# Pumps with peripheral impeller

Clean water

Domestic use



## PERFORMANCE RANGE

- Flow rate up to **90 l/min** (5.4 $m^3$/h)
- Head up to **100 m**

## APPLICATION LIMITS

- Manometric suction lift up to **8 m**
- Liquid temperature between **-10 °C** and **+90 °C**
- Ambient temperature between **-10 °C** and **+40 °C** (**+50 °C** for PQ 60 and PQ61)
- Max. working pressure:
  - **6 bar** for PQ 60, PQ 61, PQ 65
  - **7 bar** for PQ 70, PQ 80
  - **10 bar** for PQ 90, PQ 100, PQ 200, PQ 300
- Continuous service **S1**

## CONSTRUCTION AND SAFETY STANDARDS

**EN 60335-1**
**IEC 60335-1**
**CEI 61-150**

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

CE

## CERTIFICATIONS

Company with management system certified DNV
ISO 9001: QUALITY

UK CA EAC

## INSTALLATION AND USE

Suitable for use with clean water that does not contain abrasive particles and with liquids that are not chemically aggressive towards the materials from which the pump is made.
The hydraulic characteristics of these pumps, coupled with their compactness, makes them suitable for use in both domestic and industrial applications.
Installation needs to be undertaken in well ventilated closed areas or anyway protected from bad weather.

## PATENTS - TRADE MARKS - MODELS

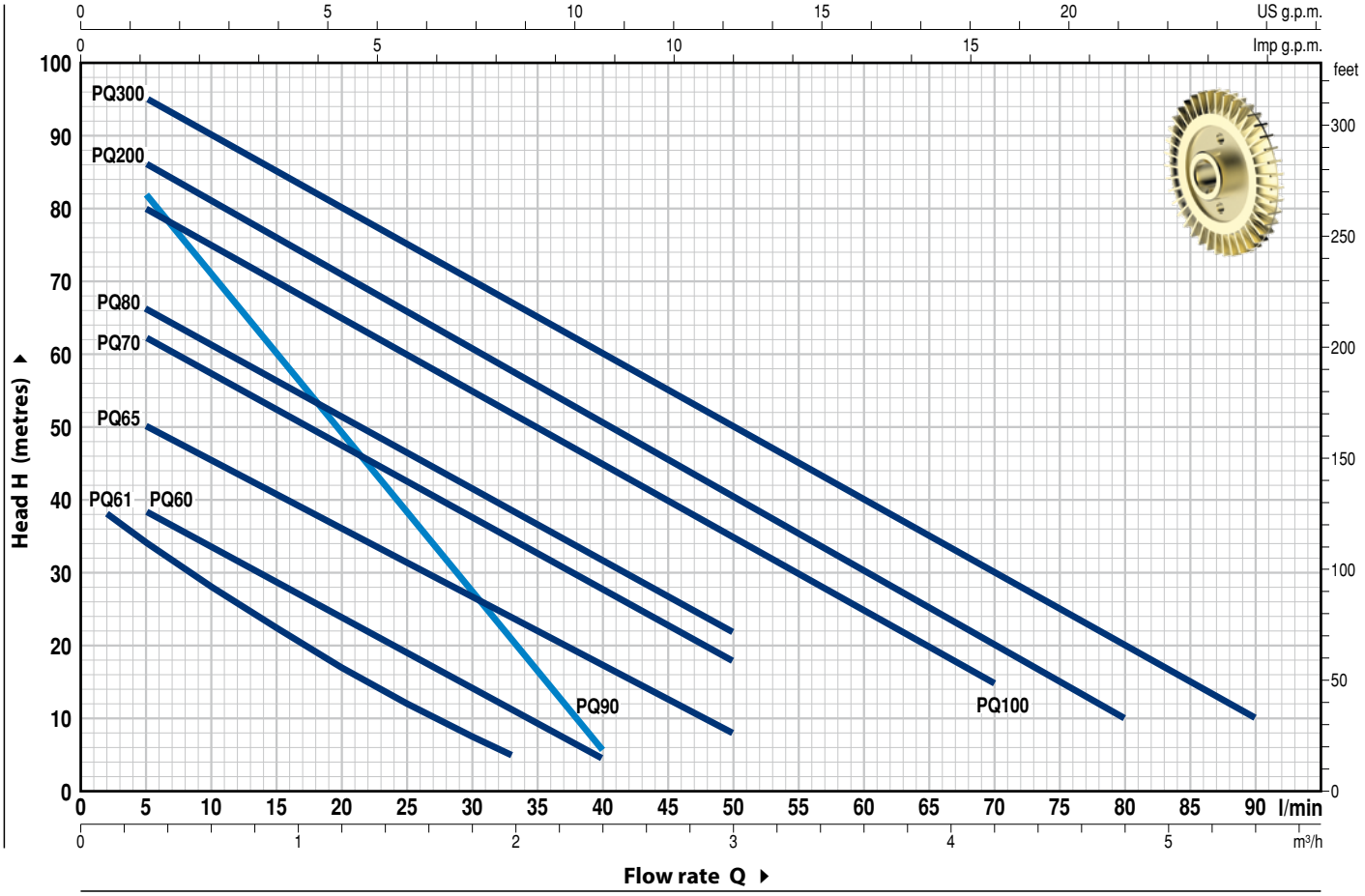
- Motor bracket: patent n. IT1243605
- Shaft: patent n 0000275945 (PQ60, PQ61, PQ65)
- Registered EU Design n. 002146548
- PQm 60® Registered Trade Mark n. 0001520591

## OPTIONS AVAILABLE ON REQUEST

- Special mechanical seal
- Other voltages or 60 Hz frequency
- EN 10088-3 - 1.4401 (AISI 316) stainless steel pump shaft for PQ61
- IP X5 class protection for PQ 70-80-90-100-200-300

## CHARACTERISTIC CURVES AND PERFORMANCE DATA

**50 Hz** **n= 2900 min$^{-1}$** HS= 0 m




| MODEL | | POWER (P2) | | | Q | m³/h | 0 | 0.12 | 0.3 | 0.6 | 0.9 | 1.2 | 1.5 | 1.8 | 1.98 | 2.1 | 2.4 | 3.0 | 3.6 | 4.2 | 4.8 | 5.4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Single-phase** | **Three-phase** | **kW** | **HP** | ▲ | | l/min | **0** | **2** | **5** | **10** | **15** | **20** | **25** | **30** | **33** | **35** | **40** | **50** | **60** | **70** | **80** | **90** |
| **PQm 60** | **PQ 60** | 0.37 | 0.50 | | | | 40 | – | 38 | 33.5 | 29 | 24 | 19.5 | 15 | 11 | 10 | 5 | | | | | |
| **PQm 61** | **PQ 61** | 0.37 | 0.50 | **IE2** | | | 40.5 | 38 | 34 | 28 | 22.3 | 17 | 12.1 | 7.5 | 5 | | | | | | | |
| **PQm 65** | **PQ 65** | 0.55 | 0.75 | | | | 55 | – | 50 | 45.5 | 40.5 | 36 | 31 | 27 | 24 | 22 | 17 | 8 | | | | |
| **PQm 70** | **PQ 70** | 0.60 | 0.85 | | | | 65 | – | 62 | 57 | 52 | 47 | 42 | 37 | 35 | 32 | 27 | 18 | | | | |
| **PQm 80** | **PQ 80** | 0.75 | 1 | | **H** | metres | 70 | – | 66 | 61 | 56 | 51 | 46 | 41 | 38.5 | 36.5 | 31 | 22 | | | | |
| **PQm 90** | **PQ 90** | 0.75 | 1 | | | | 90 | – | 82 | 71 | 60 | 49 | 38 | 27 | 21 | 17 | 5 | | | | | |
| **PQm 100** | **PQ 100** | 1.1 | 1.5 | **IE3** | | | 85 | – | 80 | 75 | 70 | 65 | 60 | 55 | 52 | 50 | 45 | 35 | 25 | 15 | | |
| **PQm 200** | **PQ 200** | 1.5 | 2 | | | | 90 | – | 86 | 81 | 76 | 71 | 65.5 | 60 | 58 | 55 | 50 | 40 | 30 | 20 | 10 | |
| **PQm 300** | **PQ 300** | 2.2 | 3 | | | | 100 | – | 95 | 90 | 85 | 80 | 75 | 70 | 67 | 65 | 60 | 50 | 40 | 30 | 20 | 10 |

**Q** = Flow rate **H** = Total manometric head **HS** = Suction height

Tolerance of characteristic curves in compliance with EN ISO 9906 Grade 3B.

▲ Three-phase motor efficiency class (IEC 60034-30-1)

## POS. COMPONENT — CONSTRUCTION CHARACTERISTICS

**1 PUMP BODY**

Cast iron with threaded ports in compliance with ISO 228/1
Cast iron with threaded ports in compliance with ISO 228/1 for PQ 61

**2 MOTOR BRACKET**

Aluminium with brass insert (patented), reduces the risk of impeller seizure

**3 IMPELLER**

Brass with peripheral radial vanes

**4 MOTOR SHAFT**

Stainless steel AISI 431 (EN 10088-3 - 1.4104 for PQ 60, PQ 61, PQ 65)

**5 MECHANICAL SEAL**

| ***Pump*** | ***Seal*** | ***Shaft*** | | *Materials* | |
|---|---|---|---|---|---|
| ***Model*** | ***Model*** | ***Diameter*** | *Stationary ring* | *Rotational ring* | *Elastomer* |
| **PQ 60-61-65-70-80** | **AR-12** | **Ø 12** mm | Ceramic | Graphite | NBR |
| **PQ 90** | **ST1-12** | **Ø 12** mm | Silicon carbide | Graphite | NBR |
| **PQ 100-200-300** | **FN-14** | **Ø 14** mm | Graphite | Ceramic | NBR |

**6 BEARINGS**

| ***Pump*** | ***Model*** |
|---|---|
| **PQ 60-61-65** | **6201 ZZ / 6201 ZZ** |
| **PQ 70-80-90** | **6203 ZZ / 6203 ZZ** |
| **PQ 100-200-300** | **6204 ZZ / 6204 ZZ** |

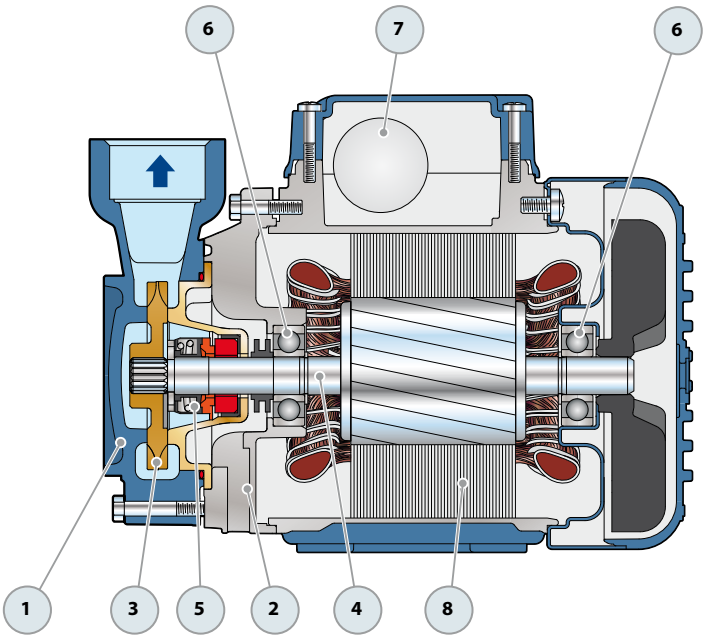
**7 CAPACITOR**

**8 ELECTRIC MOTOR**

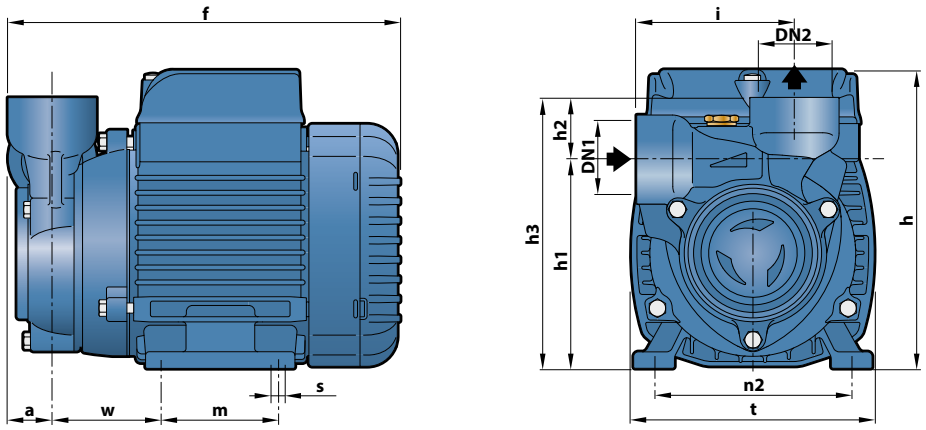
**PQm**: single-phase 230 V - 50 Hz with thermal overload protector incorporated into the winding.
**PQ**: three-phase 230/400 V - 50 Hz.

➠ **The three-phase pumps are fitted with high performance motors up to $P_2$=0.55 kW in class IE2 and from $P_2$=0.60 kW in class IE3 (IEC 60034-30-1)**

– Insulation: class F
– Protection: IP X4



## DIMENSIONS AND WEIGHT




| MODEL | | PORTS | | DIMENSIONS mm | | | | | | | | | | | kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single-phase | Three-phase | DN1 | DN2 | a | f | h | h1 | h2 | h3 | i | m | t | n2 | w | s | 1~ | 3~ |
| PQm 60 | PQ 60 | 1" | 1" | 22 | 192 | 145 | 101 | 30 | 131 | 76 | 55 | 118 | 94-100 | 53 | 7 | 4.8 | 4.8 |
| PQm 61 | PQ 61 | ½" | ½" | 21 | 191 | | | 32.5 | 133.5 | 75.5 | | | | | | 4.9 | 4.9 |
| PQm 65 | PQ 65 | 1" | 1" | 22 | 220 | 152 | 113 | 30 | 143 | 78 | 80 | 120 | 100 | | | 6.9 | 6.2 |
| PQm 70 | PQ 70 | | | | 256 | 181 * | 121 | | 151 | 83 | 90 | 142 | 112 | 62.5 | | 9.7 | 9.8 |
| PQm 80 | PQ 80 | | | | | | | | | | | | | | | 9.7 | 9.7 |
| PQm 90 | PQ 90 | ¾" | ¾" | | | | 126 | 27 | 153 | 84 | | | | | | 9.9 | 8.9 |
| PQm 100 | PQ 100 | 1" | 1" | 29 | 322.5 | 211 | 140 | 28 | 168 | 88 | 100 | 164 | 125 | 95 | 9 | 14.1 | 14.0 |
| PQm 200 | PQ 200 | | | | | | | | | | | | | | | 15.2 | 15.2 |
| PQm 300 | PQ 300 | | | | 342.5 | | | | | | | | | | | — | 17.8 |

**(*) h=199 mm** for single-phase versions at 110 V

## ABSORPTION AND CAPACITORS

| MODEL | VOLTAGE | | | CAPACITANCE | |
|---|---|---|---|---|---|
| Single-phase | 230 V | 240 V | 110 V | (230 V or 240 V) | (110 V) |
| PQm 60 | **2.6** A | **2.4** A | **5.2** A | **10** µF - 450 VL | **25** µF - 250 VL |
| PQm 61 | **2.3** A | **2.2** A | **4.6** A | **10** µF - 450 VL | **25** µF - 250 VL |
| PQm 65 | **3.7** A | **3.5** A | **7.4** A | **14** µF - 450 VL | **25** µF - 250 VL |
| PQm 70 | **5.2** A | **4.8** A | **10.4** A | **16** µF - 450 VL | **60** µF - 300 VL |
| PQm 80 | **5.2** A | **5.0** A | **10.5** A | **20** µF - 450 VL | **60** µF - 300 VL |
| PQm 90 | **5.6** A | **5.1** A | **11.5** A | **20** µF - 450 VL | **60** µF - 300 VL |
| PQm 100 | **9.0** A | **8.6** A | **18.0** A | **31.5** µF - 450 VL | **60** µF - 250 VL |
| PQm 200 | **12.0** A | **11.5** A | **24.0** A | **45** µF - 450 VL | **80** µF - 250 VL |
| PQm 300 | **13.0** A | **12.5** A | – | **50** µF - 450 VL | – |

| MODEL | VOLTAGE | | | | |
|---|---|---|---|---|---|
| Three-phase | 230 V | 400 V | 690 V | 240 V | 415 V |
| PQ 60 | **2.0** A | **1.15** A | **0.7** A | **1.9** A | **1.1** A |
| PQ 61 | **2.0** A | **1.15** A | **0.7** A | **1.9** A | **1.1** A |
| PQ 65 | **3.0** A | **1.7** A | **1.0** A | **2.8** A | **1.6** A |
| PQ 70 | **3.8** A | **2.2** A | **1.3** A | **3.3** A | **1.9** A |
| PQ 80 | **3.8** A | **2.2** A | **1.3** A | **3.6** A | **2.1** A |
| PQ 90 | **4.2** A | **2.4** A | **1.4** A | **3.8** A | **2.2** A |
| PQ 100 | **6.2** A | **3.6** A | **2.1** A | **5.9** A | **3.4** A |
| PQ 200 | **8.3** A | **4.8** A | **2.8** A | **7.9** A | **4.6** A |
| PQ 300 | **9.0** A | **5.2** A | **3.0** A | **8.7** A | **5.0** A |

## PALLETIZATION

| MODEL | | GROUPAGE | CONTAINER |
|---|---|---|---|
| Single-phase | Three-phase | n. pumps | n. pumps |
| PQm 60 | PQ 60 | **256** | **352** |
| PQm 61 | PQ 61 | **238** | **306** |
| PQm 65 | PQ 65 | **210** | **270** |
| PQm 70 | PQ 70 | **102** | **170** |
| PQm 80 | PQ 80 | **102** | **170** |
| PQm 90 | PQ 90 | **102** | **170** |
| PQm 100 | PQ 100 | **72** | **96** |
| PQm 200 | PQ 200 | **72** | **96** |
| PQm 300 | PQ 300 | **72** | **270** |