P2	196020125P3
	ZDJet.X.1-36														196020136	196020136L	196020136L1	196020136L2
	ZDJet.X.1-36.DRP	1,1	1,5	1,69	8,4		226,1	199,8	81						196020136S	196020136S1	196020136S2	196020136S3
	ZDJet.X.1-36.DRP-Plus														196020136P	196020136P1	196020136P2	196020136P3
PUMP CURVE 2	ZDJet.X.2-5														196020205	196020205L	196020205L1	Not available
	ZDJet.X.2-5.DRP	0,25	0,33	0,55	2,7		32	31,2	26,2	17					196020205S	196020205S1	196020205S2	Not available
	ZDJet.X.2-5.DRP-Plus														196020205P	196020205P1	196020205P2	Not available
	ZDJet.X.2-8														196020208	196020208L	196020208L1	196020208L2
	ZDJet.X.2-8.DRP	0,37	0,5	0,73	3,4		51,2	49,9	41,9	27,2					196020208S	196020208S1	196020208S2	196020208S3
	ZDJet.X.2-8.DRP-Plus														196020208P	196020208P1	196020208P2	196020208P3
	ZDJet.X.2-12														196020212	196020212L	196020212L1	196020212L2
	ZDJet.X.2-12.DRP	0,75	1	0,97	4,4		102	99,8	83,8	54,4					196020212S	196020212S1	196020212S2	196020212S3
	ZDJet.X.2-12.DRP-Plus														196020212P	196020212P1	196020212P2	196020212P3
	ZDJet.X.2-16														196020216	196020216L	196020216L1	196020216L2
	ZDJet.X.2-16.DRP	0,75	1	1,27	5,8		102	99,8	83,8	54,4					196020216S	196020216S1	196020216S2	196020216S3
	ZDJet.X.2-16.DRP-Plus														196020216P	196020216P1	196020216P2	196020216P3
	ZDJet.X.2-24														196020224	196020224L	196020224L1	196020224L2
	ZDJet.X.2-24.DRP	1,1	1,5	1,7	8,6		153,6	149,8	126	81,6					196020224S	196020224S1	196020224S2	196020224S3
	ZDJet.X.2-24.DRP-Plus														196020224P	196020224P1	196020224P2	196020224P3
	ZDJet.X.2-32														196020232	196020232L	196020232L1	Not available
	ZDJet.X.2-32.DRP	1,5	2	2,25	10,5		204,7	199,7	167,7	108					196020232S	196020232S1	196020232S2	Not available
	ZDJet.X.2-32.DRP-Plus														196020232P	196020232P1	196020232P2	Not available
PUMP CURVE 3	ZDJet.X.3-6														196020306	196020306L	196020306L1	Not available
	ZDJet.X.3-6.DRP	0,37	0,5	0,7	3,2		33,3		30,4	27	13,7				196020306S	196020306S1	196020306S2	Not available
	ZDJet.X.3-6.DRP-Plus														196020306P	196020306P1	196020306P2	Not available
	ZDJet.X.3-9														196020309	196020309L	196020309L1	196020309L2
	ZDJet.X.3-9.DRP	0,55	0,75	0,93	4		50		45,6	40,5	20,6				196020309S	196020309S1	196020309S2	196020309S3
	ZDJet.X.3-9.DRP-Plus														196020309P	196020309P1	196020309P2	196020309P3
	ZDJet.X.3-13														196020313	196020313L	196020313L1	196020313L2
	ZDJet.X.3-13.DRP	0,75	1	1,24	5,8		72,2		65,9	58,5	29,8				196020313S	196020313S1	196020313S2	196020313S3
	ZDJet.X.3-13.DRP-Plus														196020313P	196020313P1	196020313P2	196020313P3
	ZDJet.X.3-19														196020319	196020319L	196020319L1	196020319L2
	ZDJet.X.3-19.DRP	1,1	1,5	1,66	8,1		105,5		96	85,5	43,50				196020319S	196020319S1	196020319S2	196020319S3
	ZDJet.X.3-19.DRP-Plus														196020319P	196020319P1	196020319P2	196020319P3
	ZDJet.X.3-25														196020325	196020325L	196020325L1	Not available
	ZDJet.X.3-25.DRP	1,5	2	2,34	10,6		138,8		126,8	112,5	57,3				196020325S	196020325S1	196020325S2	Not available
	ZDJet.X.3-25.DRP-Plus														196020325P	196020325P1	196020325P2	Not available
PUMP CURVE 5	ZDJet.X.5-4														196020504	196020504L	196020504L1	Not available
	ZDJet.X.5-4.DRP	0,37	0,5	0,72	3,3		24,5			22	18,5	12,1			196020504S	196020504S1	196020504S2	Not available
	ZDJet.X.5-4.DRP-Plus														196020504P	196020504P1	196020504P2	Not available
	ZDJet.X.5-6														196020506	196020506L	196020506L1	Not available
	ZDJet.X.5-6.DRP	0,55	0,75	0,95	4,2		37			33	27,7	18,2			196020506S	196020506S1	196020506S2	Not available
	ZDJet.X.5-6.DRP-Plus														196020506P	196020506P1	196020506P2	Not available
	ZDJet.X.5-8														196020508	196020508L	196020508L1	196020508L2
	ZDJet.X.5-8.DRP	0,75	1	1,23	5,7		49,1			44	37	24,2			196020508S	196020508S1	196020508S2	196020508S3
	ZDJet.X.5-8.DRP-Plus														196020508P	196020508P1	196020508P2	196020508P3
	ZDJet.X.5-13														196020513	196020513L	196020513L1	196020513L2
	ZDJet.X.5-13.DRP	1,1	1,5	1,7	8,8		79,7			72	60,1	39,4			196020513S	196020513S1	196020513S2	196020513S3
	ZDJet.X.5-13.DRP-Plus														196020513P	196020513P1	196020513P2	196020513P3
	ZDJet.X.5-17														196020517	196020517L	196020517L1	Not available
	ZDJet.X.5-17.DRP	1,5	2	2,35	10,8		104,3			93,5	78,5	51,5			196020517S	196020517S1	196020517S2	Not available
	ZDJet.X.5-17.DRP-Plus														196020517P	196020517P1	196020517P2	Not available
PUMP CURVE 8	ZDJet.X.8-6														196020806	196020806L	196020806L1	Not available
	ZDJet.X.8-6.DRP	0,75	1	1,26	5,8		38,4				29	25	5		196020806S	196020806S1	196020806S2	Not available
	ZDJet.X.8-6.DRP-Plus														196020806P	196020806P1	196020806P2	Not available
	ZDJet.X.8-8														196020808	196020808L	196020808L1	196020808L2
	ZDJet.X.8-8.DRP	1,1	1,5	1,65	8		51,2				39	33	7		196020808S	196020808S1	196020808S2	196020808S3
	ZDJet.X.8-8.DRP-Plus														196020808P	196020808P1	196020808P2	196020808P3
	ZDJet.X.8-12														196020812	196020812L	196020812L1	Not available
	ZDJet.X.8-12.DRP	1,5	2	2,25	10,4		76,8				58	49	9,6		196020812S	196020812S1	196020812S2	Not available
	ZDJet.X.8-12.DRP-Plus														196020812P	196020812P1	196020812P	Not available
C.S.10	ZDJet.X.10-8														196020108	196020108L	196020108L1	Not available
	ZDJet.X.10-8.DRP	1,5	2	2,4	11		48,2					39,2		7,9	196020108S	196020108S1	196020108S2	Not available
	ZDJet.X.10-8.DRP-Plus														196020108P	196020108P1	196020108P2	Not available

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

P/X.H3F

4" complete submersible pump, made of ZDS hydraulic part, Franklin single-phase encapsulated PSC water-cooled motor, supply cable in different lenghts and ZDS CBH electrical star panel (which includes start and run capacitor).

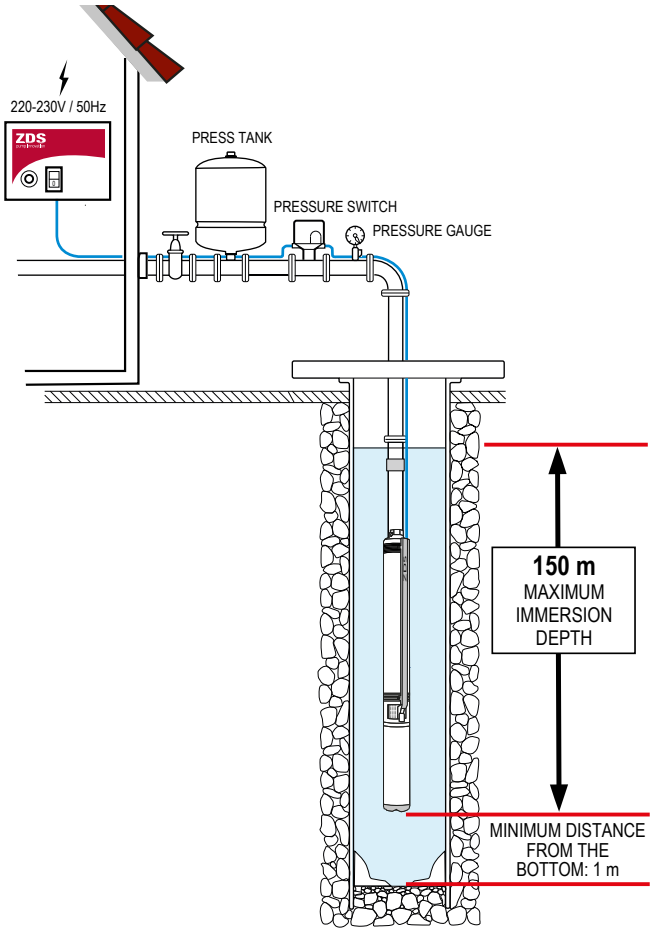
Reliable, strong, easy to maintain and available in a wide range of models.
It can be protected against many possible installation or operation faults thanks to the DRP protection device.

HYDRAULIC PART

QS4P technopolymer or QS4X stainless steel ZDS hydraulic part, with floating ring technology and reinforced impeller.
Great reliability with the integrated non-return valve.
Special design and selected materials to ensure optimal resistance against sand and other abrasives.
Improved impellers design, which requires less starting torque to the motor.

MOTOR

2 pole asynchronous single-phase PSC encapsulated water-cooled Franklin motor.
Axial and radial water-lubricated bearings.
Hermetically resin sealed stator.
Pre-filled with non-contaminating antifreeze lubricant liquid.
Removable lead connector.
Supply cable according to drinking water regulations (ACS), available in different lenghts.



TECHNICAL SPECIFICATIONS

Power range:	0,37 - 2,2 kW
Voltage range:	1x220-230V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Degree of protection:	IP 68
Insulation:	Cl. B
Rated ambient temperature:	max. 30° C
Required cooling flow:	min. 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	20, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Allowed range of water PH:	6,4-8,0
Outlet diameter:	1" ¼ G-F - 2" G-F
Maximum delivery (Q):	15.000 l/h
Maximum head (H):	220 m

OPTIONAL

DRP:
INTEGRATED DRP - DRY RUNNING PROTECTION

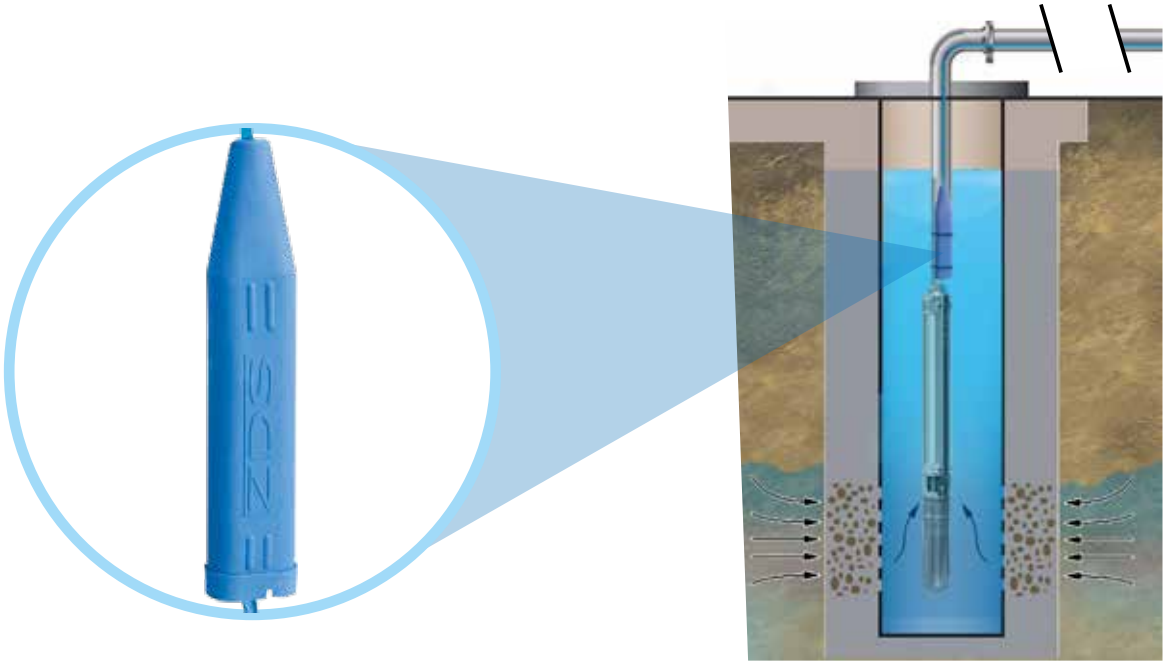
CBH - Electric start panel

Motor start and operation system with capacitor, equipped with thermal amperometric protection against current overload, ON/OFF illuminated switch, terminal box, cable glands, power supply cable, mounting accessories.

APPLICATIONS

Submersible pump designed to be used in 4" boreholes (or larger) and tanks, for lifting, distribution, pressurization of water in water systems.

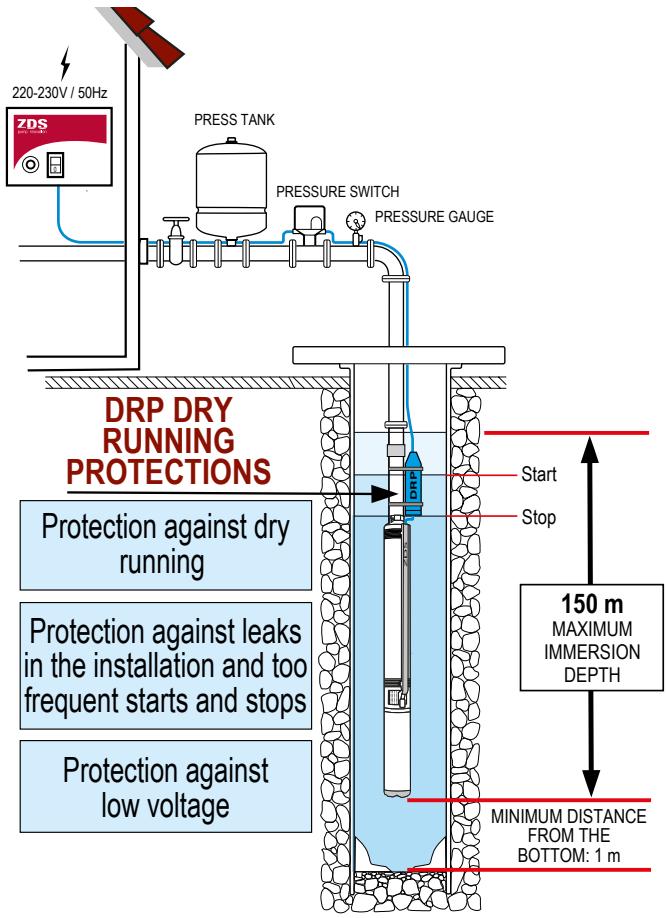
DRP ELECTRONIC PROTECTION DEVICE



CHARACTERISTICS
Automatic programmed restarts in case of protection
Stand-by mode at maximum number of restart attempts overcoming
Ready to use, doesn't need any further calibration or setting up

DRP is an electronic device that guarantees optimal protection of the submersible pump from dry running, positioned in the pump supply cable just above the pump. In case of water shortage, the DRP stops the pump immediately, the water drops below the DRP to allow water to flow into the bore hole. Thus the pump operation is directly proportional to the water supply for optimum efficiency. In contrast to traditional solutions, no additional cables, sensors and control boxes are needed. The DRP device has been developed and tested to make the submersible pump function autonomously in conditions of water shortage. The DRP is ready for use, integrated into the connection cable and needs no further installation.

DRP Protection	
	Protection against dry running and lack of water in the well The DRP completely protects the submersible pump against lack of water in the well, without the aid of other equipment (probes, cables, sensors, control panels etc.). In case of dry running, the DRP automatically stops the pump. When the water level is restored in the well, the DRP restarts the pump after a programmed cycle time.
	Protection against leaks in the installation and too frequent starts and stops The DRP protects the submersible pump against leaks in the piping system (also when the pressure tank is exhausted or its membrane is defective, or when there is a defective pressure switch) and too frequent starts and stops (for example if the tank is too small for the system). In such cases to avoid potential damages, the DRP, after some automatic re-start attempts, makes the pump enter the stand-by mode.
$U<$	**Protection against low voltage** The DRP protects thesubmersible pump against low voltage, that can damage the motor.



Technical Specifications	
Casing:	Thermoplastic material
Voltage range:	1x220-230V +6% / -10% / 50 Hz
Degree of protection:	IP 68
Rated ambient temperature:	-10/+40° C
Size (cm):	33 x 5 x 3

Product codes and hydraulics performance data

P.H3F complete submersible pump

Hydraulic part with upper head and lower support in **technopolymer** and PSC single-phase encapsulated water-cooled motor - **220-230V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})							Cable 1.5 m	Cable 15 m	Cable 30 m
					I_N	m^3/h	0	0.6	1.5	2.4	4.2	6			
		kW	HP		(A)	l/min	0	10	25	40	70	100	Code	Code	Code
PUMP CURVE 1	P.1-8.H3F	0,25	0,33	0,49	2,3		50,2	44,4	18				182079614F	182079614F1	182079614F2
	P.1-8.H3F.DRP												182079614FS	182079614FS1	182079614FS2
	P.1-12.H3F	0,37	0,5	0,69	3,2		75,4	66,6	27				182079616F	182079616F1	182079616F2
	P.1-12.H3F.DRP												182079616FS	182079616FS1	182079616FS2
	P.1-18.H3F	0,55	0,75	0,87	4,3		113	99,9	40,5				182079719F	182079719F1	182079719F2
	P.1-18.H3F.DRP												182079719FS	182079719FS1	182079719FS2
	P.1-25.H3F	0,75	1	1,23	5,6		157	138,8	56,3				182079620F	182079620F1	182079620F2
	P.1-25.H3F.DRP												182079620FS	182079620FS1	182079620FS2
PUMP CURVE 2	P.2-5.H3F	0,25	0,33	0,59	2,2		32	31,2	28,2	17			182079622F	182079622F1	182079622F2
	P.2-5.H3F.DRP												182079622FS	182079622FS1	182079622FS2
	P.2-8.H3F	0,37	0,5	0,73	3,3		51,2	49,9	41,9	27,2			182079624F	182079624F1	182079624F2
	P.2-8.H3F.DRP												182079624FS	182079624FS1	182079624FS2
	P.2-12.H3F	0,55	0,75	0,97	4,4		76,8	74,9	62,9	40,8			182079626F	182079626F1	182079626F2
	P.2-12.H3F.DRP												182079626FS	182079626FS1	182079626FS2
	P.2-16.H3F	0,75	1	1,27	6		102,4	99,8	83,8	54,4			182079628F	182079628F1	182079628F2
	P.2-16.H3F.DRP												182079628FS	182079628FS1	182079628FS2
	P.2-24.H3F	1,1	1,5	1,7	8,4		153,6	149,8	125,8	81,6			182079630F	182079630F1	182079630F2
	P.2-24.H3F.DRP												182079630FS	182079630FS1	182079630FS2
PUMP CURVE 3	P.3-6.H3F	0,37	0,5	0,7	3,1		33,3		30,4	27	13,7		182079632F	182079632F1	182079632F2
	P.3-6.H3F.DRP												182079632FS	182079632FS1	182079632FS2
	P.3-9.H3F	0,55	0,75	0,93	3,9		50		45,6	40,5	20,6		182079634F	182079634F1	182079634F2
	P.3-9.H3F.DRP												182079634FS	182079634FS1	182079634FS2
	P.3-13.H3F	0,75	1	1,24	5,9		72,2		65,9	58,5	29,8		182079636F	182079636F1	182079636F2
	P.3-13.H3F.DRP												182079636FS	182079636FS1	182079636FS2
	P.3-19.H3F	1,1	1,5	1,66	7,9		105,5		96,3	85,5	43,5		182079638F	182079638F1	182079638F2
	P.3-19.H3F.DRP												182079638FS	182079638FS1	182079638FS2
	P.3-25.H3F	1,5	2	2,23	10,1		138,8		126,8	112,5	57,3		182079648F	182079648F1	182079648F2
	P.3-25.H3F.DRP												182079648FS	182079648FS1	182079648FS2
PUMP CURVE 5	P.5-4.H3F	0,37	0,5	0,72	3,2		24,5			22	18,5	12,1	182079640F	182079640F1	182079640F2
	P.5-4.H3F.DRP												182079640FS	182079640FS1	182079640FS2
	P.5-6.H3F	0,55	0,75	0,95	4,1		36,8			33	27,7	18,2	182079642F	182079642F1	182079642F2
	P.5-6.H3F.DRP												182079642FS	182079642FS1	182079642FS2
	P.5-8.H3F	0,75	1	1,23	5,6		49,1			44	37	24,2	182079644F	182079644F1	182079644F2
	P.5-8.H3F.DRP												182079644FS	182079644FS1	182079644FS2
	P.5-13.H3F	1,1	1,5	1,7	8,5		79,7			71,5	60,1	39,4	182079646F	182079646F1	182079646F2
	P.5-13.H3F.DRP												182079646FS	182079646FS1	182079646FS2
	P.5-17.H3F	1,5	2	2,3	10,7		104,3			93,5	78,5	51,5	182079650F	182079650F1	182079650F2
	P.5-17.H3F.DRP												182079650FS	182079650FS1	182079650FS2
	P.5-21.H3F	2,2	3	2,75	14		128,8			115,5	97	63,6	182079652F	182079652F1	Not available
	P.5-21.H3F.DRP												182079652FS	182079652FS1	Not available

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

CBH included in the price.

Product codes and hydraulics performance data

X.H3F complete submersible pump

ZDS pump innovation

Hydraulic part with upper head and lower support in **stainless steel** and PSC single-phase encapsulated water-cooled motor - **220-230V**

	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})								Cable 1,5 m	Cable 15 m	Cable 30 m
					I_N	m^3/h	0	0,6	1,5	2,4	4,2	6	11,4	15			
		kW	HP		(A)	l/min	0	10	25	40	70	100	190	250	Code	Code	Code
PUMP CURVE 1	X.1-8.H3F	0,25	0,33	0,49	2,3		50,2	44,4	18						196071614F	196071614F1	196071614F2
	X.1-8.H3F.DRP														196071614FS	196071614FS1	196071614FS2
	X.1-12.H3F	0,37	0,5	0,69	3,2		75,4	66,6	27						196071616F	196071616F1	196071616F2
	X.1-12.H3F.DRP														196071616FS	196071616FS1	196071616FS2
	X.1-18.H3F	0,55	0,75	0,87	4,3		113	99,9	40,5						196071618F	196071618F1	196071618F2
	X.1-18.H3F.DRP														196071618FS	196071618FS1	196071618FS2
	X.1-25.H3F	0,75	1	1,23	5,6		157	138,8	56,3						196071620F	196071620F1	196071620F2
	X.1-25.H3F.DRP														196071620FS	196071620FS1	196071620FS2
	X.1-36.H3F	1,1	1,5	1,69	8,4		226,1	199,8	91						196071622F	196071622F1	196071622F2
	X.1-36.H3F.DRP														196071622FS	196071622FS1	196071622FS2
PUMP CURVE 2	X.2-5.H3F	0,25	0,33	0,59	2,2		32	31,2	28,2	17					196071626F	196071626F1	196071626F2
	X.2-5.H3F.DRP														196071626FS	196071626FS1	196071626FS2
	X.2-8.H3F	0,37	0,5	0,73	3,3		51,2	49,9	41,9	27,2					196071628F	196071628F1	196071628F2
	X.2-8.H3F.DRP														196071628FS	196071628FS1	196071628FS2
	X.2-12.H3F	0,55	0,75	0,97	4,4		76,8	74,9	62,9	40,8					196071712F	196071712F1	196071712F2
	X.2-12.H3F.DRP														196071712FS	196071712FS1	196071712FS2
	X.2-16.H3F	0,75	1	1,27	6		102,4	99,8	83,8	54,4					196071716F	196071716F1	196071716F2
	X.2-16.H3F.DRP														196071716FS	196071716FS1	196071716FS2
	X.2-24.H3F	1,1	1,5	1,7	8,4		153,6	149,8	125,8	81,6					196071724F	196071724F1	196071724F2
	X.2-24.H3F.DRP														196071724FS	196071724FS1	196071724FS2
	X.2-32.H3F	1,5	2	2,3	10,6		204,7	199,7	167,7	108					196071630F	196071630F1	196071630F2
	X.2-32.H3F.DRP														196071630FS	196071630FS1	196071630FS2
PUMP CURVE 3	X.3-6.H3F	0,37	0,5	0,7	3,1		33,3		30,4	27	13,7				196071636F	196071636F1	196071636F2
	X.3-6.H3F.DRP														196071636FS	196071636FS1	196071636FS2
	X.3-9.H3F	0,55	0,75	0,93	3,9		50		45,6	40,5	20,6				196071638F	196071638F1	196071638F2
	X.3-9.H3F.DRP														196071638FS	196071638FS1	196071638FS2
	X.3-13.H3F	0,75	1	1,24	5,9		72,2		65,9	58,5	29,8				196071640F	196071640F1	196071640F2
	X.3-13.H3F.DRP														196071640FS	196071640FS1	196071640FS2
	X.3-19.H3F	1,1	1,5	1,66	7,9		105,5		96,3	85,5	43,5				196071819F	196071819F1	196071819F2
	X.3-19.H3F.DRP														196071819FS	196071819FS1	196071819FS2
	X.3-25.H3F	1,5	2	2,23	10,1		138,8		126,8	112,5	57,3				196071642F	196071642F1	196071642F2
	X.3-25.H3F.DRP														196071642FS	196071642FS1	196071642FS2
PUMP CURVE 5	X.5-4.H3F	0,37	0,5	0,72	3,2		24,5			22	18,5	12,1			196071646F	196071646F1	196071646F2
	X.5-4.H3F.DRP														196071646FS	196071646FS1	196071646FS2
	X.5-6.H3F	0,55	0,75	0,95	4,1		36,8			33	27,7	18,2			196071648F	196071648F1	196071648F2
	X.5-6.H3F.DRP														196071648FS	196071648FS1	196071648FS2
	X.5-8.H3F	0,75	1	1,23	5,6		49,1			44	37	24,2			196071650F	196071650F1	196071650F2
	X.5-8.H3F.DRP														196071650FS	196071650FS1	196071650FS2
	X.5-13.H3F	1,1	1,5	1,7	8,5		79.7			71,5	60,1	39,4			196071652F	196071652F1	196071652F2
	X.5-13.H3F.DRP														196071652FS	196071652FS1	196071652FS2
	X.5-17.H3F	1,5	2	2,3	10,7		104,3			93,5	78,5	51,5			196071654F	196071654F1	196071654F2
	X.5-17.H3F.DRP														196071654FS	196071654FS1	196071654FS2
	X.5-21.H3F	2,2	3	2,8	14		128,8			115,5	97	63,6			196071656F	196071656F1	Not available
	X.5-21.H3F.DRP														196071656FS	196071656FS1	Not available
PUMP CURVE 8	X.8-6.H3F	0,75	1	1,24	5,8		38,4				29	24,5	4,8		196071660F	196071660F1	196071660F2
	X.8-6.H3F.DRP														196071660FS	196071660FS1	196071660FS2
	X.8-8.H3F	1,1	1,5	1,54	7,4		51,2				38,6	32,7	6,4		196071662F	196071662F1	196071662F2
	X.8-8.H3F.DRP														196071662FS	196071662FS1	196071662FS2
	X.8-12.H3F	1,5	2	2,25	10,3		76,8				58	49	9,6		196071664F	196071664F1	196071664F2
	X.8-12.H3F.DRP														196071664FS	196071664FS1	196071664FS2
	X.8-17.H3F	2,2	3	3.05	15		109				82,1	69,4	13,6		196071666F	196071666F	Not available
	X.8-17.H3F.DRP														196071666FS	196071666FS1	Not available
P.C.10	X.10-8.H3F	1,5	2	2,6	10		48,2				42,6	39,2	23,1	7,9	196071668F	196071668F1	196071668F2
	X.10-8.H3F.DRP														196071668FS	196071668FS1	196071668FS2
	X.10-12.H3F	2,2	3	2,9	14,8		72,3				64	58,8	34,7	11,9	196071670F	196071670F1	Not available
	X.10-12.H3F.DRP														196071670FS	196071670FS1	Not available

Total head in meters = H= dynamic total pressure

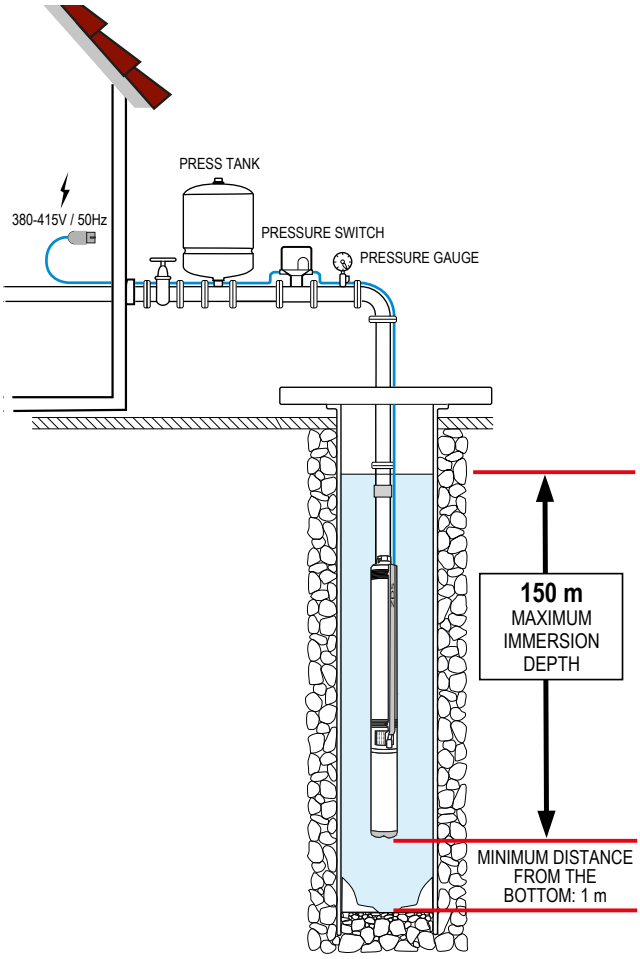
*Power consumption **Current consumption

CBH included in the price.

P/X.HTF

4" complete submersible pump, made of ZDS hydraulic part, Franklin three-phase encapsulated water-cooled motor and supply cable in different lenghts.

Reliable, strong and easy to maintain, it's available in a wide range of models. It can be protected against many possible installation or operation faults thanks to the DRP protection device.
It requires a start, operation and protection system.



HYDRAULIC PART

QS4P technopolymer or QS4X stainless steel ZDS hydraulic part, with floating ring technology and reinforced impeller.
Great reliability with the integrated non-return valve.
Special design and selected materials to ensure optimal resistance against sand and other abrasives.
Improved impellers design, which requires less starting torque to the motor.

MOTOR

2 pole asynchronous three-phase encapsulated water-cooled Franklin motor.
Axial and radial water-lubricated bearings.
Hermetically resin sealed stator.
Pre-filled with non-contaminating antifreeze lubricant liquid.
Removable lead connector.
Supply cable according to drinking water regulations (ACS), available in different lenghts.

TECHNICAL SPECIFICATIONS

Overload protection requirements according to:	EN 60947-4-1 trip time < 10 sec. at $5xI_N$
Power range:	0,37 - 2,2 kW
Voltage range:	3x380-415V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Degree of protection:	IP 68
Insulation:	Cl. B
Rated ambient temperature:	max. 30° C
Required cooling flow:	min. 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	20, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Allowed range of water PH:	6,4-8,0
Outlet diameter:	1" ¼ G-F - 2" G-F
Maximum delivery (Q):	15.000 l/h
Maximum head (H):	220 m

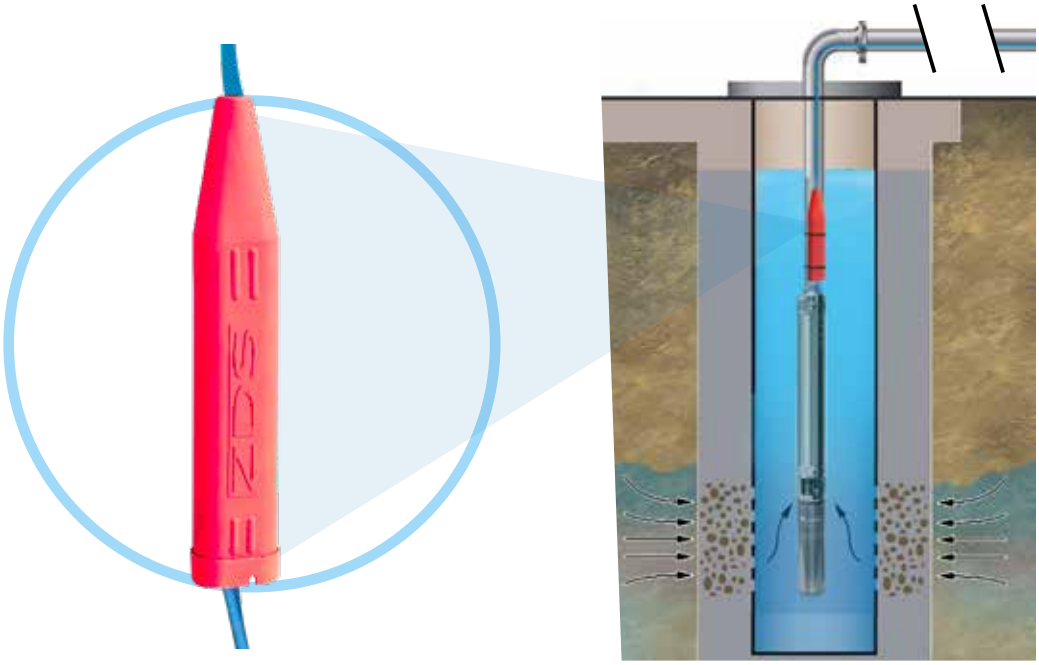
OPTIONAL

DRP:
INTEGRATED DRP -
DRY RUNNING PROTECTION

APPLICATIONS

Submersible pump designed to be used in 4" boreholes (or larger) and tanks, for lifting, distribution, pressurization of water in water systems.

DRP ELECTRONIC PROTECTION DEVICE

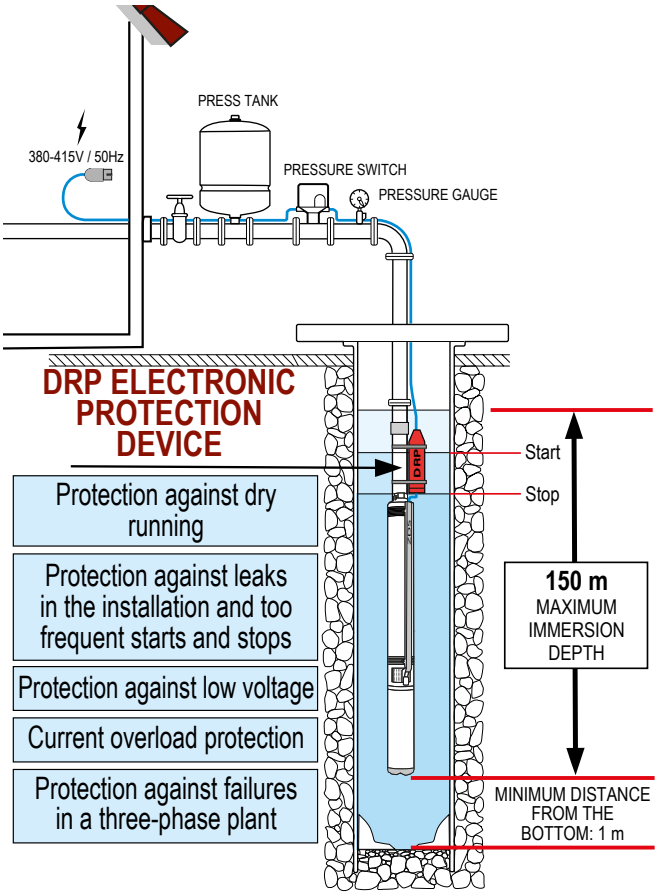


CHARACTERISTICS
Automatic programmed restarts in case of protection
Stand-by mode at maximum number of restart attempts overcoming
Ready to use, doesn't need any further calibration or setting up

DRP is an electronic device that guarantees optimal protection of the submersible pump from dry running, positioned in the pump supply cable just above the pump. In case of water shortage, the DRP stops the pump immediately, the water drops below the DRP to allow water to flow into the bore hole. Thus the pump operation is directly proportional to the water supply for optimum efficiency. In contrast to traditional solutions, no additional cables, sensors and control boxes are needed. The DRP device has been developed and tested to make the submersible pump function autonomously in conditions of water shortage. The DRP is ready for use, integrated into the connection cable and needs no further installation.

DRP Protection

	Protection against dry running and lack of water in the well The DRP completely protects the submersible pump against lack of water in the well, without the aid of other equipment (probes, cables, sensors, control panels etc.). In case of dry running, the DRP automatically stops the pump. When the water level is restored in the well, the DRP restarts the pump after a programmed cycle time.
	Protection against leaks in the installation and too frequent starts and stops The DRP protects the submersible pump against leaks in the piping system (also when the pressure tank is exhausted or its membrane is defective, or when there is a defective pressure switch) and too frequent starts and stops (for example if the tank is too small for the system). In such cases to avoid potential damages, the DRP, after some automatic re-start attempts, makes the pump enter the stand-by mode.
$U<$	**Protection against low voltage** The DRP protects thesubmersible pump against low voltage, that can damage the motor.
$I>$	**Current overload protection** In case the submersible pump is partially or totally blocked, after some restart attempts it enters the stand-by mode.
	Protection against failures in a three-phase plant The submersible pump is protected against phase-loss (caused by a brake of a fuse). The DRP protects the motor against damaging.



Technical Specifications	
Casing:	Thermoplastic material
Voltage range:	3x380-415V +6% / -10% / 50 Hz
Degree of protection:	IP 68
Rated ambient temperature:	-10/+40° C
Size (cm):	33 x 5 x 3

Product codes and hydraulics performance data

P.HTF complete submersible pump

Hydraulic part with upper head and lower support in **technopolymer** and three-phase encapsulated water-cooled motor- **380-415V**

	Model	Potenza		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})							Cable1.5 m		Cable15 m		Cable30 m	
					I_N	m^3/h	0	0.6	1.5	2.4	4.2	6						
		kW	HP		(A)	l/min	0	10	25	40	70	100		Code		Code		Code
PUMP CURVE 1	P.1-12.HTF	0,37	0,5	0,56	1,1		75,4	66,6	27					184083012		184083012L1		184083012L1
	P.1-12.HTF.DRP													184083012S		184083012S1		184083012S2
	P.1-18.HTF	0,55	0,75	0,81	1,6		113	99,9	40,5					184083018		184083018L		184083018L1
	P.1-18.HTF.DRP													184083018S		184083018S1		184083018S2
	P.1-25.HTF	0,75	1	1,07	2,1		157	138,8	56,3					184083025		184083025L		184083025L1
	P.1-25.HTF.DRP													184083025S		184083025S1		184083025S2
PUMP CURVE 2	P.2-8.HTF	0,37	0,5	0,59	1,2		51,2	49,9	41,9	27,2				184083108		184083108L		184083108L1
	P.2-8.HTF.DRP													184073108S		184083108S1		184083108S2
	P.2-12.HTF	0,55	0,75	0,86	1,7		76,8	74,9	62,9	40,8				184083112		184083112L		184083112L1
	P.2-12.HTF.DRP													184083112S		184083112S1		184083112S2
	P.2-16.HTF	0,75	1	1,11	2,1		102,4	99,8	83,8	54,4				184083116		184083116L		184083116L1
	P.2-16.HTF.DRP													184083116S		184083116S1		184083116S2
	P.2-24.HTF	1,1	1,5	1,6	3		153,6	149,8	125,8	81,6				184083124		184083124L		184083124L1
	P.2-24.HTF.DRP													184083124S		184083124S1		184083124S2
PUMP CURVE 3	P.3-6.HTF	0,37	0,5	0,54	1,1		33,3		30,4	27	13,7			184083206		184083206L		184083206L1
	P.3-6.HTF.DRP													184083206S		184083206S1		184083206S2
	P.3-9.HTF	0,55	0,75	0,77	1,5		50		45,6	40,5	20,6			184083209		184083209L		184083209L1
	P.3-9.HTF.DRP													184083209S		184083209S1		184083209S2
	P.3-13.HTF	0,75	1	1,07	2		72,2		65,9	58,5	29,8			184083213		184083213L		184083213L1
	P.3-13.HTF.DRP													184083213S		184083213S1		184083213S2
	P.3-19.HTF	1,1	1,5	1,49	2,8		105,5		96,3	85,5	43,5			184083219		184083219L		184083219L1
	P.3-19.HTF.DRP													184083219S		184083219S1		184083219S2
	P.3-25.HTF	1,5	2	2	3,8		138,8		126,8	112,5	57,3			184083225		184083225L		184083225L1
	P.3-25.HTF.DRP													184083225S		184083225S1		184083225S2
PUMP CURVE 5	P.5-4.HTF	0,4	0,5	0,56	1,1		24,5			22	18,5	12,1		184083304		184083304L		184083304L1
	P.5-4.HTF.DRP													184083304S		184083304S1		184083304S2
	P.5-6.HTF	0,55	0,75	0,81	1,6		36,8			33	27,7	18,2		184083306		184083306L		184083306L1
	P.5-6.HTF.DRP													184083306S		184083306S1		184083306S2
	P.5-8.HTF	0,75	1	1,03	1,9		49,1			44	37	24,2		184083308		184083308L		184083308L1
	P.5-8.HTF.DRP													184083308S		184083308S1		184083308S2
	P.5-13.HTF	1,1	1,5	1,63	3,1		79,7			71,5	60,1	39,4		184083313		184083313L		184083313L1
	P.5-13.HTF.DRP													184083313S		184083313S1		184083313S2
	P.5-17.HTF	1,5	2	2,2	4		104,3			93,5	78,5	51,5		184083317		184083317L		184083317L1
	P.5-17.HTF.DRP													184083317S		184083317S1		184083317S2
	P.5-21.HTF	2,2	3	2,55	4,8		128,8			115,5	97	63,6		184083321L		184083321L1		184083321L2
	P.5-21.HTF.DRP													184083321S		184083321S1		184083321S2

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

Product codes and hydraulics performance data

X.HTF complete submersible pump

Hydraulic part with upper head and lower support in **stainless steel** and three-phase encapsulated water-cooled motor- **380-415V**

	Model	Potenza		P.C.*	C.C.**	Hydraulic performance (n~2.850 min^{-1})								Cable1,5 m		Cable15 m		Cable30 m	
		kW	HP		I_N	m^3/h	0	0,6	1,5	2,4	4,2	6	11,4	15					
					(A)	l/min	0	10	25	40	70	100	190	250		Code		Code		Code
PUMP CURVE 1	X.1-12.HTF	0,37	0,5	0,56	1,1		75,4	66,6	27							184075012		184075012L		184075012L1
	X.1-12.HTF.DRP															184075012S		184075012S1		184075012S2
	X.1-18.HTF	0,55	0,75	0,81	1,6		113	99,9	40,5							184075018		184075018L		184075018L1
	X.1-18.HTF.DRP															184075018S		184075018S1		184075018S2
	X.1-25.HTF	0,75	1	1,07	2,1		157	138,8	56,3							184075025		184075025L		184075025L1
	X.1-25.HTF.DRP															184075025S		184075025S1		184075025S2
	X.1-36.HTF	1,1	1,5	1,49	2,9		226,1	199,8	91							184075036		184075036L		184075036L1
	X.1-36.HTF.DRP															184075036S		184075036S1		184075036S2
PUMP CURVE 2	X.2-8.HTF	0,37	0,5	0,59	1,2		51,2	49,9	41,9	27,2						184075108		184075108L		184075108L1
	X.2-8.HTF.DRP															184075108S		184075108S1		184075108S2
	X.2-12.HTF	0,55	0,75	0,86	1,7		76,8	74,9	62,9	40,8						184075112		184075112L		184075112L1
	X.2-12.HTF.DRP															184075112S		184075112S1		184075112S2
	X.2-16.HTF	0,75	1	1,11	2,1		102,4	99,8	83,8	54,4						184075116		184075116L		184075116L1
	X.2-16.HTF.DRP															184075116S		184075116S1		184075116S2
	X.2-24.HTF	1,1	1,5	1,6	3		153,6	149,8	125,8	81,6						184075124		184075124L		184075124L1
	X.2-24.HTF.DRP															184075124S		184075124S1		184075124S2
	X.2-32.HTF	1,5	2	2,16	4,1		204,7	199,7	167,7	108						184075132		184075132L		184075132L1
	X.2-32.HTF.DRP															184075132S		184075132S1		184075132S2
PUMP CURVE 3	X.3-6.HTF	0,37	0,5	0,54	1,1		33,3		30,4	27	13,7					184075206		184075206L		184075206L1
	X.3-6.HTF.DRP															184075206S		184075206S1		184075206S2
	X.3-9.HTF	0,55	0,75	0,77	1,5		50		45,6	40,5	20,6					184075209		184075209L		184075209L1
	X.3-9.HTF.DRP															184075209S		184075209S1		184075209S2
	X.3-13.HTF	0,75	1	1,07	2		72,2		65,9	58,5	29,8					184075213		184075213L		184075213L1
	X.3-13.HTF.DRP															184075213S		184075213S1		184075213S2
	X.3-19.HTF	1,1	1,5	1,49	2,8		105,5		96,3	85,5	43,5					184075219		184075219L		184075219L1
	X.3-19.HTF.DRP															184075219S		184075219S1		184075219S2
	X.3-25.HTF	1,5	2	2	3,8		138,8		126,8	112,5	57,3					184075225		184075225L		184075225L1
	X.3-25.HTF.DRP															184075225S		184075225S1		184075225S2
PUMP CURVE 5	X.5-4.HTF	0,37	0,5	0,56	1,1		24,5			22	18,5	12,1				184075304		184075304L		184075304L1
	X.5-4.HTF.DRP															184075304S		184075304S1		184075304S2
	X.5-6.HTF	0,55	0,75	0,81	1,6		36,8			33	27,7	18,2				184075306		184075306L		184075306L1
	X.5-6.HTF.DRP															184075306S		184075306S1		184075306S2
	X.5-8.HTF	0,75	1	1,03	1,9		49,1			44	37	24,2				184075308		184075308L		184075308L1
	X.5-8.HTF.DRP															184075308S		184075308S1		184075308S2
	X.5-13.HTF	1,1	1,5	1,63	3,1		79.7			71,5	60,1	39,4				184075313		184075313L		184075313L1
	X.5-13.HTF.DRP															184075313S		184075313S1		184075313S2
	X.5-17.HTF	1,5	2	2,15	4		104,3			93,5	78,5	51,5				184075317		184075317L		184075317L1
	X.5-17.HTF.DRP															184075317S		184075317S1		184075317S2
	X.5-21.HTF	2,2	3	2,55	4,8		128,8			115,5	97	63,6				184075321		184075321L		184075321L1
	X.5-21.HTF.DRP															184075321S		184075321S1		184075321S2
PUMP CURVE 8	X.8-6.HTF	0,75	1	1,07	2,1		38,4				29	24,5	4,8			184075406		184075406L		184075406L1
	X.8-6.HTF.DRP															184075406S		184075406S1		184075406S2
	X.8-8.HTF	1,1	1,5	1,37	2,6		51,2				38,6	32,7	6,4			184075408		184075408L		184075408L1
	X.8-8.HTF.DRP															184075408S		184075408S1		184075408S2
	X.8-12.HTF	1,5	2	2,06	3,9		76,8				58	49	9,6			184075412		184075412L		184075412L1
	X.8-12.HTF.DRP															184075412S		184075412S1		184075412S2
	X.8-17.HTF	2,2	3	2,85	5.3		109				82,1	69,4	13,6			184075417		184075417L		184075417L1
	X.8-17.HTF.DRP															184075417S		184075417S1		184075417S2
P.C.10	X.10-8.HTF	1,5	2	1,89	3,5		48,2				42,6	39,2	23,1	7,9		184075508		184075508L		184075508L1
	X.10-8.HTF.DRP															184075508S		184075508S1		184075508S2
	X.10-12.HTF	2,2	3	2,77	5,2		72,3				64	58,8	34,7	11,9		184075512		184075512L		184075512L1
	X.10-12.HTF.DRP															184075512S		184075512S1		184075512S2

Total head in meters = H= dynamic total pressure

*Power consumption **Current consumption

Plug&GO.evo

4" complete submersible pump, made of ZDS hydraulic part, ZDS 2-wire single-phase encapsulated water-cooled motor, supply cable in different lenghts and Evo diagnostic device.

It is particularly recommended for domestic installations, since it is completely automatic and easy to install (it only needs a pressure tank to compensate for any leaks in the plant). The integrated electronics ensures the operation of the pump (pressure switch is not needed) and protects the pump against many other possible problems.
The ***Evo*** diagnostic device allows to continuously display the Plug&GO.Evo operation and to monitor the possible system faults, such as current overload, low voltage or high voltage, too frequent starts and stops and dry running; ensuring a high degree of automation and restoration.
Evo allows to continuously monitor the submersible pump, guaranteeing its operation in the most efficient way through a Soft start procedure (first start attempt with low starting torque) and if needed, a Strong start procedure to benefit of more starting torque.
Evo allows to continuously detect and monitor in real time the power: the electrical parameters obtained are processed by a special software, which will efficiently guarantee the correct working conditions. With ***Evo***, the Plug&Go. Evo submersible pump can work and be continuously protected also when actual supply voltage values are at tolerance limit, providing the effectiveness of the protection operation. In addition, ***Evo***, thanks to a "smart software" at variable time and automatic restart, can ensure the optimization of water withdrawal from the borehole or tank when the pump is dry running.

AUTOMATIC PROTECTIONS

- **Protection against dry running and lack of water in the well or tank**
- **Thermal protection**
- **Current overload protection**
- **Protection against leaks in the installation and too frequent starts and stops**
- **Protection against low/high voltage**
- **Protection against voltage peaks**
- **Check-valve working test**

THE INNOVATIVE SOLUTION IN ONE BOX

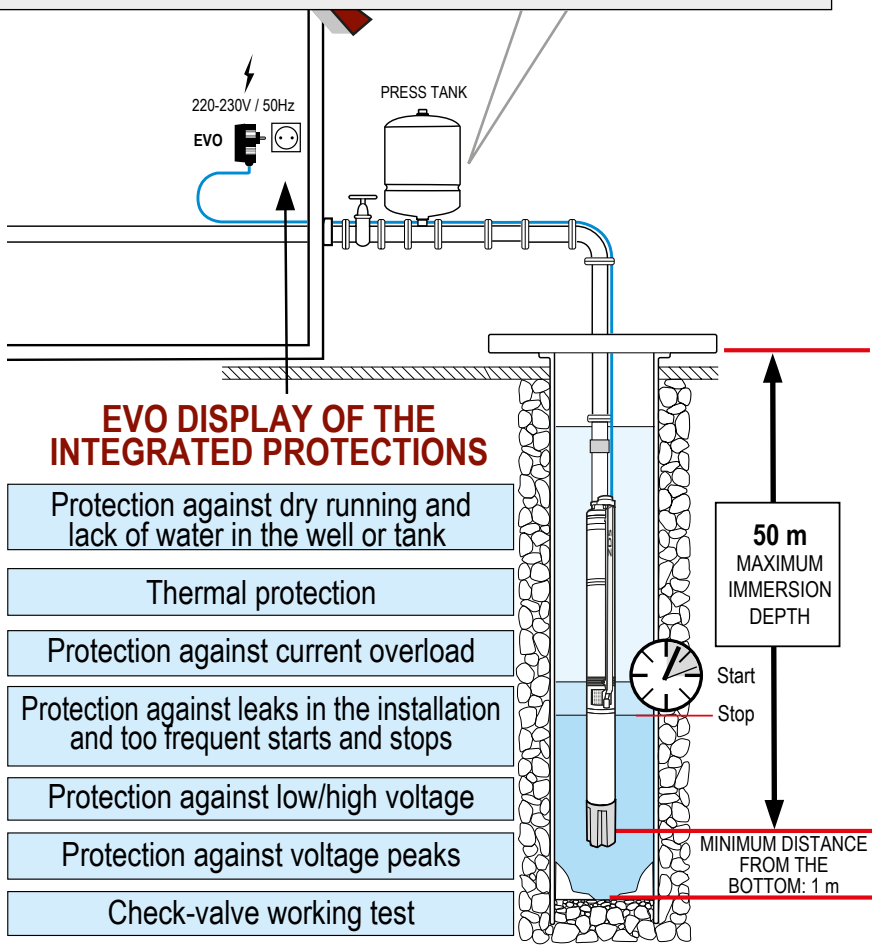
THE EASIEST 4” SUBMERSIBLE PUMP TO INSTALL

HYDRAULIC PART
ZDS hydraulic part with integrated electronic.
Hydraulic part internal technology with floating ring and reinforced impeller.
Great reliability with the integrated non-return valve.
Special design and selected materials to ensure optimal resistance against sand and other abrasives.
Improved impellers design, which requires less starting torque to the motor.

MOTOR
2 pole asynchronous 2-wire single-phase encapsulated water-cooled motor.
Special and long lasting integrated start and run capacitor. In case of need it can be easily replaced.
Soft start procedure.
Axial and radial water-lubricated bearings allow for maintenance-free operation.
Hermetically sealed stator by 304L stainless steel flanges, internal and external casings, filled by resin to guarantee optimal cooling capacity of temperature during operation.
Rotor set on Kingsbury thrust block equipped with carbon clearance ring and oscillating pads in high-strength stainless steel to sustain high axial loads.
Pre-filled with non-contaminating antifreeze lubricant liquid.
Sand protection to guarantee optimal operation even with sand in the borehole.
Removable lead connector to make installation and maintenance easier.
Supply cable according to drinking water regulations (ACS), available in different lenghts.

To guarantee the correct operation of Plug&GO.Evo, it is necessary to install a pressure tank if not provided already. The pressure tank should be correctly sized according to the installation requirements.

TECHNICAL SPECIFICATIONS	
Power range:	0,37 - 1,1 kW
Voltage range:	1x220-230V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Degree of protection:	IP 68
Insulation:	Cl. F
Rated ambient temperature:	max. 35° C
Required cooling flow:	min 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	150, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	20-50 m
Allowed range of water PH:	6,4-8,0
Outlet diameter:	1”
Maximum delivery (Q):	6.000 l/h
Maximum head (H):	79 m



EVO DISPLAY OF THE INTEGRATED PROTECTIONS

- Protection against dry running and lack of water in the well or tank
- Thermal protection
- Protection against current overload
- Protection against leaks in the installation and too frequent starts and stops
- Protection against low/high voltage
- Protection against voltage peaks
- Check-valve working test

Plug&GO.evo

Evo: Display of the integrated protections

	Protection against dry running and lack of water in the well The Plug&GO.Evo pump completely protects itself against lack of water in the well or tank, without the aid of other equipment (probes, cables, sensors, control panels etc.). In case of dry running, the Plug&GO.Evo pump automatically stops, to restart after a programmed cycle time.
°C	**Thermal protection** The Plug&GO.Evo pump is automatically protected against motor overheating due to an incorrect installation. In such cases, the thermal protection system stops the pump, which automatically restarts as soon as the correct working temperature parameters are restored.
I>	**Current overload protection** The Plug&GO.Evo pump is completely protected against overload. In case the pump is partially or totally blocked, the Plug&GO.Evo software, after some automatic restart attempts, makes the pump enter the stand-by mode.
	Protection against leaks in the installation and too frequent starts and stops The Plug&GO.Evo pump is automatically protected against leaks in the piping system (also when the pressure tank is exhausted or its membrane is damaged) and too frequent starts and stops (for example if the tank is of the incorrect size). In these cases, the Plug&GO. Evo automatically enters the stand-by mode.
U≷	**Protection against low/high voltage** The Plug&GO.Evo pump is protected against low or high voltage, that can damage the motor. In these situations, in order to avoid potential damages, the pump stops running. A number of consecutive automatic attempts verifies if the operating parameters are correct; if they are not, the pump enters stand-by mode.
	Protection against voltage peaks The Evo diagnostic device is equipped with internal filters, designed to prevent voltage peaks from damaging the electronic components integrated in the Plug&GO.Evo. The filters are repleaceble and easy to acess. It is designed to filter the voltage peaks, eventually by interrupting the power supply. Evo diagnostic device works automatically and does not need any scheduled maintenance.
	Check-valve working test The Plug&GO.Evo pump regularly controls if the check valve works properly and if it is not clogged by any impurities. In case it is clogged, a special software procedure mechanically releases the check valve or makes the pump enter the stand-by mode.

CHARACTERISTICS

Led interface for operation and protection's display
Alarm buzzer: audio signal during attempts and during stand-by
Ready to use, doesn't need any further calibration or setting up

Technical Specifications

Schuko plug:	Integrated
Casing:	Thermoplastic material
Voltage range:	1x220-230V +6% / -10% / 50 Hz
Degree of protection:	IP 40
Rated ambient temperature:	-10/+35° C
Size (cm):	7,6 x 13 x 5,5

ADVANTAGES:

INTEGRATED ELECTRONIC PROTECTIONS

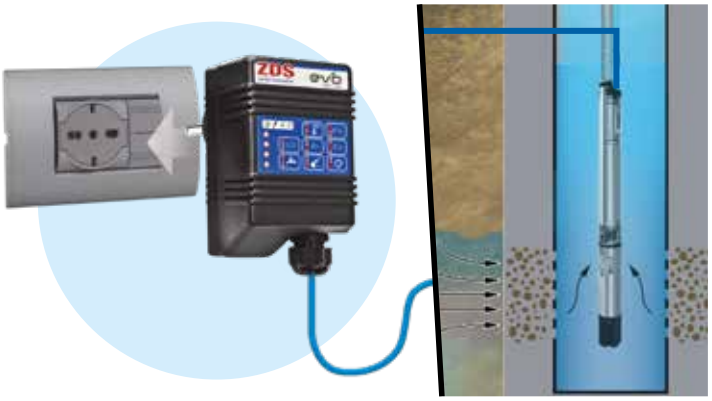
INTEGRATED PRESSURE SWITCH

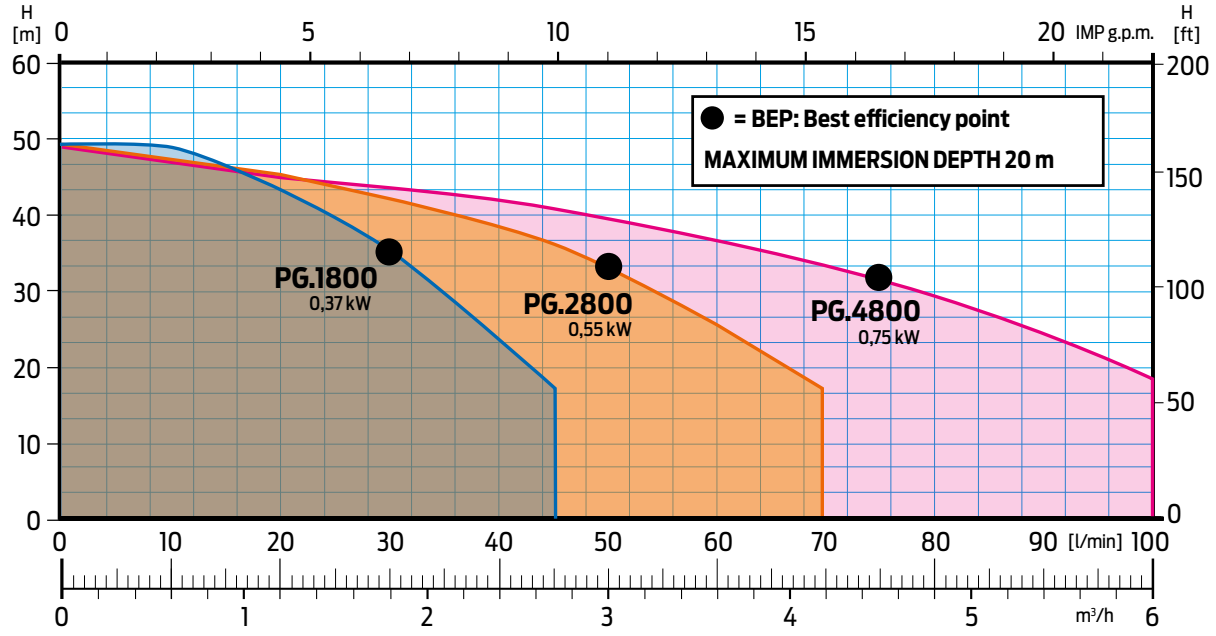
MONITORING AND DIAGNOSTIC OF PUMP STATUS

ALARMS DIAGNOSTIC

SOFT START

NO CONTROL PANEL REQUIRED



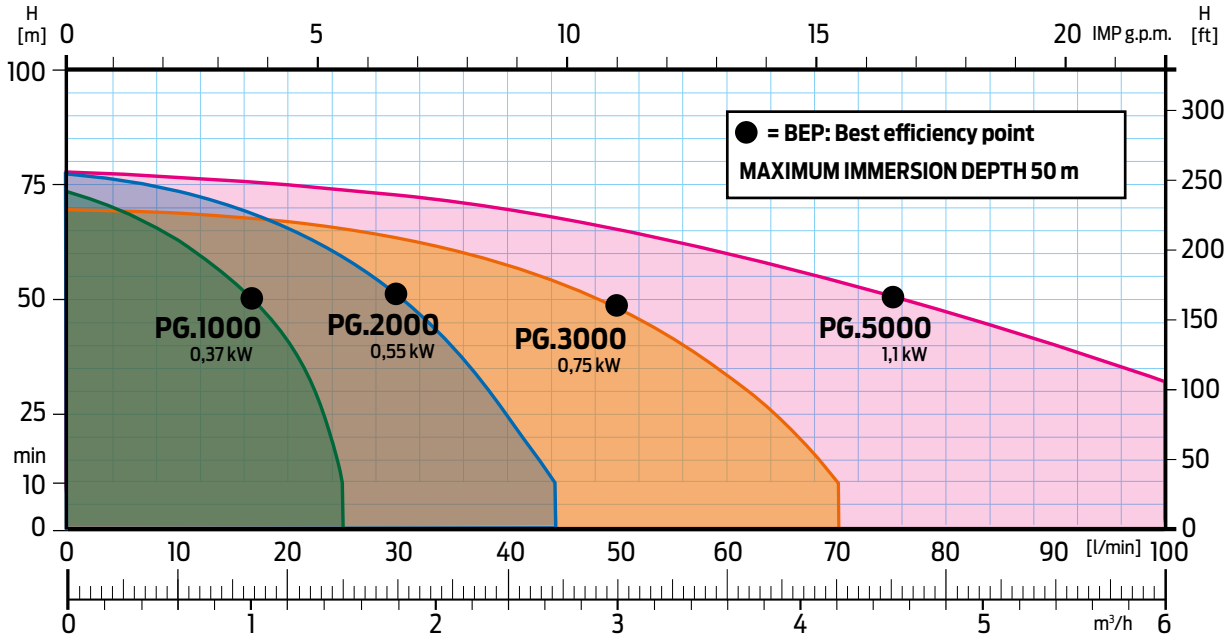


220-230V

Model	Power		P.C.*	C.C.**	Soft Start	Start	Hydraulic performance (n~2.850 min⁻¹)											Cable 1,5 m		Cable 15 m		Cable 30 m		Cable 45 m		L. mm	W. Kg
	kW	HP	kW	(A) / I_n	A start I_s start	A start I_s start	m³/h	0	0,6	1,2	1,5	1,8	2,7	3,6	4,2	4,8	6,0		CODE		CODE		CODE		CODE		
							l/min	0	10	20	25	30	45	60	70	80	100										
PG.1800.Evo	0,37	0,5	0,73	3,4	7,5	9,8		49,6	48,7	43,3	40	35,3	17,3						1960705200E		1960705200L		1960705200L1		1960705200L2	870	15,7
PG.2800.Evo	0,55	0,75	0,93	4	10	13,5	H	48,5		45,7	44,3	42,2	36	25,6	17,3				1960705210E		1960705210L		1960705210L1		1960705210L2	1010	17,4
PG.4800.Evo	0,75	1	1,23	5,7	13	17		49,2				44,3	41,2	36,9	33,2	29,5	19,1		1960705220E		1960705220L		1960705220L1		1960705220L2	1040	19,2

*Power consumption **Current consumption - **L**=Lenght - **P**=Weight - Total head in meters = H= dynamic total pressure

Evo device included in the price



220-230V

Model	Power		P.C.*	C.C.**	Soft Start	Start	Hydraulic performance (n~2.850 min⁻¹)												Cable 1,5 m		Cable 15 m		Cable 30 m		Cable 45 m		L. mm	W. Kg
	kW	HP	kW	(A) / I_n	A start I_s start	A start I_s start	m³/h	0	0,3	0,6	1,2	1,5	1,8	2,7	3,6	4,2	4,8	6,0		CODE		CODE		CODE		CODE		
							l/min	0	6	10	20	25	30	45	60	70	80	100										
PG.1000.Evo	0,37	0,5	0,69	3,3	7,5	9,8		71	68	63	41	24								1960705112E		1960705112L		1960705112L1		1960705112L2	955	16
PG.2000.Evo	0,55	0,75	0,97	4,4	10	13,5	H	74,4		73	65	60	53	26						1960705212E		1960705212L		1960705212L1		1960705212L2	1010	17,4
PG.3000.Evo	0,75	1	1,24	5,8	13	17		70			66	64	61	52	37	25				1960705313E		1960705313L		1960705313L1		1960705313L2	1230	19,4
PG.5000.Evo	1,1	1,5	1,7	8,8	19	25		79,7					72	67	60	54	48	31		1960705513E		1960705513L		1960705513L1		1960705513L2	1260	20,7

Evo device included in the price

APPLICATIONS

Submersible pump designed to be used in 4" boreholes (or larger) and tanks, for lifting, distribution, pressurization of water in water systems.

ZDS pump innovation

P/X.H3H

SINGLE-PHASE SUBMERSIBLE PUMP FOR INSTALLATION IN OPEN CIRCUIT SYSTEMS FOR HEAT PUMPS

4" complete submersible pump, made of ZDS hydraulic part, Franklin single-phase encapsulated PSC water-cooled motor, supply cable in different lenghts and ZDS CBH electrical start panel (which includes start and run capacitor).

HYDRAULIC PART

- QS4P technopolymer or QS4X stainless steel ZDS hydraulic part, with floating ring technology and reinforced impeller.
- Great reliability with the integrated non-return valve.
- Special design and selected materials to ensure optimal resistance against sand and other abrasives.
- Improved impellers design, which requires less starting torque to the motor.

MOTOR

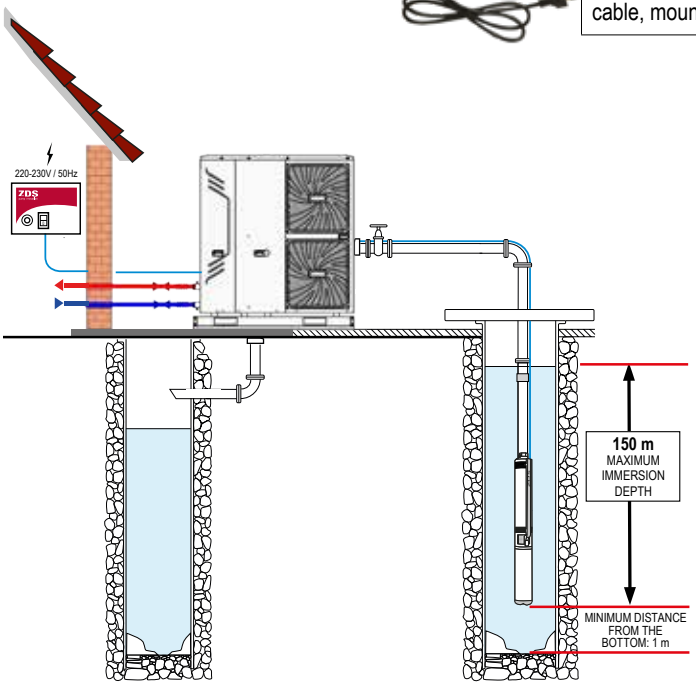
- 2 pole asynchronous single-phase PSC encapsulated water-cooled Franklin motor.
- Axial and radial water-lubricated bearings.
- Hermetically resin sealed stator.
- Pre-filled with non-contaminating antifreeze lubricant liquid.
- Removable lead connector.
- Supply cable according to drinking water regulations (ACS), available in different lenghts.

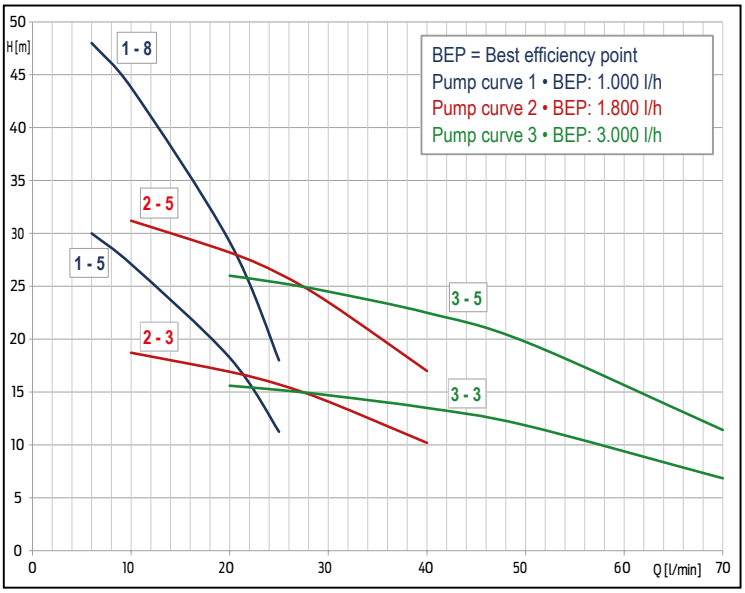
TECHNICAL SPECIFICATIONS

Power range:	0,25 kW
Voltage range:	1x220 - 230V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Degree of protection:	IP 68
Insulation:	Cl. B
Rated ambient temperature:	max 30° C
Required cooling flow:	min 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	20, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Allowed range of water PH:	6,4 - 8,0
Outlet diameter:	1" 1/4 G-F
Maximum delivery (Q):	4.200 l/h
Maximum head (H):	50 m

CBH - Electric start panel

Motor start and operation system with capacitor, equipped with thermal amperometric protection against current overload, ON/OFF illuminated switch, terminal box, cable glands, power supply cable, mounting accessories.





220-230 V	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min⁻¹)									Cable 1,5 m		Cable 15 m		Cable 30 m	
		kW	HP		IN	m³/h	0	0,36	0,6	1,2	1,5	1,8	2,4	3	4,2		CODE		CODE		CODE
					(A)	l/min	0	6	10	20	25	30	40	50	70						
Upper head and lower support in STAINLESS STEEL	X.1-5.H3H	0,25	0,33	366	2	Total head in meters = H= dynamic total pressure	31,4	30	27,8	18,3	11,3						196100105		196100105L		196100105L1
	X.1-8.H3H	0,25	0,33	480	2,3		50,2	48	44,4	29,2	18						196100108		196100108L		196100108L1
	X.2-3.H3H	0,25	0,33	366	2		19,2		18,7	16,9	15,7	14,1	10,2				196100203		196100203L		196100203L1
	X.2-5.H3H	0,25	0,33	480	2,3		32		31,2	28,2	26,2	23,5	17				196100205		196100205L		196100205L1
	X.3-3.H3H	0,25	0,33	400	2,1		16,7			15,6	15,2	14,7	13,5	11,9	6,9		196100303		196100303L		196100303L1
Upper head and lower support in TECHNOPOLYMER	P.1-5.H3H	0,25	0,33	366	2		31,4	30	27,8	18,3	11,3						196101105		196101105L		196101105L1
	P.1-8.H3H	0,25	0,33	480	2,3		50,2	48	44,4	29,2	18						196101108		196101108L		196101108L1
	P.2-3.H3H	0,25	0,33	366	2		19,2		18,7	16,9	15,7	14,1	10,2				196101203		196101203L		196101203L1
	P.2-5.H3H	0,25	0,33	480	2,3		32		31,2	28,2	26,2	23,5	17				196101205		196101205L		196101205L1
	P.3-3.H3H	0,25	0,33	400	2,1		16,7			15,6	15,2	14,7	13,5	11,9	6,9		196101303		196101303L		196101303L1

*Power consumption **Current consumption

P/X.HTH

THREE-PHASE SUBMERSIBLE PUMP FOR INSTALLATION IN OPEN CIRCUIT SYSTEMS FOR HEAT PUMPS

ZDS pump innovation

4" complete submersible pump, made of ZDS hydraulic part, Franklin three-phase encapsulated water-cooled motor and supply cable in different lenghts. It requires a start, operation and protection system.

HYDRAULIC PART

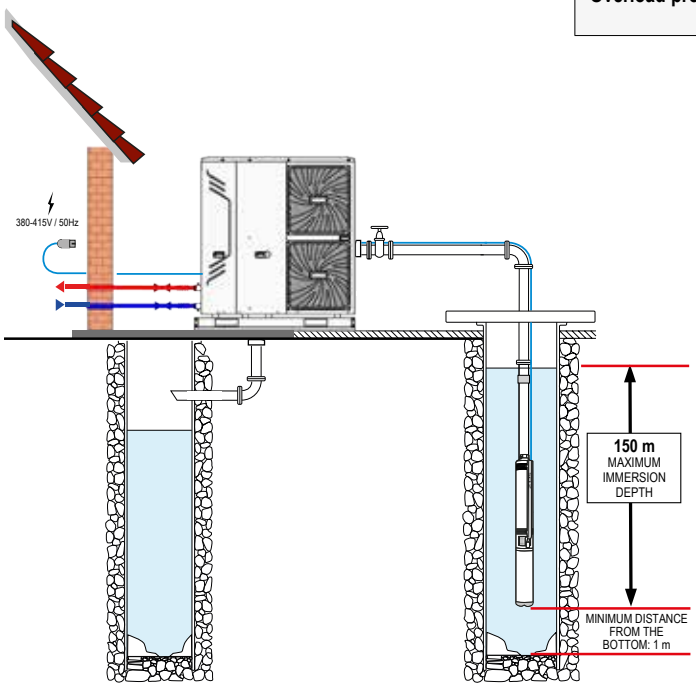
- QS4P technopolymer or QS4X stainless steel ZDS hydraulic part, with floating ring technology and reinforced impeller.
- Great reliability with the integrated non-return valve.
- Special design and selected materials to ensure optimal resistance against sand and other abrasives.
- Improved impellers design, which requires less starting torque to the motor.

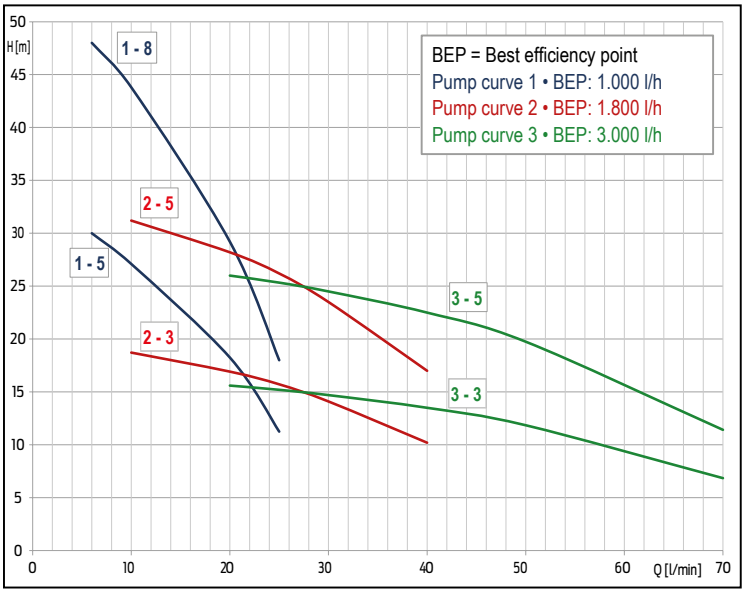
MOTOR

- 2 pole asynchronous three-phase encapsulated water-cooled Franklin motor.
- Axial and radial water-lubricated bearings.
- Hermetically resin sealed stator.
- Pre-filled with non-contaminating antifreeze lubricant liquid.
- Removable lead connector.
- Supply cable according to drinking water regulations (ACS), available in different lenghts.

TECHNICAL SPECIFICATIONS

Power range:	0,25 kW
Voltage range:	3x380 - 415V / 50 Hz
Voltage tolerance 50Hz from nominal:	+6% / -10% U_N
Degree of protection:	IP 68
Insulation:	Cl. B
Rated ambient temperature:	max 30° C
Required cooling flow:	min 8 cm/sec
Maximum quantity of suspended sand:	120 g/m³
Maximum starts/h:	20, equally distributed
Mounting:	vertical/horizontal
Maximum immersion depth:	150 m
Allowed range of water PH:	6,4 - 8,0
Outlet diameter:	1" 1/4 G-F
Maximum delivery (Q):	4.200 l/h
Maximum head (H):	50 m
Overload protection requirements according to:	EN 60947-4-1 trip time < 10 sec. at 5xI_N





380-415 V	Model	Power		P.C.*	C.C.**	Hydraulic performance (n~2.850 min⁻¹)									Cable 1,5 m		Cable 15 m		Cable 30 m	
		kW	HP		I_N	m³/h	0	0,36	0,6	1,2	1,5	1,8	2,4	3	4,2		CODE		CODE		CODE
					(A)	l/min	0	6	10	20	25	30	40	50	70						
Upper head and lower support in STAINLESS STEEL	X.1-5.HTH	0,25	0,33	240	0,55	Total head in meters = H= dynamic total pressure	31,4	30	27,8	18,3	11,3						184100105		184100105L		184100105L1
	X.1-8.HTH	0,25	0,33	360	0,70		50,2	48	44,4	29,2	18						184100108		184100108L		184100108L1
	X.2-3.HTH	0,25	0,33	240	0,55		19,2		18,7	16,9	15,7	14,1	10,2				184100203		184100203L		184100203L1
	X.2-5.HTH	0,25	0,33	360	0,70		32		31,2	28,2	26,2	23,5	17				184100205		184100205L		184100205L1
	X.3-3.HTH	0,25	0,33	270	0,59		16,7			15,6	15,2	14,7	13,5	11,9	6,9		184100303		184100303L		184100303L1
	X.3-5.HTH	0,25	0,33	425	0,77		27,8			26	25,3	24,5	22,5	19,8	11,4		184100305		184100305L		184100305L1
Upper head and lower support in TECHNOPOLYMER	P.1-5.HTH	0,25	0,33	240	0,55		31,4	30	27,8	18,3	11,3						184101105		184101105L		184101105L1
	P.1-8.HTH	0,25	0,33	360	0,70		50,2	48	44,4	29,2	18						184101108		184101108L		184101108L1
	P.2-3.HTH	0,25	0,33	240	0,55		19,2		18,7	16,9	15,7	14,1	10,2				184101203		184101203L		184101203L1
	P.2-5.HTH	0,25	0,33	360	0,70		32		31,2	28,2	26,2	23,5	17				184101205		184101205L		184101205L1
	P.3-3.HTH	0,25	0,33	270	0,59		16,7			15,6	15,2	14,7	13,5	11,9	6,9		184101303		184101303L		184101303L1
	P.3-5.HTH	0,25	0,33	425	0,77		27,8			26	25,3	24,5	22,5	19,8	11,4		184101305		184101305L		184101305L1

*Power consumption **Current consumption

ACCESSORIES

Power supply cables

CONNECTOR CABLES FOR ZDS SINGLE-PHASE O2 AND H2 MOTORS (QPGo and ZDJet series)

Model		Code	Description
CS.2W-1,5		081510100	1,5 m cable connector (3x1,5 section)
CS.2W-15/1		081510133	15 m cable connector (3x1 section, up to 1,1 kW)
CS.2W-30/1		081510136	30 m cable connector (3x1 section, up to 1,1 kW)
CS.2W-15/1,5		081510131	15 m cable connector (3x1,5 section, 1,5 kW)
CS.2W-30/1,5		081510132	30 m cable connector (3x1,5 section, 1,5 kW)

* upon request for 1-50 model

CONNECTOR CABLES WITH PUMP PROTECTOR DRP FOR ZDS SINGLE-PHASE O2 AND H2 MOTORS (QPGo and ZDJet series)

Model		Code	Description
CS.2W-2.DRP		081510100X	1,5 m DRP cable connector (3x1,5 section)
CS.2W-15.DRP/1		081510133X	15 m DRP cable connector (3x1 section, up to 1,1 kW)
CS.2W-30.DRP/1		081510136X	30 m DRP cable connector (3x1 section, up to 1,1 kW)
CS.2W-15.DRP/1,5		081510131X	15 m DRP cable connector (3x1,5 section, 1,5 kW)
CS.2W-30.DRP/1,5		081510132X	30 m DRP cable connector (3x1,5 section, 1,5 kW)

* upon request for 1-50 model

CONNECTOR CABLES FOR ZDS SINGLE-PHASE O3 MOTORS AND THREE-PHASE OT MOTORS

Model		Code	Description
CS.3W-1,5		081510102	1,5 m cable connector (4x1,5 section, up to 1,1 kW)
CS.3W-2,5		081510030	2,5 m cable connector (4x1,5 section, above 1,1 kW)
CS.3W-15/1,5		081510035	15 m cable connector (4x1,5 section)
CS.3W-30/1,5		081510036	30 m cable connector (4x1,5 section)

CONNECTOR CABLES WITH PUMP PROTECTOR DRP FOR ZDS SINGLE-PHASE PSC O3 MOTORS

Model		Code	Description
CS.3W-1,5.DRP (1,1kW)		081510102X	1,5 m DRP cable connector (4x1,5 section, up to 1,1 kW)
CS.3W-2,5.DRP (1,5 kW)		081510104X	2,5 m DRP cable connector (4x1,5 section, 1,5 kW)
CS.3W-2,5.DRP (2,2 kW)		081510103X	2,5 m DRP cable connector (4x1,5 section, 2,2 kW)

CONNECTOR CABLES WITH PUMP PROTECTOR DRP FOR ZDS THREE-PHASE OT MOTORS

Model		Ccode	Description
CS.3W.T037.DRP		081510165	2 m DRP cable connector (4x1,5 section, 0,37 kW)
CS.3W.T055.DRP		081510167	2 m DRP cable connector (4x1,5 section, 0,55 kW)
CS.3W.T075.DRP		081510169	2 m DRP cable connector (4x1,5 section, 0,75 kW)
CS.3W.T110.DRP		081510171	2 m DRP cable connector (4x1,5 section, 1,1 kW)
CS.3W.T150.DRP		081510173	3 m DRP cable connector (4x1,5 section, 1,5 kW)
CS.3W.T220.DRP		081510175	3 m DRP cable connector (4x1,5 section, 2,2 kW)
CS.3W.T300.DRP		081510177	3 m DRP cable connector (4x1,5 section, 3 kW)
CS.3W.T400.DRP		081510179	3 m DRP cable connector (4x1,5 section, 4 kW)

CONNECTOR CABLES FOR PLUG&GO.EVO SUBMERSIBLE PUMP SERIES

Model		Code	Description
L3x1,5-1,5		081510330	1,5 m cable connector (3x1,5 section)
L3x1,5-15		081510332	15 m cable connector
L3x1,5-30		081510334	30 m cable connector
L3x1,5-45		081510310	45 m cable connector

Power supply cables

CONNECTOR CABLES FOR 4" FRANKLIN MOTORS

Model		Code	Description
CS.3WF-1,5		081510020	1,5 m cable connector (4x1,5 section, up to 1,1 kW)
CS.3WF-2,5		081510021	2.5 m cable connector (4x1,5 section, above 1,1 kW)
CS.3WF-15		081510024	15 m cable connector (4x1,5 section)
CS.3WF-30		081510026	30 m cable connector (4x1,5 section)

CONNECTOR CABLES WITH PUMP PROTECTOR DRP FOR 4" FRANKLIN SINGLE-PHASE PSC H3F MOTORS

Model		Code	Description
CS.3WF-1,5.DRP (1,1 kW)		081510102XF	1,5 m DRP cable connector (4x1,5 section, up to 1,1 kW)
CS.3WF-2,5.DRP (1,5 kW)		081510103XF	2,5 m DRP cable connector (4x1,5 section, 1,5 kW)
CS.3WF-2,5.DRP (2,2 kW)		0815101042XF	2,5 m DRP cable connector (4x1,5 section, 2,2 kW)

CONNECTOR CABLES WITH PUMP PROTECTOR DRP FOR 4" FRANKLIN THREE-PHASE HTF MOTORS

Model		Code	Description
CS.3WF.T037.DRP		081510181	2 m DRP cable connector (4x1,5 section, 0,37 kW)
CS.3WF.T055.DRP		081510183	2 m DRP cable connector (4x1,5 section, 0,55 kW)
CS.3WF.T075.DRP		081510185	2 m DRP cable connector (4x1,5 section, 0,75 kW)
CS.3WF.T110.DRP		081510187	2 m DRP cable connector (4x1,5 section, 1,1 kW)
CS.3WF.T150.DRP		081510189	3 m DRP cable connector (4x1,5 section, 1,5 kW)
CS.3WF.T220.DRP		081510191	3 m DRP cable connector (4x1,5 section, 2,2 kW)
CS.3WF.T300.DRP		081510193	3 m DRP cable connector (4x1,5 section, 3 kW)
CS.3WF.T400.DRP		081510195	3 m DRP cable connector (4x1,5 section, 4 kW)

Cables per meter

PRICE PER METER OF CUSTOMIZED LENGHT CABLES

Model		Code	Description	W (kg/m)
H07RNF – 3x1 mm²		081510001	Section 3x1 mm²	0,11
H07RNF – 3x1,5 mm²		081510002	Section 3x1,5 mm²	0,13
H07RNF – 3x2,5 mm²		081510003	Section 3x2,5 mm²	0,20
H07RNF – 3x4 mm²		081510004	Section 3x4 mm²	0,28

Model		Code	Description	W (kg/m)
H07RNF – 4x1 mm²		081510010	Section 4x1 mm²	0,13
H07RNF – 4x1,5 mm²		081510011	Section 4x1,5 mm²	0,17
H07RNF – 4x2,5 mm²		081510012	Section 4x2,5 mm²	0,24
H07RNF – 4x4 mm²		081510013	Section 4x4 mm²	0,34

Model		Code	Description	W (kg/m)
H07 – 3x1 mm² WRAS		081510001D	Section 3x1 mm²	0,11
H07 – 3x1,5 mm² WRAS		081510002D	Section 3x1,5 mm²	0,13

Model		Code	Description	W (kg/m)
H07 – 4x1 mm² WRAS		081510010D	Section 4x1 mm²	0,13
H07 – 4x1,5 mm² WRAS		081510011D	Section 4x1,5 mm²	0,17

*3x4 and 4x4 size minimum lenght required: 100 m
Manpower for customized lenght cable with junction
Package and transport costs for customized lenght cable listed separately.
Assembly of hydraulic part, motor and cable, test

ZDS pump innovation

Heat-Shrink kit

Model		Code	Description
KIT GTR1		081505010	Heat-Shrink connection kit for 1-4 mm² motor cable
KIT GTR2		081505015	Heat-Shrink connection kit for 6-10 mm² motor cable

Guide for the selection of the correct size and lenght of the cable:

2-WIRE & PSC SINGLE-PHASE - 1X220-240 V~, 50 HZ

kW	HP	A	3/4 x 1 mm²	3/4 x 1,5 mm²	3/4 x 2,5 mm²	3/4 x 4 mm²	3/4 x 6 mm²	3/4 x 10 mm²
0,25	0,33	2,8	93 m	140 m	232 m	370 m	553 m	-
0,37	0,5	3,3	79 m	119 m	197 m	314 m	470 m	776 m
0,55	0,75	4,4	60 m	89 m	148 m	236 m	352 m	582 m
0,75	1	5,8	45 m	68 m	112 m	179 m	267 m	442 m
1,1	1,5	7,7	32 m	48 m	80 m	128 m	191 m	316 m
1,5	2	10,5	-	37 m	62 m	99 m	148 m	244 m
2,2	3	14,8	-	25 m	42 m	67 m	100 m	166 m

THREE-PHASE - 3X380-415 V~, 50 HZ

kW	HP	A	4 x 1 mm²	4 x 1,5 mm²	4 x 2,5 mm²	4 x 4 mm²	4 x 6 mm²	4 x 10 mm²
0,37	0,5	1,7	381 m	571 m	-	-	-	-
0,55	0,75	1,8	360 m	540 m	897 m	-	-	-
0,75	1	2,6	249 m	374 m	621 m	-	-	-
1,1	1,5	3,6	180 m	270 m	448 m	715 m	-	-
1,5	2	4,6	141 m	211 m	351 m	560 m	835 m	-
2,2	3	5,4	106 m	159 m	265 m	422 m	630 m	-
3	4	7,2	79 m	118 m	197 m	314 m	469 m	774 m
4	5,5	9,8	-	96 m	160 m	255 m	380 m	628 m
5,5	7,5	12,6	-	68 m	114 m	181 m	271 m	447 m
7,5	10	17,6	-	-	88 m	141 m	210 m	348 m

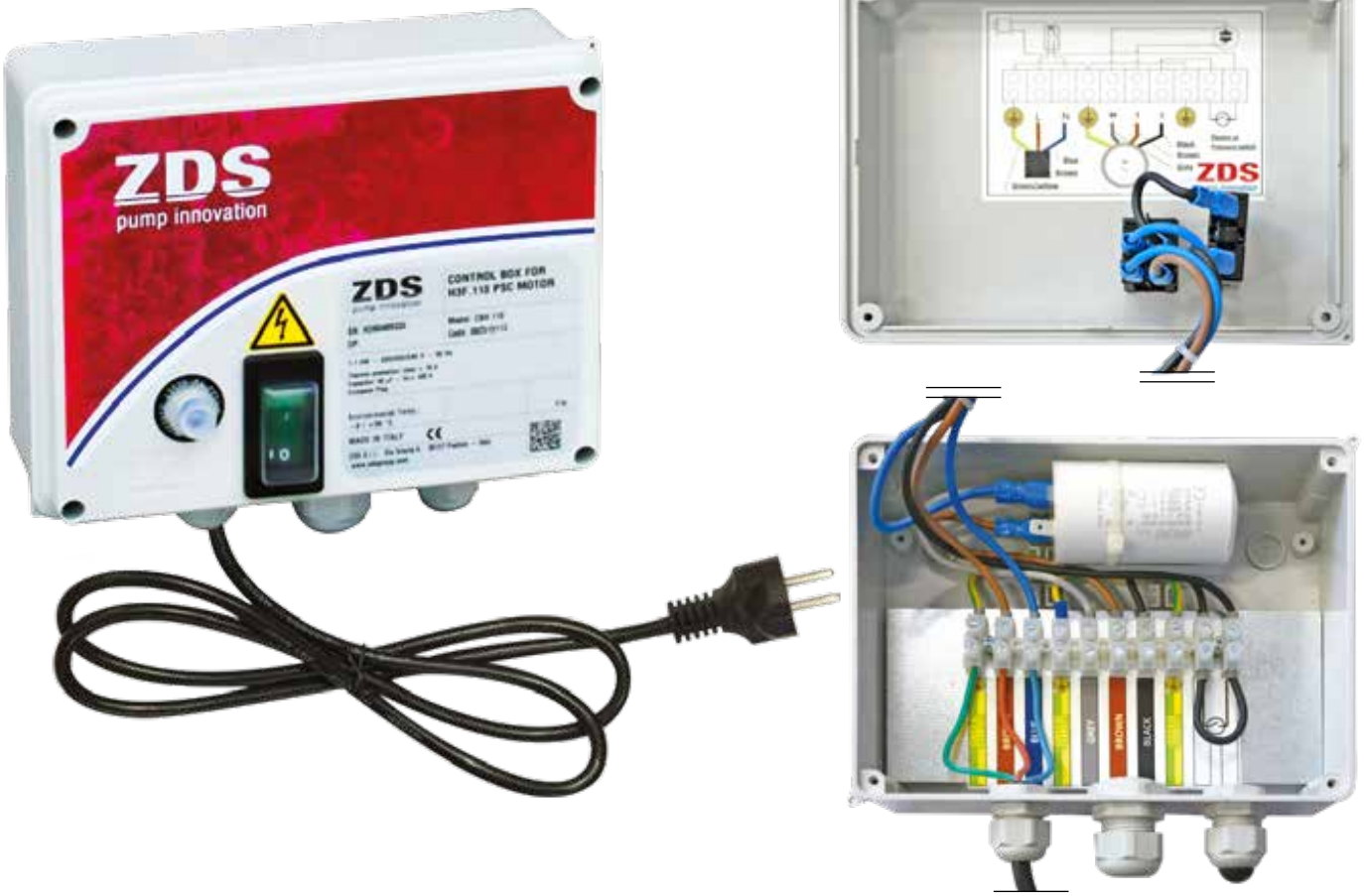
THREE-PHASE - 3X220-230 V~, 50 HZ

kW	HP	A	4 x 1 mm²	4 x 1,5 mm²	4 x 2,5 mm²	4 x 4 mm²	4 x 6 mm²	4 x 10 mm²
0,37	0,5	2,9	129 m	193 m	320 m	510 m	762 m	-
0,55	0,75	3,1	120 m	180 m	300 m	477 m	713 m	-
0,75	1	4,5	83 m	124 m	206 m	329 m	491 m	811 m
1,1	1,5	6,2	60 m	90 m	150 m	239 m	356 m	588 m
1,5	2	8,0	47 m	70 m	116 m	185 m	276 m	456 m
2,2	3	9,3	-	55 m	91 m	145 m	217 m	358 m
3	4	12,5	-	41 m	69 m	110 m	164 m	270 m
4	5,5	17,0	-	-	54 m	86 m	129 m	212 m
5,5	7,5	21,8	-	-	38 m	60 m	90 m	149 m

• Voltage drop: ΔU = 4% • CosΦ = 0,99 for single-phase motor - CosΦ = 0,80 for three phase motor • Cable specific resistance: r = 0,0178 Ω mm2/m • Inductive resistance: Xl = 0,078 3 10-3 [Ω/m]
• Environmental temperature: 30°C - In case of specific installation or for a precise cable selection the following calculation is recommended:
• U = Nominal Voltage [V] • ΔU = Voltage drop [%] • I = Current [A]
• a = Coefficient 2,0 for single phase motor - Coefficient 1,73 for three phase motor
• CosΦ = Power parameter • r = Specific resistance [Ωmm2/m]
• q = Cable conductor section [mm2] • Xl = Inductive resistance [Ω/m]

$$L = \frac{U \times \Delta U}{I \times a \times 100 \times (\cos\phi \frac{\rho}{q} + \sqrt{1-\cos^2\phi} \times X_L)} \text{ [m]}$$

CBO/CBH Single-phase submersible motor start and operation electric panel



Electric panel made of:

Casing material in thermoplastic, ON/OFF illuminated switch with anti-humidity protection, thermal switch for motor protection, start and run capacitor, terminal box, cable glands, power supply cable, mounting accessories.

Technical Specifications
Over-sized thermoplastic casing
Power inlet 1x230 V ±10% 50Hz
Start and run capacitor included
Degree of protection: IP 55
1,5 m cable with European plug
Standard: IEC 60439-1:2010
Inlet for connection to pressure switches or floats
Over-sized terminal box
Manually resettable amperometric protection cut-off
Cable glands of 3 different sizes
Rated ambient temp.: from -10°C to +40° C
Size (cm): 23,8 x 19 x 9

CBO FOR PSC SINGLE-PHASE OIL-COOLED MOTORS

Model		Code	Power	Amperometric protection	Capacitor	Weight
			kW	I_{max} [N]	[µF]	[kg]
CBO.037		082515041	0,37	4	20	0,7
CBO.055		082515059	0,55	5	25	0,8
CBO.075		082515079	0,75	7	35	0,8
CBO.110		082515114	1,1	10	40	0,8
CBO.150		082515154	1,5	12	60	0,9
CBO.220		082515224	2,2	18	80	1

CBH FOR PSC ENCAPSULATED SINGLE-PHASE WATER-COOLED MOTORS

Model		Code	Power	Amperometric protection	Capacitor	Weight
			kW	I_{max} [N]	[µF]	[kg]
CBH.025		082515028	0,25	4	12.5	0,8
CBH.037		082515040	0,37	4	16	0,8
CBH.055		082515058	0,55	5	20	0,8
CBH.075		082515078	0,75	7	35	0,8
CBH.110		082515113	1,1	10	40	0,8
CBH.150		082515153	1,5	12	50	1
CBH.220		082515223	2,2	18	70	1,1

DOMINO-UP - Electronic panel for direct start-up of one single-phase or one three-phase motor with cosΦ control and minimum current

Technical Specifications
Over-sized thermoplastic casing
Power inlet 1x230 V ±10% 50Hz
Power inlet 3x380 V ±10% 50Hz
Degree of protection: IP 55
Standard: IEC 60439-1:2010
Rated ambient temp.: from -10°C to +40° C
2 inputs multi-contact float/pressure switch (NO) (in low voltage)
Over-sized terminal box
Cable glands of 6 different sizes
Main switch with door interlock
AUTO-0-MAN buttons (manual temporary)
LED interface for automatic and manual operation
Motor output: relay (single-phase)/contactor (three-phase)
Contact output for alarm
Start and run capacitor predisposition for single-phase (not included)
Self-learning of motor data
Multifunction display with command keys and display of electrical parameters/ voltage/motor current/cosΦ/alarms

PROTECTIONS
Protection fuses
Keyboard adjustable motor overload protection
Dry running protection from minimum current or cosΦ
Min/max voltage protection
Motor protection for incorrect phase sequence
Automatic restore from dry running
Push-buttons to restore protections

Model		Code	V	Power		Current	Size (mm)			Weight	Casing
			50/60 Hz	kW	Hp	Nx [range] A	Height	Lenght	Width	[kg]	Type
DOMINO-UP-M/3		082515401	1~230V	0,37÷2,2	0,5÷3	1x [2÷16]	340	240	170	1,5	ABS
DOMINO-UP-T/10		082515402	3~400V	0,55÷7,5	0,75÷10	1x [2÷15]	340	240	170	2,5	ABS

Capacitors

Model		Code	Capacity µF	Tension (V)
12,5 µF capacitor		000010012	12,5	450
16 µF capacitor		000010016	16	450
20 µF capacitor		000010020	20	450
25 µF capacitor		000010025	25	450
35 µF capacitor		000010035	35	450
40 µF capacitor		000010040	40	450
50 µF capacitor		000010050	50	450
60 µF capacitor		000010060	60	450
70 µF capacitor		000010070	70	450
80 µF capacitor		000010080	80	450

Re-Start&Go

Re-Start&Go

Electronic device for direct start, stop and protection of the pump against dry running. It keeps a constant working flow, thanks to the inner sensor and start up adjustable pressure switch. The water movement or the pressure decreasing (down the 1,5 bar factory adjustable value) starts the motor. In case of dry running, the Re-Start&Go tries up to 9th automatic restarts attempts in programmed schedules time. The last attempt is set every two hours without a maximum limit.

TECHNICAL SPECIFICATIONS
Outlet diameter Ø = 1”
Manual start switch (RESET)
Information led: POWER, ON (running), FAILURE
Degree of protection: IP 65
Maximum working temperature: 60°C
Factory set starting pressure value 1,5 bar (adjustable 1,5-3 bar)
Max working pressure: 8 bar
Manometer included
Voltage: 220/240V (50/60Hz)
Working: single-phase
Max load: 1,1 kW

Flexible steel pipe

Flexible steel pipe, suitable for use in drinking water and perfect for sumbersible pump installation. Recommended to avoid excessive vibrations or frictions on the pipelines. Inlet/outlet: f-f

Screen Filter

Plastic screen filter with replaceable cartridge for wide range of filtration applications.

TECHNICAL SPECIFICATIONS
Casing material: polypropylene body, EPDM gaskets
Screen Type: Inox 100 mesh
Inlet/outlet: 1” BSP threads, male/male
Max working pressure: 10 bar (145 PSI)
Filtering capacity: 6 m^3/h
Cartridge Ø: 50 x 150 mm
Replacement cartridge

Model		Code	Description
Kit Re-Start		082515301	Kit made of Re-Start&Go, Flexible steel pipe and Screen filter.

Model		Code	Voltage	Working	Maximum load	Maximum working pressure (bar)
PRC Re-Start&Go		082515105	220/240V (50/60Hz)	Single-phase	1,1 kW	8 bar

Model		Code	Casing material	Screen Type	Inlet/ outlet	Maximum working pressure	Filtering capacity	Cartridge Ø
1” Screen Filter		082515106	Polypropylene body, EPDM gaskets	Inox 100 mesh	1” m-m	10 bar (145 PSI)	6 m^3/h	50 x 150 mm
Replacement Cartridge		082515107	Polypropylene cartridge frame	Inox 100 mesh	-	-	6 m^3/h	50 x 150 mm

Model		Code	Description
Flexible steel pipe		081505064	Steel braided flexible pipe, WRAS approved, suitable for the installation of submersible pumps, domestic hot and cold water, etc..

KIOS Kit

The Kios Kit is a cooling sleeve normally used to ensures the proper cooling of the 4" submersible pump. It can be installed in vertical or horizontal position. The KIOS kit can be set on any surfaces and it features comfortable handles for easy carrying. It comes with an oversized filter to avoid blockage by leaves, small stones or other impurities. It is recommended in all those applications where the required cooling flow to the motors is not guaranteed: water flowing through the Kios Kit will guarantee a better operation of the motor, as it allows the dispersion of the heat generated by its normal functioning.

APPLICATIONS

- Boreholes with diameter bigger than 4"
- Tanks, harvesting tanks, collection tanks, reservoir, lakes, irrigation channels.
- If the submersible pump is installed below the incoming borehole's flow of water.
- When a large number of solids and impurities are in the borehole.

COMPONENTS	MATERIALS
Filter	Stainless Steel Aisi 304
Pipe	Polyethylene
Handles	Stainless Steel Aisi 304
Gasket	SBR

KIOSKIT 1

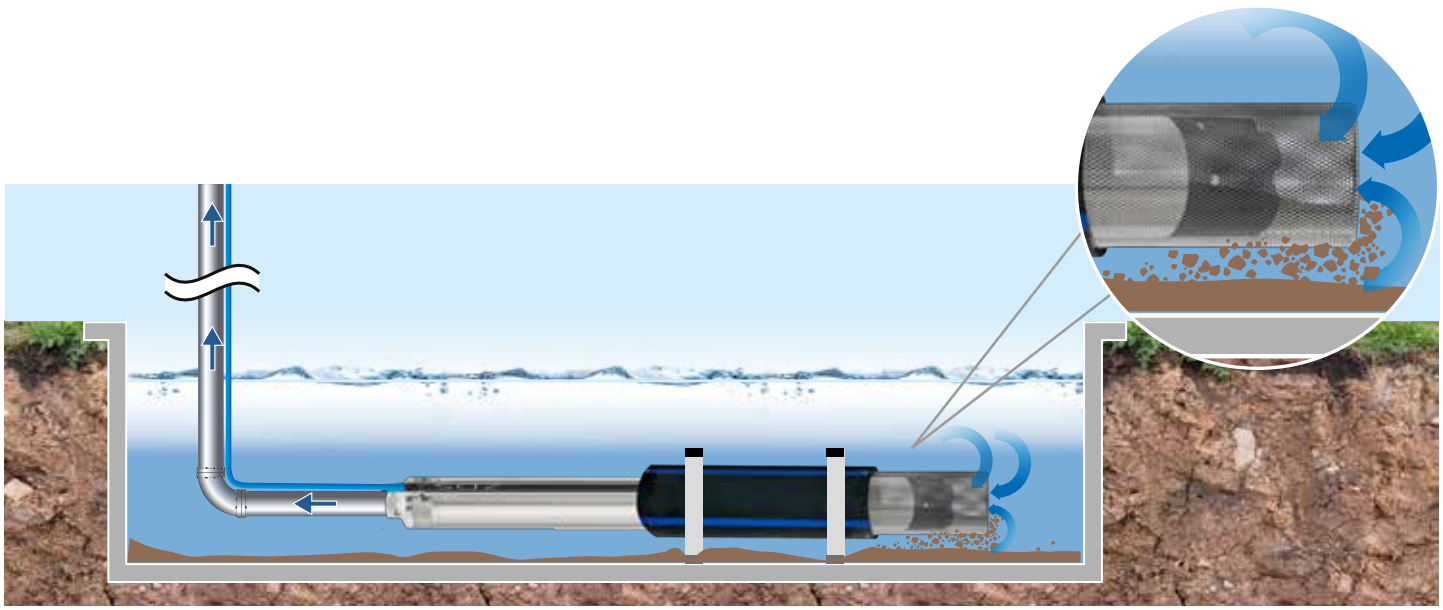
Model		Code	Lenght	Heigth	Width	Weight
KIOSKIT 1		081190010	600 mm	180 mm	140 mm	1,4 kg

Compatible with:	kW
QPGO - Plug&GO.Evo	up to 1,1 kW
ZDJet	up to 0,75 kW
P/X.O3 - O3	up to 1,5 kW
P/X.H3F - H3F	up to 2,2 kW
P/X.OT - OT - P/X.HTF - HTF	up to 3 kW

KIOSKIT 2

Model		Code	Lenght	Heigth	Width	Weight
KIOSKIT 2		081190015	900 mm	180 mm	140 mm	2,3 kg

Compatible with:	kW
QPGO	1,5 kW
ZDJet	1,1 kW and 1,5 kW
P/X.O3 - O3	2,2 kW
OT	4 kW and 5,5 Kw
HTF	4 kW, 5,5 kW and 7,5 kW



Mechanical pressure switch Telemecanique

Mechanical pressure switch to automatically adjust start and stop of the submersible pump.

Technical specifications:
- Ambient air temperature for operation: from -25° C to +70° C
- IP degree of protection: IP 54
- Maximum power: 1,5 kW
- Outlet Ø: ¼ G-F

Model		Code	Telemecanique code	Working	Settings (bar)	Contacts	Entry
PRV0-6		082515099	XMPA06B2131	Single-phase	0 - 6	2 NC snap action 1,5 kW / 11A	2 entries PG 13,5
PRV6-12		082515100	XMPA12B2131	Single-phase	6 - 12	2 NC snap action 1,5 kW / 11A	2 entries PG 13,5

Manometer

Manometer to measure hydraulic pressure. Vertical, horizontal or sidelong installation.

Model		Code	Working range (bar)	Diameter (mm)	Connection	Casing material
MAN0-6		082515117	0-6 (precision 2,5)	63	Radial ¼"	ABS
MAN0-12		082515116	0-12 (precision 2,5)	63	Radial ¼"	ABS

Press tanks GWS

Single diaphragm design - Internal polypropylene capsule - Water inlet connection in stainless steel - Certificate NSF Standard 61, CE/PED, WRAS, ACS, GOST - Does not require any maintenance - Shell: carbon steel internally coated with powder for alimentary purposes - Fixed membrane: butyl, for alimentary purposes

Model	Price	Code	Code GWS	Capacity (lt)	Diameter (mm)	Height (mm)	W. (kg)	Connections (mm)	Max working pressure
PRESS TANK 2		481500002	PWB	2	127	183	1	1" G	10 bar
PRESS TANK 8		481500008	PWB	8	203	314	2,6	1" G	10 bar
PRESS TANK 18		481500018	PWB	18	280	368	4,3	1" G	10 bar
PRESS TANK 60		481500060	PWB	60	388	730	12,3	1" G	10 bar
PRESS TANK 100		481500100	PWB	100	431	804	18,9	1" G	10 bar
PRESS TANK 200		481500200	PWB	200	450	1060	35	1" G	10 bar
PRESS TANK 300		481500300	PWB	300	450	1520	48	1" G	10 bar

Protection anode for 4” oil-cooled ZDS motors

Corrosion protection anode for 4” oil-cooled ZDS motors, manufactured with an alloy suitable for contact with drinking water. It can be easily fit to the lower extremity of ZDS motors to protect them from corrosion in the presence of irregular currents or particularly aggressive waters, greatly increasing the life of the motor components.

Model		Code
Anode for 4” ZDS oil-cooled motors		081505059

Wessoclean - Ecological well regeneration

Product suitable for periodic cleaning of the well, which easily removes from the submersible pump the common incrustations, restoring the correct water quality.

EASY TO USE:
1. Open the well
2. Pour WESSOCLEAN AQUA Typ 1 into the well
3. Wait for 12 hours
4. Pump WESSOCLEAN AQUA Typ 1 out of the well

No heavy equipment is required and the pump can stay inside the well.

Model		Code	Description	Weight
WESSOCLEAN AQUA TYP 1		081505063	Suitable to clean from: iron-oxides, manganeseoxides, lime, biofilms. All clogging in the well, in the filter gravel and the surrounding soil is dissolved within 12 hours. 4 kg dissolved in a 4" borehole treat a water column of 10 m circa (80 l circa).	4 kg

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
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Сургут (3462)77-98-35
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Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
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