

city[®]
pumps



PATROL P

"DOUBLE-CHANNEL" Fixed installation pumps

PERFORMANCE RANGE

- Flow rate up to **1600 l/min** (96 m³/h)
- Head up to **25 m**

APPLICATION LIMITS

- **10 m** maximum immersion depth with a sufficiently long power cable
- Maximum liquid temperature **+40 °C**
- Solids passage:
 - up to **Ø 50 mm** for PATROL 15-20-30-40/50P
 - up to **Ø 70 mm** for PATROL 30-40/70P
- Minimum immersion depth for continuous service:
 - **390 mm** for PATROL 15-20-30-40/50P
 - **440 mm** for PATROL 30-40/70P

CONSTRUCTION AND SAFETY STANDARDS

- Standard features: base pedestal, threaded delivery counter-flange, guide tube supports
- **10 m** long power cable
- Float switch for single-phase versions

EN 60034-1
IEC 60034-1
CEI 2-3



INSTALLATION AND USE

PATROL P pumps, made from heavy gauge cast iron offering exceptional sturdiness and abrasion resistance, come equipped with a **DOUBLE-CHANNEL** stainless steel impeller and are capable of pumping liquids containing short fibred suspended solids. They are ideal for pumping **sewage, waste water, water mixed with mud, groundwater and surface water** in locations such as apartment blocks, public buildings, factories, tower garages, underground car parks and cleaning areas, etc.

OPTIONALS AVAILABLE ON REQUEST

- **CBS** control box for three-phase pumps
- Three-phase dual voltage pumps:
 - 230/400 V or
 - 400/690 V
- Single-phase pumps without float switch
- Other voltages or 60 Hz frequency

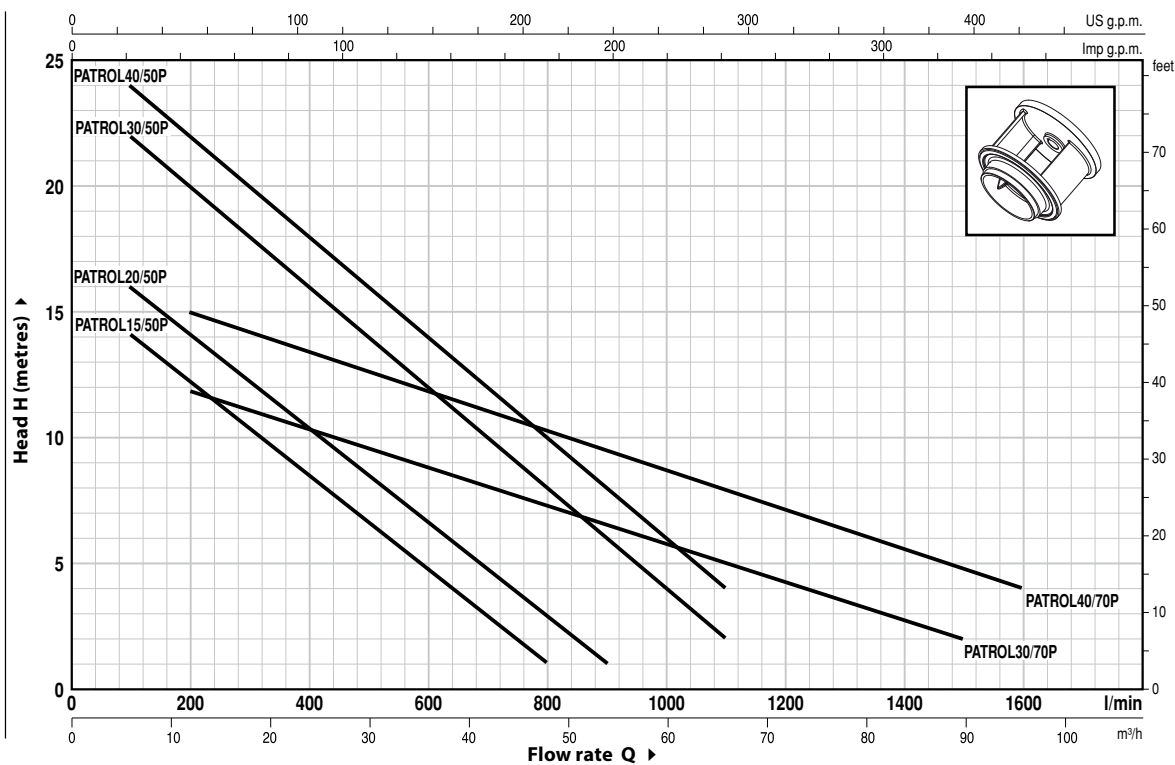
GUARANTEE

2 years subject to terms and conditions

➔ **For the following versions the built-in thermal overload protector must be connected to the control box in order for the guarantee to be considered valid:**

- | | |
|-------------------------|---|
| single-phase | three-phase |
| – PATROL 30/50PM - HP 3 | – PATROL 15-20-30-40/50P - HP 1.5-2-3-4 |
| – PATROL 30/70PM - HP 3 | – PATROL 30-40/70P - HP 3-4 |

CHARACTERISTIC CURVES AND PERFORMANCE DATA | 50 Hz | n= 2900 1/min | HS= 0 m



MODEL		POWER		Q	Flow rate (l/min)															
Single-phase	Three-phase	kW	HP		0	6	12	18	24	30	36	42	48	54	60	66	72	84	96	
PATROL 15/50PM	PATROL 15/50P	1.1	1.5	H metres	16	14	12.5	10.5	8.5	6.5	4.5	3	1							
PATROL 20/50PM	PATROL 20/50P	1.5	2		18	16	14	12.5	10.5	8.5	6.5	5	3	1						
PATROL 30/50PM	PATROL 30/50P	2.2	3		24	22	20	18	16	14	12	10	8	6	4	2				
-	PATROL 40/50P	3	4		25	24	22	20	18	16	14	12	10	8	6	4				
PATROL 30/70PM	PATROL 30/70P	2.2	3		13	-	12	11	10.5	9.5	8.5	8	7.5	6.5	6	5	4.5	3	2	
-	PATROL 40/70P	3	4		17	-	15	14	13.5	12.5	12	11	10.5	9.5	8.5	8	7	5.5	4	

Q = Flow rate H = Total manometric head

Tolerance of characteristic curves in compliance with EN ISO 9906 App. A.

POS. CONSTRUCTION CHARACTERISTICS

1	PUMP BODY	Cast iron, complete with flanged ports	
2	SUCTION PLATE	Cast iron	
3	BASE PEDESTAL	Cast iron	
4	CONTERFLANGE	Steel, complete with threaded ports in compliance with ISO 228/1	
5	GUIDE TUBE SUPPORTS	Cast iron	
6	IMPELLER	Stainless steel AISI 304 DOUBLE-CHANNEL type	
7	MOTOR CASING	Cast iron	
8	MOTOR CASING PLATE	Cast iron	
9	MOTOR SHAFT	Stainless steel AISI 431	
10	TWO MECHANICAL SEALS SEPARATED BY AN OIL CHAMBER		
	Seal	Shaft	Materials
	<i>Model</i>	<i>Diameter</i>	<i>Stationary ring</i> <i>Rotational ring</i> <i>Elastomer</i>
	STA-20	Ø 20 mm	Ceramic Graphite NBR
	STA-19	Ø 19 mm	Silicon carbide Silicon carbide NBR
11	BEARINGS	6304 ZZ - C3 / 6304 ZZ - C3	

POS. CONSTRUCTION CHARACTERISTICS

12 CAPACITOR

<i>Pump</i>	<i>Capacitance</i>
<i>Single-phase</i>	<i>(230 V or 240 V)</i>
PATROL 15/50PM	31.5 µF 450 VL
PATROL 20/50PM	50 µF 450 VL
PATROL 30/50-70PM	60 µF 450 VL

13 ELECTRIC MOTOR

PATROL 15-20PM: single-phase 230 V - 50 Hz with thermal overload protector built-in to the winding.

⇒ **PATROL 30PM:** single-phase 230 V - 50 Hz with motor protector built-in to the winding to be connected to the control box

⇒ **PATROL P:** three-phase 400 V - 50 Hz with motor protector built-in to the winding to be connected to the control box

– Insulation: F class

– Protection: IP X8

14 POWER CABLE

10 m long “H07 RN-F” cable

15 CONTROL BOX foe PATROL 15-20PM

(only for single-phase versions)

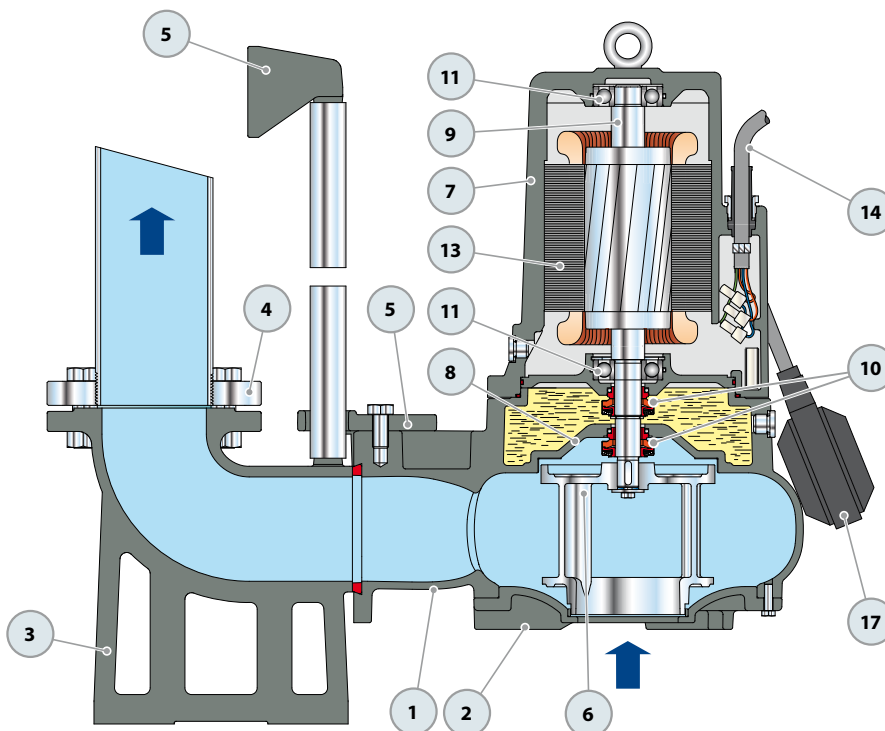
Complete with capacitor and manual reset motor protector

16 CONTROL BOX for PATROL 30PM

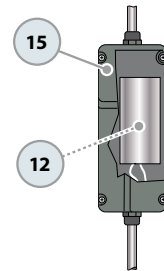
(only for single-phase versions)

QES 300 MONO series

17 FLOAT SWITCH

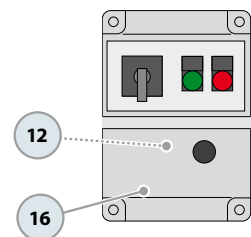


Standard features



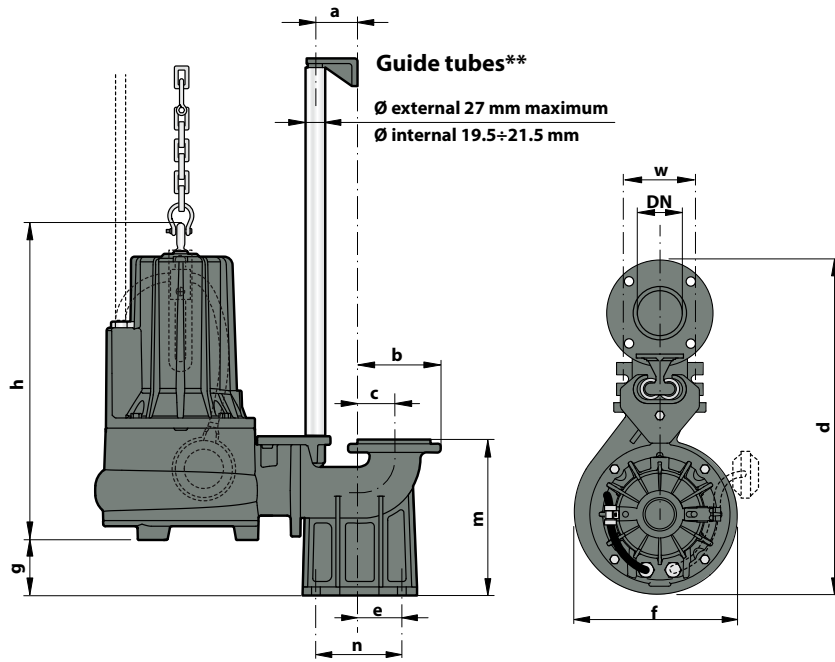
Control box for TITAN 15-20PM (HP 1.5-2.0)
(only for single-phase versions)

Standard features

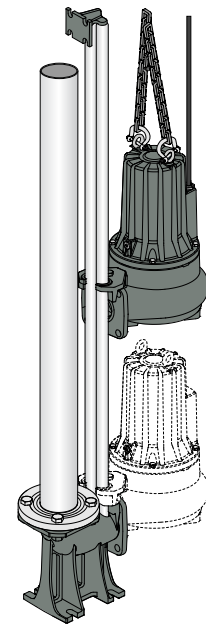


Control box for TITAN 30PM (HP 3.0)
(only for single-phase versions)

DIMENSIONS AND WEIGHT



Typical installation



MODEL		PORT DN	solids passage	DIMENSIONS mm											kg*	
Single-phase	Three-phase			a	b	c	d	e	f	g	h	m	n	w	1~	3~
PATROL 15/50PM	PATROL 15/50P	2½"	Ø 50 mm	60	116	51	490	62	248	52	442	198	120	72	47.2	45.9
PATROL 20/50PM	PATROL 20/50P										457/442				48.2	46.9
PATROL 30/50PM	PATROL 30/50P										457				52.2	49.1
-	PATROL 40/50P														-	52.7
PATROL 30/70PM	PATROL 30/70P	3"	Ø 70 mm	60	150	70	570	85	268	92	472/458	255	130	112	62.6	59.3
-	PATROL 40/70P										472				-	62.9

(*weight includes counterflanges)

(** Guide tubes are for demonstration purposes only. They are not supplied with the TITAN P pumps)

ABSORPTION

MODEL	VOLTAGE (single-phase)	
Single-phase	230 V	240 V
PATROL 15/50PM	9.0 A	9.0 A
PATROL 20/50PM	10.5 A	10.5 A
PATROL 30/50PM	15.2 A	15.2 A
PATROL 30/70PM	15.2 A	15.2 A

MODEL	VOLTAGE (three-phase)					
Three-phase	230 V	400 V	690 V	240 V	415 V	720 V
PATROL 15/50P	6.1 A	3.5 A	2 A	6.1 A	3.5 A	2.0 A
PATROL 20/50P	7.4 A	4.3 A	2.5 A	7.4 A	4.3 A	2.5 A
PATROL 30/50P	9.9 A	5.7 A	3.3 A	9.9 A	5.7 A	3.3 A
PATROL 40/50P	13.5 A	7.8 A	4.5 A	13.5 A	7.8 A	4.5 A
PATROL 30/70P	10.2 A	5.9 A	3.4 A	10.2 A	5.9 A	3.4 A
PATROL 40/70P	13.5 A	7.8 A	4.5 A	13.5 A	7.8 A	4.5 A

PALLETIZATION

MODEL		GROUPAGE / CONTAINER			
Single-phase	Three-phase	n° pumps	H (mm)	kg	
				1~	3~
PATROL 15/50PM	PATROL 15/50P	24	1751	1151	1119
PATROL 20/50PM	PATROL 20/50P	24	1751	1175	1143
PATROL 30/50PM	PATROL 30/50P	24	1751	1275	1196
-	PATROL 40/50P	12	1751	-	1283
PATROL 30/70PM	PATROL 30/70P	12	1304	769	729
-	PATROL 30/70P	12	1304	-	772

