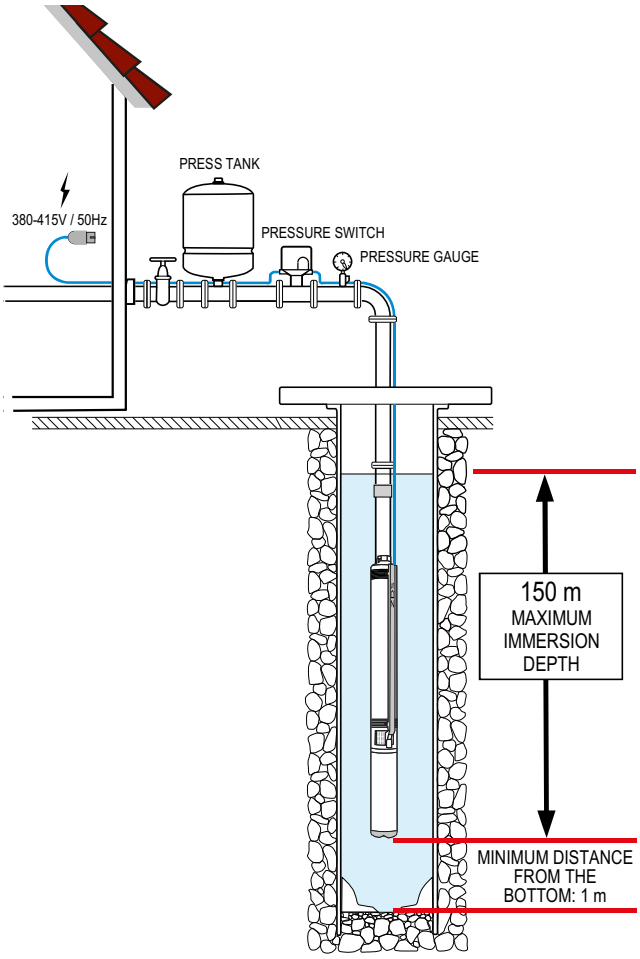
P/X.HTF

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

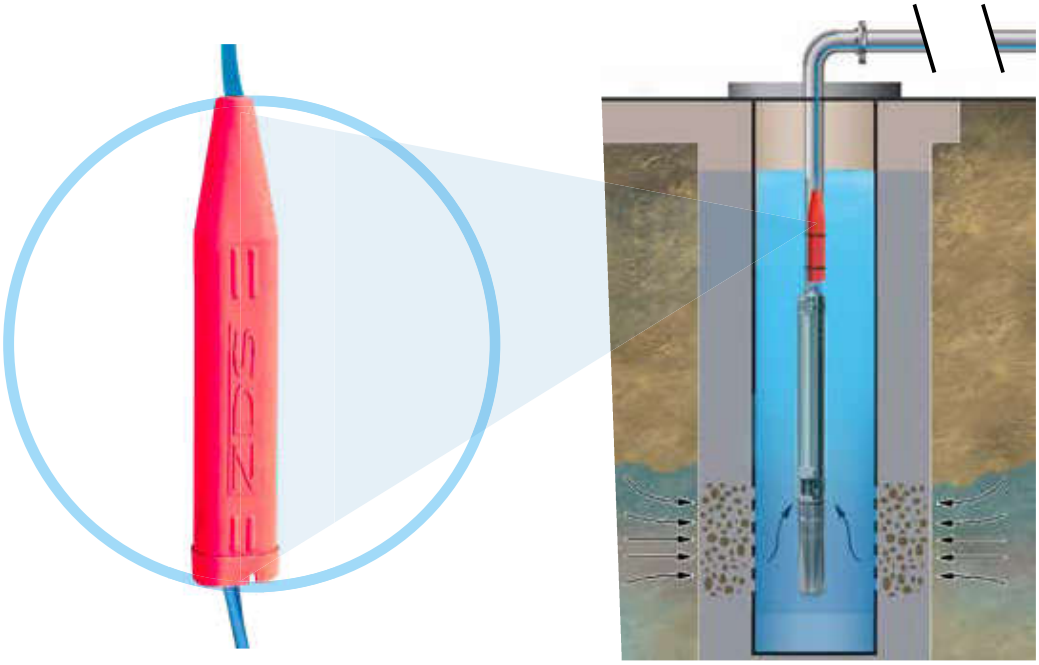
OPTIONAL

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.

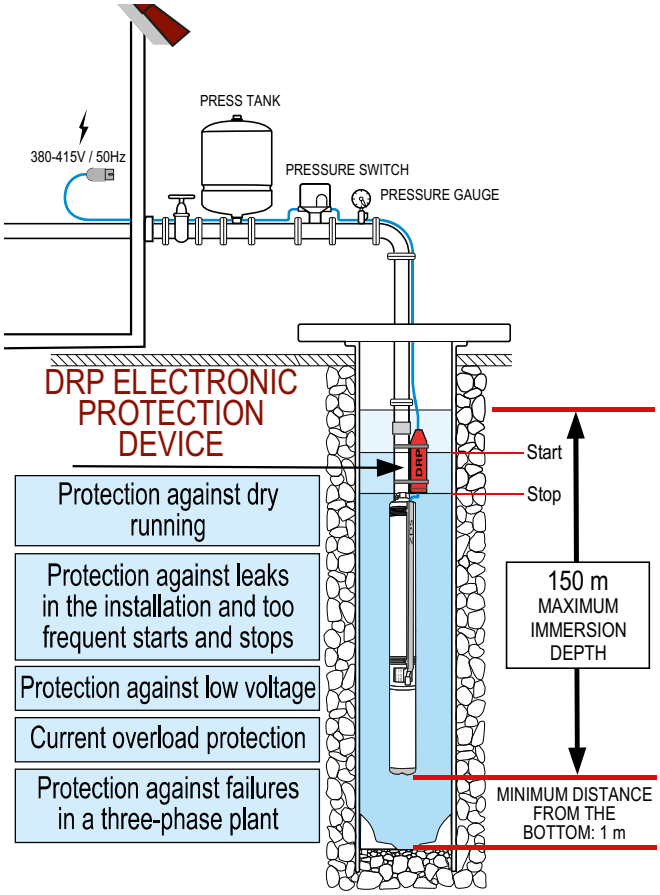
DRP ELECTRONIC PROTECTION DEVICE



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	
					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.1-12.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