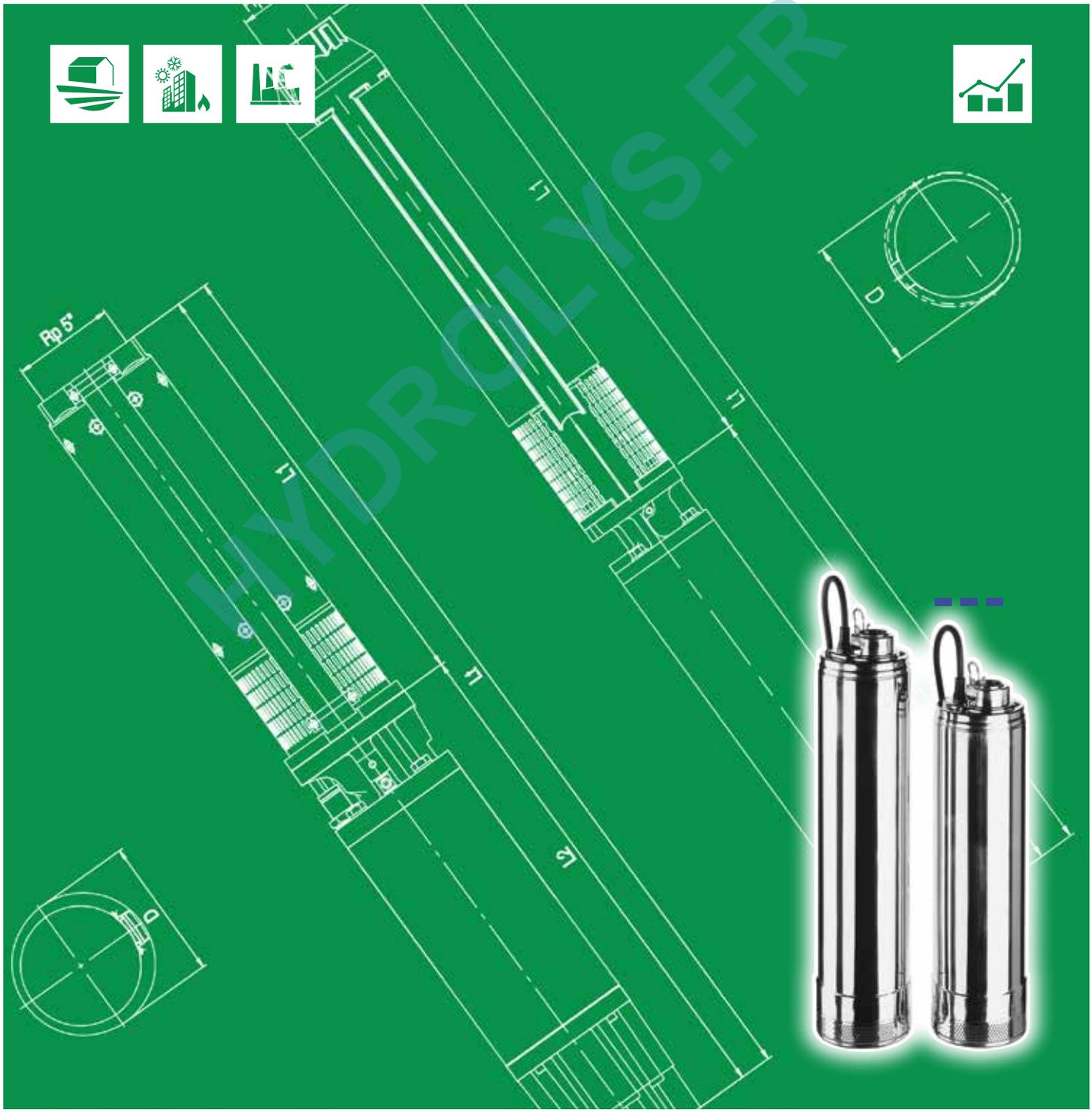




Japanese Technology since 1912

IDROGO

Data Book 50Hz



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HYDROLYS.FR

SPECIFICATION

50Hz

Rev. K

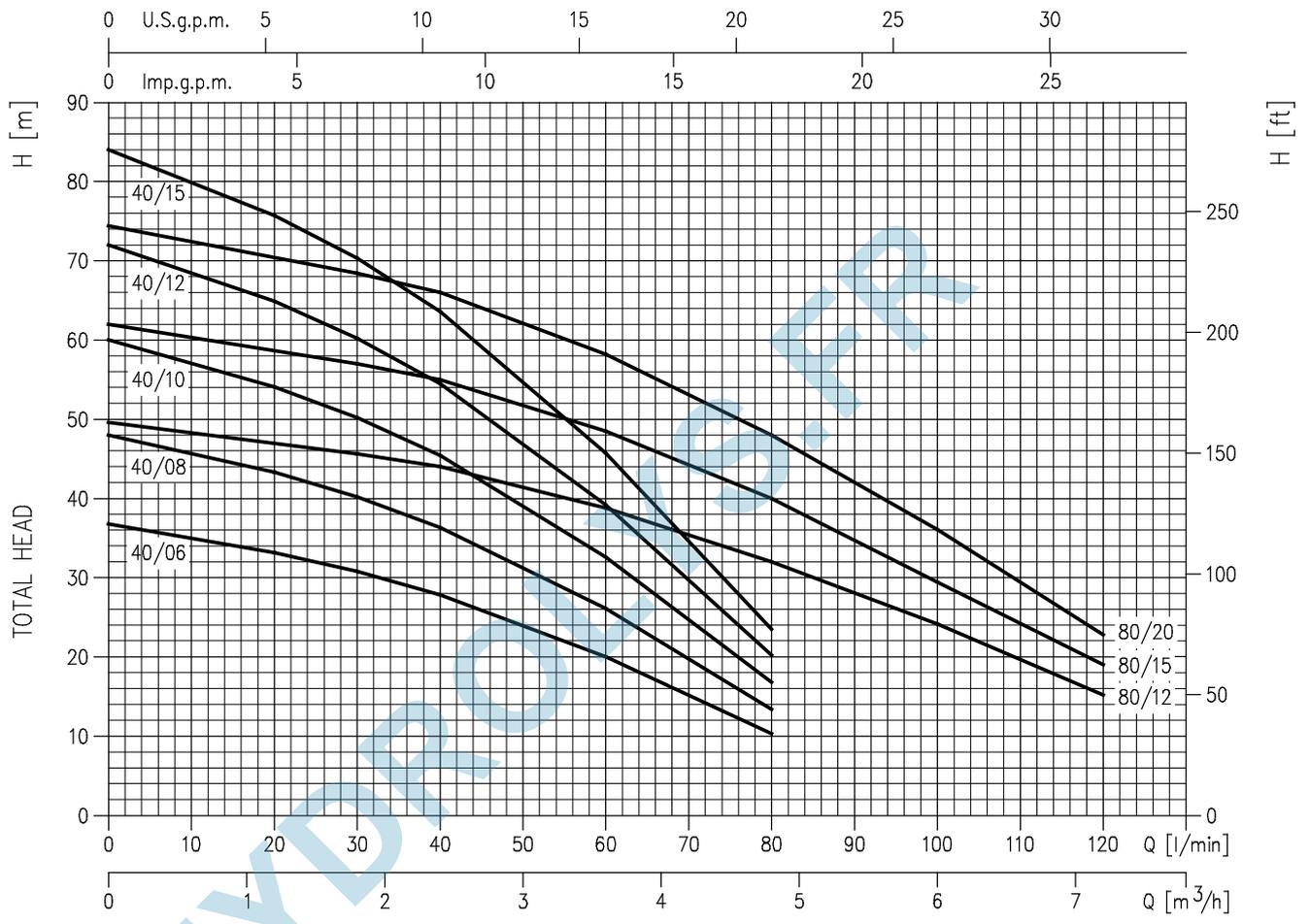
| PUMP | | | |
|-----------------------------|--|---|--------------------|
| Liquid Handled | Type of liquid | Clean water | |
| | Temperature [°C] | max. +40 | |
| | Max solids size [mm] | 2,5 | |
| Maximum working pressure | [MPa] | 1 | |
| Maximum immersion | [m] | 2 (with power cable length 5 m) 10 (with power cable length 20 m for version with float switch) 17 (with power cable length 20 m) | |
| Construction | Impeller | Closed centrifugal type (multiple stages) | |
| | Shaft seal type | Double mechanical seal | |
| | Bearing | Sealed ball bearing | |
| Pipe Connection | Suction-Flange [mm] | Strainer | |
| | Discharge-Flange [inch] | G1¼ UNI ISO 228 | |
| Material | Casing | EN 1.4301 (AISI 304) | |
| | Casing cover | EN 1.4301 (AISI 304) | |
| | Impeller | PPE+PS glass fiber reinforced | |
| | Diffuser | PPE+PS glass fiber reinforced | |
| | Shaft seal | Pump side: | SiC/ Carbon /NBR |
| | | Motor side: | Carbon/Ceramic/NBR |
| | Shaft | EN 1.4057 (AISI 431) | |
| Lubricating liquid | White mineral oil: Esso Marcol 152 (90 cc) | | |
| Applicable standard of test | | ISO 9906 Annex A | |

| MOTOR | | |
|-------------------------------------|----------------------|---|
| Type | Submersible dry type | |
| | Single Phase | Three Phase |
| No. of Poles | 2 | |
| Rotation speed [min ⁻¹] | ≈2800 | |
| Insulation Class | Class F | |
| Protection degree (CEI EN 60034-5) | IP 68 | |
| Power rating | [kW] | 0.45 ÷ 1.1 |
| | [HP] | 0.6 ÷ 1.5 |
| Frequency | [Hz] | 50 Hz |
| Voltage | [V] | 230 ±10% |
| Capacitor | Built in | - |
| Over load protection | Built in | Provided by the user |
| Float Switch | Optional | - |
| Float Switch Cable | Material | H07RN-F |
| | Size | 3G1 |
| Upper bearing bracket | Aluminium | |
| Lower bearing bracket | Brass | |
| Motor frame | AISI 304 | |
| Power cable | material | H07RN-F |
| | size | 3 G 1.5 |
| | length [m] | 20 (5 for IDROGO M40/06, IDROGO M40/06 A) |
| Type of cable entry | Cable Gland | |

SELECTION CHART

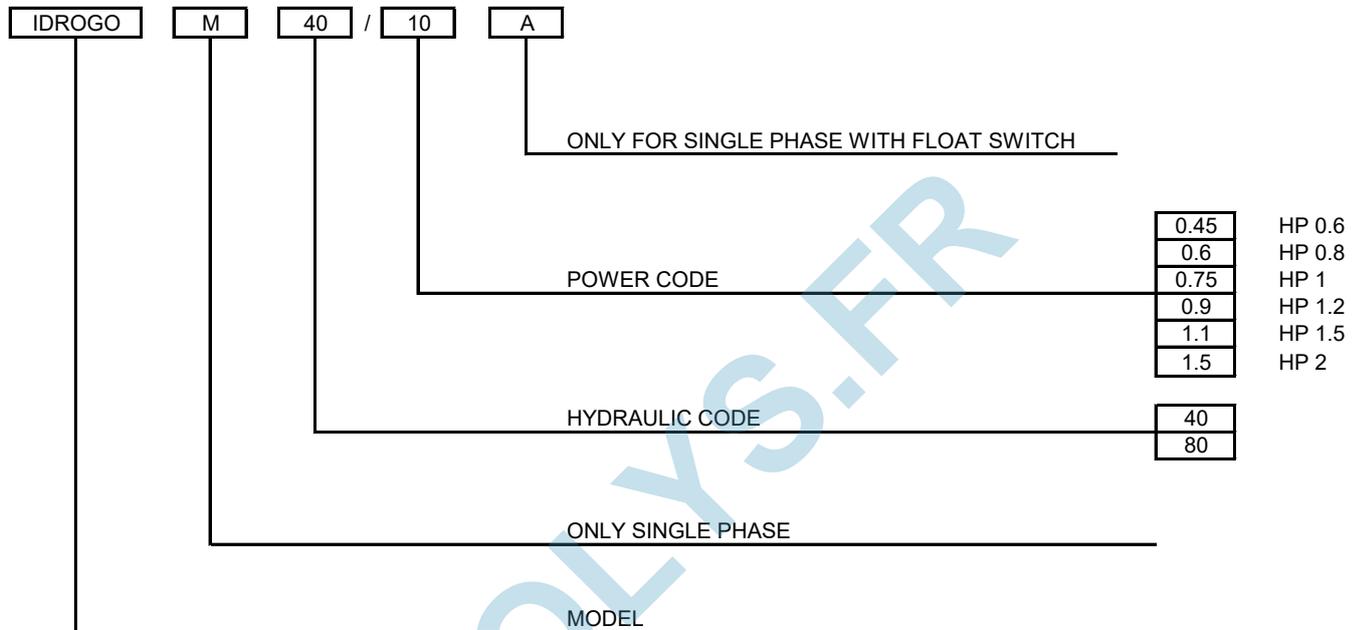
50Hz

Rev. K



| Pump type | | Power | | Q=Capacity | | | | | | | | |
|---------------|--------------|-------|------|------------|------|------|------|------|------|------|------|-----|
| | | | | l/min | 20 | 30 | 40 | 60 | 80 | 100 | 120 | |
| Single Phase | Three Phase | [kW] | [HP] | m³/h | 0 | 1.2 | 1.8 | 2.4 | 3.6 | 4.8 | 6 | 7.2 |
| IDROGO M40/06 | - | 0.45 | 0.6 | 40 | 33.1 | 30.8 | 27.8 | 20 | 10.3 | - | - | - |
| IDROGO M40/08 | IDROGO 40/08 | 0.6 | 0.8 | 48 | 43.3 | 40.2 | 36.3 | 26.1 | 13.4 | - | - | - |
| IDROGO M40/10 | IDROGO 40/10 | 0.75 | 1 | 60 | 54.1 | 50.2 | 45.4 | 32.6 | 16.8 | - | - | - |
| IDROGO M40/12 | IDROGO 40/12 | 0.9 | 1.2 | 72 | 64.9 | 60.2 | 54.5 | 39.2 | 20.2 | - | - | - |
| IDROGO M40/15 | IDROGO 40/15 | 1.1 | 1.5 | 84 | 75.7 | 70.3 | 63.6 | 45.7 | 23.5 | - | - | - |
| IDROGO M80/12 | IDROGO 80/12 | 0.9 | 1.2 | 49.6 | - | 45.6 | 44 | 38.8 | 32 | 23.2 | 15.2 | - |
| IDROGO M80/15 | IDROGO 80/15 | 1.1 | 1.5 | 62 | - | 57 | 55 | 48.5 | 40 | 28 | 19 | - |
| - | IDROGO 80/20 | 1.5 | 2 | 74.4 | - | 68.4 | 66 | 58.2 | 48 | 34.8 | 22.8 | - |

TYPE KEY



PERFORMANCE CURVE SPECIFICATIONS

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906 Annex A

The curves refer to effective speed of asynchronous motors at 50 Hz

Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt)

The NPSH curve is an average curve obtained in the same conditions of performance curves.

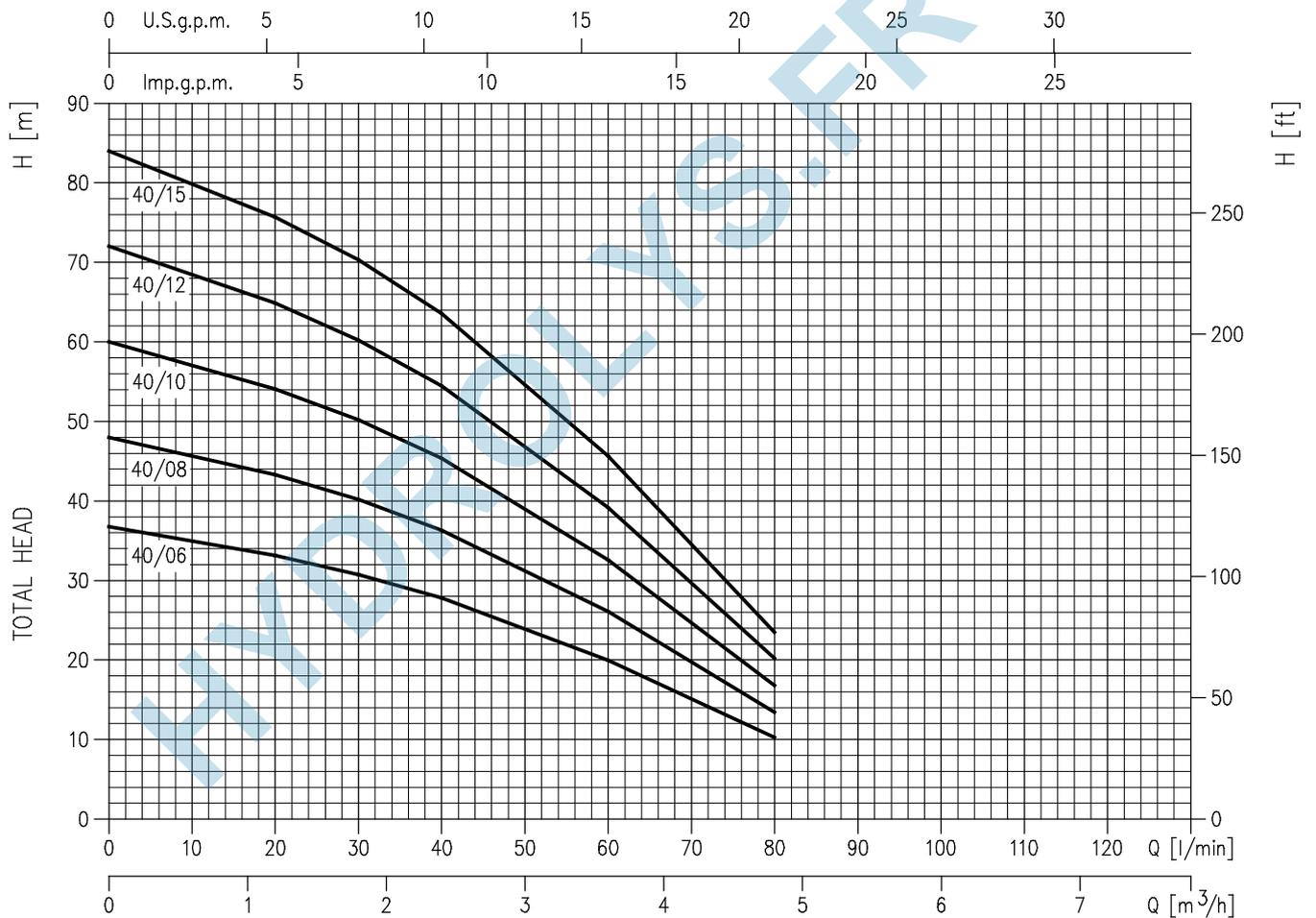
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

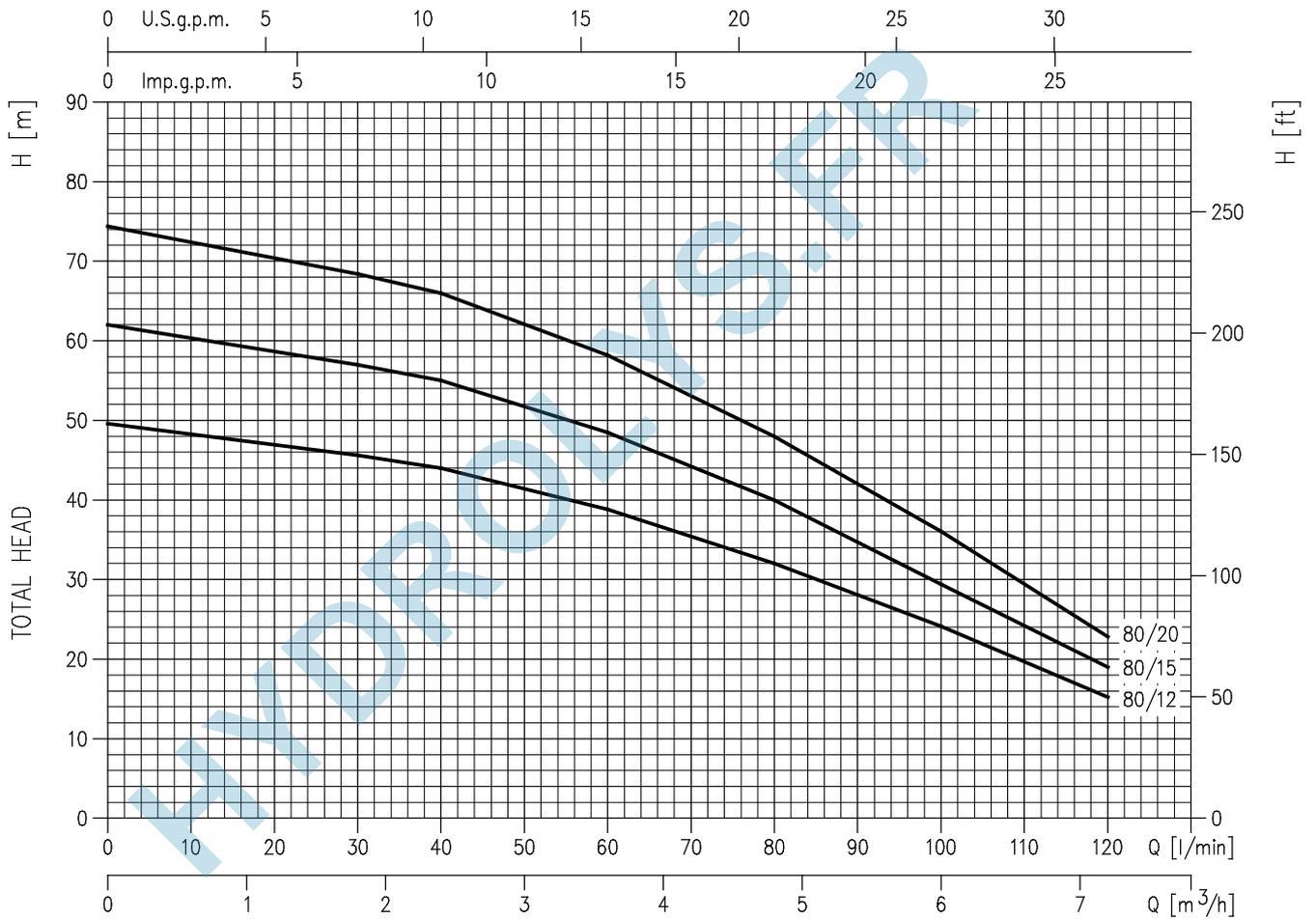
- Q = volume flow rate
- H = total head

IDROGO 40/06 (0.45 kW) - Impeller diameter = 104
IDROGO 40/08 (0.60 kW) - Impeller diameter = 104
IDROGO 40/10 (0.75 kW) - Impeller diameter = 104
IDROGO 40/12 (0.90 kW) - Impeller diameter = 104
IDROGO 40/15 (1.10 kW) - Impeller diameter = 104



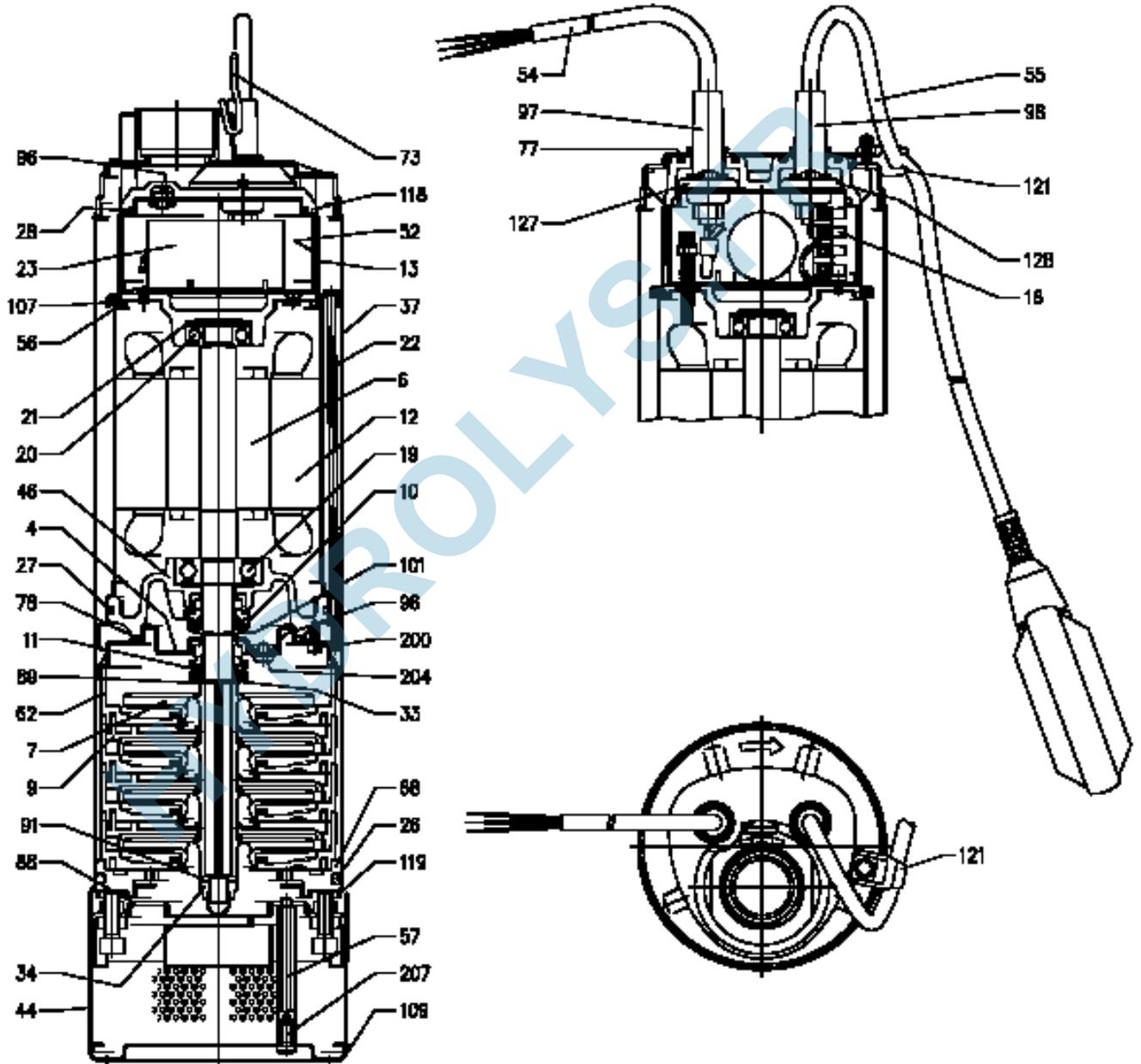
Rotation speed $\approx 2800 \text{ min}^{-1}$
 Test standard: ISO 9906 – Annex A

IDROGO 80/12 (0.9 kW) - Impeller diameter = 102
IDROGO 80/15 (1.1 kW) - Impeller diameter = 102
IDROGO 80/20 (1.5 kW) - Impeller diameter = 102



Rotation speed $\approx 2800 \text{ min}^{-1}$
 Test standard: ISO 9906 – Annex A

SECTIONAL VIEW



CONSTRUCTION

50Hz

Rev. K

| N° | PART NAME | MATERIAL | DIMENSIONS | STANDARD | Q.TY |
|-----|--------------------------------|---------------------------------------|---------------|----------|------|
| 4 | Casing cover | EN 1.4301 (AISI 304) | | | 1 |
| 6 | Shaft with rotor | EN 1.4057 (AISI 431) | | | 1 |
| 7 | Impeller | PPE+PS glass fiber reinforced | | | [4] |
| 9 | Diffuser | PPE+PS glass fiber reinforced | | | [4] |
| 10 | Motor side mechanical seal [3] | Carbon/Ceramic/NBR | See page 304 | | 1 |
| 11 | Pump side mechanical seal [3] | SiC/Carbon/NBR | See page 304 | | 1 |
| 12 | Motor frame with stator | - | | | 1 |
| 13 | Motor cover | EN 1.4301 (AISI 304) | | | 1 |
| 16 | Terminal | - | | | 1 |
| 19 | Lower side ball bearing | - | | | 1 |
| 20 | Upper side ball bearing | - | | | 1 |
| 21 | Adjusting ring | Steel C70 | | | 1 |
| 22 | Tie rod | EN 1.4301 (AISI 304) | | | 3 |
| 23 | Capacitor [1] | - | | | 1 |
| 26 | O ring | NBR | Ø120,7X5,34 | OR 201 | 1 |
| 27 | O ring | NBR | Ø110,7X3,53 | OR 4437 | 1 |
| 28 | O ring | NBR | Ø88,5X3,53 | OR 4350 | 1 |
| 33 | Seeger ring | EN 1.4301 (AISI 304) | | | 1 |
| 34 | Impeller nut | EN 1.4301 (AISI 304) | M10X1.5 | DIN 986 | 1 |
| 37 | External pump casing | EN 1.4301 (AISI 304) | | | 1 |
| 44 | Strainer | EN 1.4301 (AISI 304) | Ø136,5X49X0,8 | | 1 |
| 46 | Bearing housing | Brass | | | 1 |
| 52 | Terminal insulating box | PA66 glass fibre reinforced class V-0 | | | 1 |
| 54 | Power cable | - | | | 1 |
| 55 | Float switch [2] | - | | | 1 |
| 56 | "O" ring | NBR | Ø98,02X3,53 | | 1 |
| 57 | Bolt | EN 1.4305 (AISI 303) | | | 2 |
| 62 | Stage housing | PPE+PS glass fiber reinforced | | | [4] |
| 68 | Lower spacer | PPE+PS glass fiber reinforced | | | 1 |
| 73 | Lifting holder | EN 1.4301 (AISI 304) | | | 1 |
| 77 | O ring | NBR | Ø25,8X3,53 | | 2 |
| 78 | O ring | NBR | Ø82,14X3,53 | | 2 |
| 88 | Fixing flange | EN 1.4301 (AISI 304) | | | 1 |
| 89 | Washer | EN 1.4301 (AISI 304) | | | 1 |
| 91 | Washer | EN 1.4301 (AISI 304) | Ø10,2X20X2 | | 1 |
| 96 | O ring | NBR | Ø4,48X1,78 | OR 2018 | 3 |
| 97 | Cable entry | NBR | Ø15X20 | | 1 |
| 98 | Cable entry [2] | NBR | Ø15X20 | | 1 |
| 101 | Seeger ring | EN 1.4021 (AISI 420) | Ø15 | UNI 7435 | 1 |
| 107 | Retainer ring | EN 1.4301 (AISI 304) | Ø119X1,2 | | 1 |
| 109 | Strainer cover | EN 1.4301 (AISI 304) | Ø136 | | 1 |
| 118 | Upper spacer | PPE+PS glass fiber reinforced | | | 1 |
| 119 | Flange | EN 1.4301 (AISI 304) | | | 1 |
| 121 | Support for float switch [2] | PPE+PS glass fiber reinforced | | | 1 |
| 127 | Cable connector | EN 1.4301 (AISI 304) | | | 1 |
| 128 | Cable connector | EN 1.4301 (AISI 304) | | | 1 |
| 200 | Screw | Stainless steel A2 UNI 7323 | M4x8 | ISO 4762 | 3 |
| 204 | Screw | Stainless steel A2 UNI 7323 | M5x6 | UNI 7687 | 3 |
| 207 | Screw | Stainless steel A2 UNI 7323 | M5x12 | UNI 7687 | 2 |

[1] Only for single phase

[2] Only for single phase with float switch

[3] See constructions mechanical seal page 302

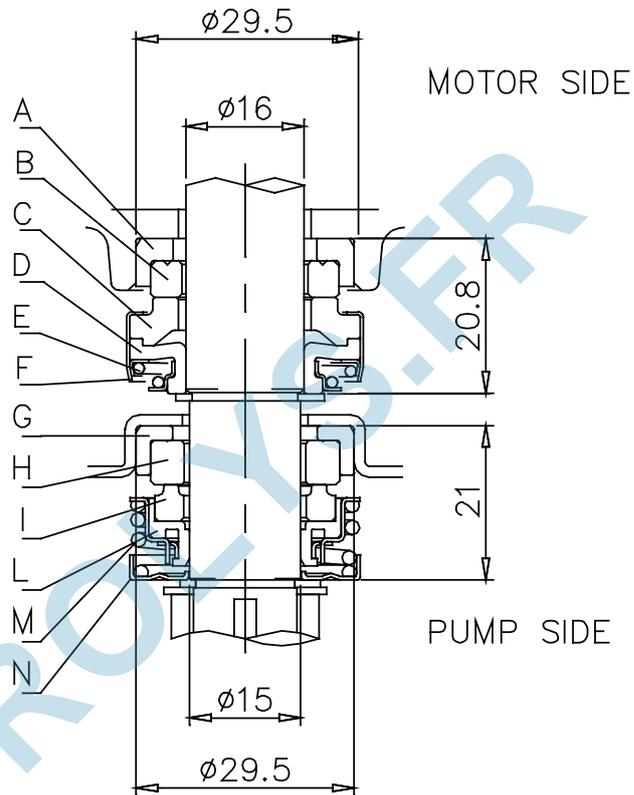
[4] See table below

QUANTITY FOR MODEL

| Pump type | | N°7 Impeller | N°9 Diffuser | N°62 Stage housing |
|---------------|--------------|-----------------|-----------------|--------------------------|
| Single Phase | Three Phase | | | |
| IDROGO M40/06 | - | 3 | 3 | 4 |
| IDROGO M40/08 | IDROGO 40/08 | 4 | 3 | 4 |
| IDROGO M40/10 | IDROGO 40/10 | 5 | 4 | 5 |
| IDROGO M40/12 | IDROGO 40/12 | 6 | 5 | 6 |
| IDROGO M40/15 | IDROGO 40/15 | 7 | 6 | 7 |
| IDROGO M80/12 | IDROGO 80/12 | 4 | 3 | 4 |
| IDROGO M80/15 | IDROGO 80/15 | 5 | 4 | 5 |
| - | IDROGO 80/20 | 6 | 5 | 6 |

HYDROLYSER

MECHANICAL SEAL

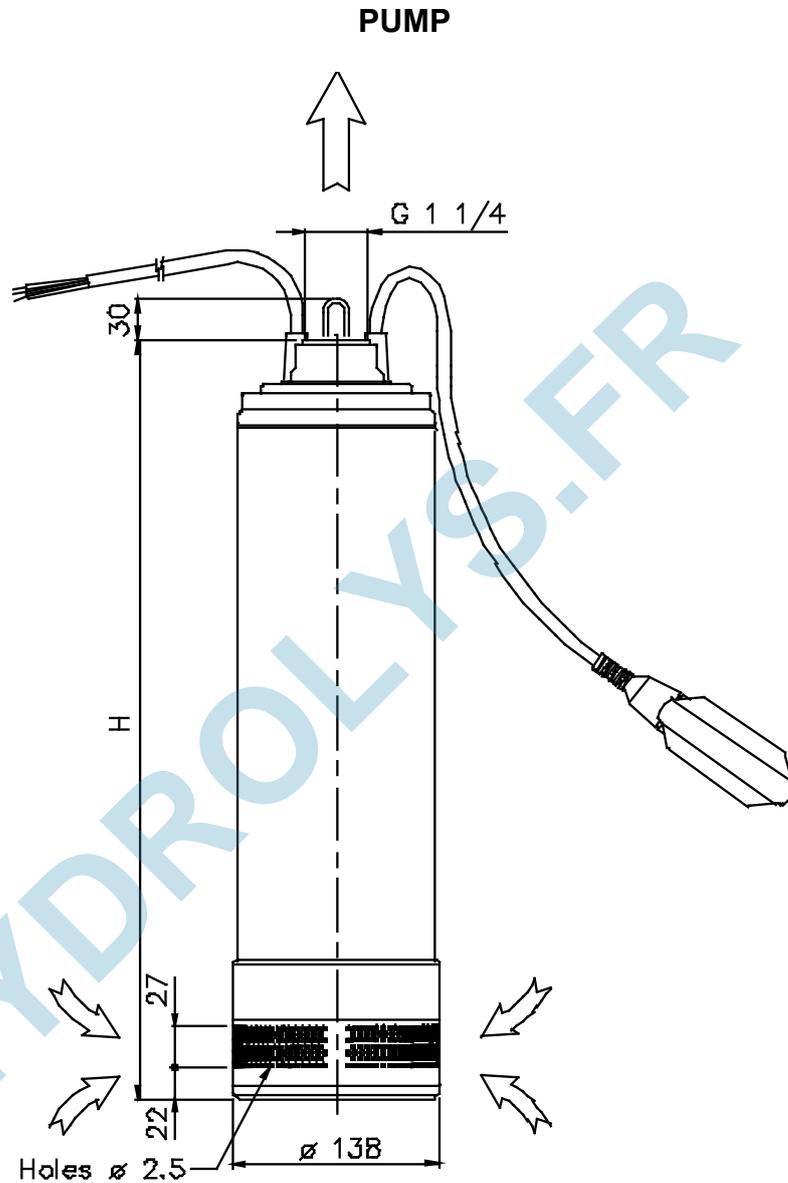


| REF | PART NAME | MATERIAL Standard version (IDROGO) |
|-----|-----------------|--|
| A | Rubber seat | NBR |
| B | Stationary ring | Cearmic |
| C | Rotary ring | Carbon |
| D | Rotary seal | NBR |
| E | Coil spring | AISI 304 |
| F | Seal cover | AISI 304 |
| G | Rubber seat | NBR |
| H | Stationary ring | Silicon carbide |
| I | Rotary ring | Carbon |
| L | Rotary seal | NBR |
| M | Coil spring | AISI 304 |
| N | Seal cover | AISI 304 |

BEARINGS

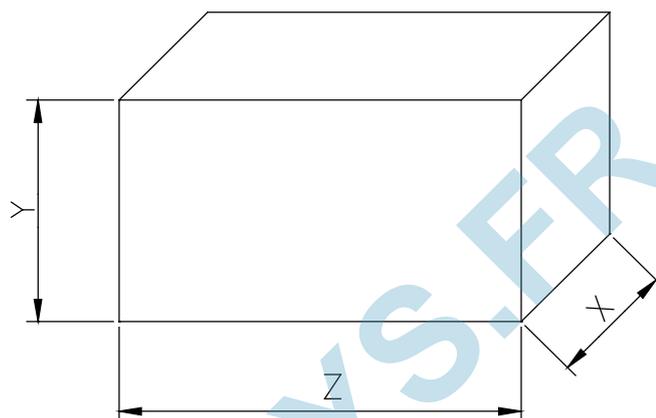
| Pump type | | Ball Bearing | |
|---------------|--------------|--------------|----------|
| Single Phase | Three Phase | Pump side | Fan side |
| IDROGO M40/06 | - | 6303 ZZ | 6202 ZZ |
| IDROGO M40/08 | IDROGO 40/08 | 6303 ZZ | 6202 ZZ |
| IDROGO M40/10 | IDROGO 40/10 | 6303 ZZ | 6202 ZZ |
| IDROGO M40/12 | IDROGO 40/12 | 6303 ZZ | 6202 ZZ |
| IDROGO M40/15 | IDROGO 40/15 | 6303 ZZ | 6202 ZZ |
| IDROGO M80/12 | IDROGO 80/12 | 6303 ZZ | 6202 ZZ |
| IDROGO M80/15 | IDROGO 80/15 | 6303 ZZ | 6202 ZZ |
| - | IDROGO 80/20 | 6303 ZZ | 6202 ZZ |

HYDROLYS



| Pump type | | H [mm] |
|---------------|--------------|--------|
| Single Phase | Three Phase | |
| IDROGO M40/06 | - | 513 |
| IDROGO M40/08 | IDROGO 40/08 | 513 |
| IDROGO M40/10 | IDROGO 40/10 | 539 |
| IDROGO M40/12 | IDROGO 40/12 | 590 |
| IDROGO M40/15 | IDROGO 40/15 | 616 |
| IDROGO M80/12 | IDROGO 80/12 | 540 |
| IDROGO M80/15 | IDROGO 80/15 | 564 |
| - | IDROGO 80/20 | 590 |

PACKING

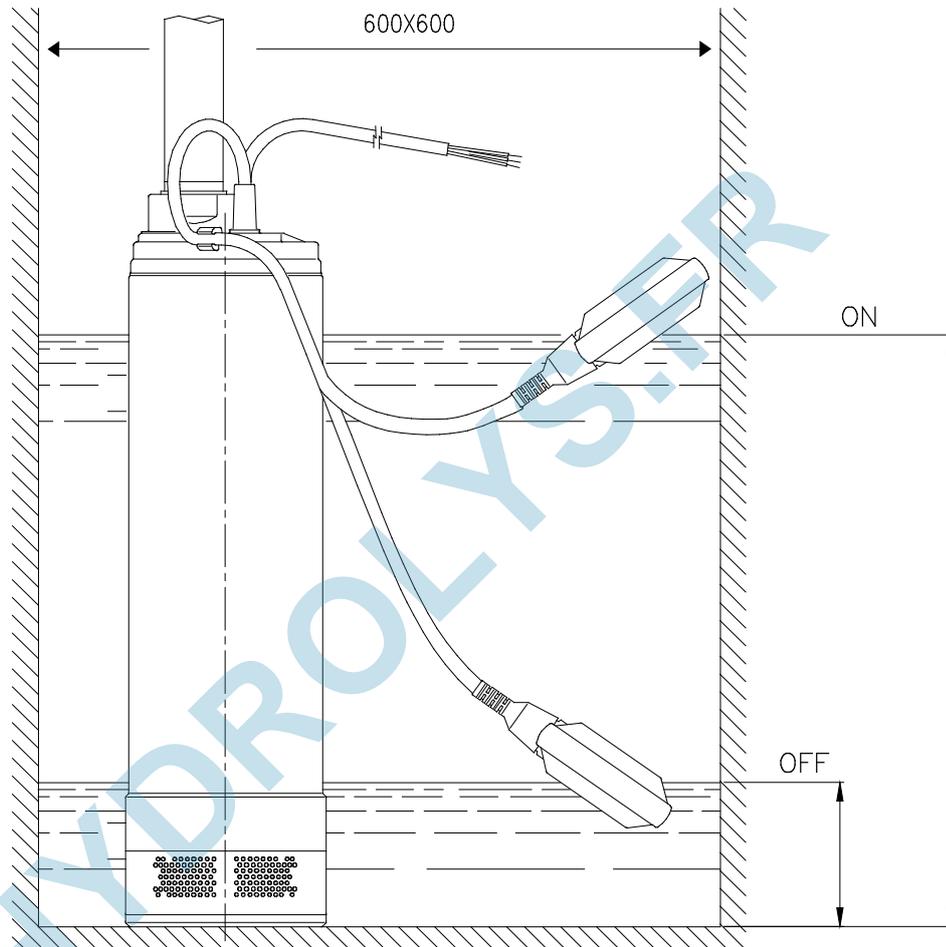


| Pump type | | Packing [mm] | | | Weight [kgf] | |
|----------------|--------------|--------------|-----|-----|--------------|------|
| Single Phase | Three Phase | X | Y | Z | [1~] | [3~] |
| IDROGO 40/06 M | - | 200 | 200 | 620 | 13 | - |
| IDROGO 40/08 M | IDROGO 40/08 | 200 | 200 | 620 | 14.6 | 14.8 |
| IDROGO 40/10 M | IDROGO 40/10 | 200 | 200 | 620 | 16 | 16.1 |
| IDROGO 40/12 M | IDROGO 40/12 | 200 | 200 | 700 | 17.2 | 17.4 |
| IDROGO 40/15 M | IDROGO 40/15 | 200 | 200 | 700 | 18.3 | 18.3 |
| IDROGO 80/12 M | IDROGO 80/12 | 200 | 200 | 620 | 16.5 | 16.4 |
| IDROGO 80/15 M | IDROGO 80/15 | 200 | 200 | 700 | 17.7 | 17.4 |
| - | IDROGO 80/20 | 200 | 200 | 700 | - | 18 |

MOTOR DATA

| Pump type | | Power | | Capacitor Single Phase | | Input [kW] | | Full load current [A] | | | Locked rotor current [A] | | |
|---------------|--------------|-------|------|---------------------------|-----|-----------------|----------------|--------------------------|-------------------------------|-----|-----------------------------|-------------------------------|------|
| Single Phase | Three Phase | [kW] | [HP] | [μF] | [V] | Single Phase | Three Phase | Single Phase 230 V | Three Phase 230 V 400 V | | Single Phase 230 V | Three Phase 230 V 400 V | |
| IDROGO M40/06 | - | 0.45 | 0.6 | 16 | 450 | 0.82 | - | 3.8 | - | - | 16 | - | - |
| IDROGO M40/08 | IDROGO 40/08 | 0.6 | 0.8 | 16 | 450 | 1 | 0.95 | 4.3 | 3.3 | 1.9 | 16 | 17.3 | 10 |
| IDROGO M40/10 | IDROGO 40/10 | 0.75 | 1 | 20 | 450 | 1.25 | 1.18 | 5.7 | 3.8 | 2.2 | 20 | 20.8 | 12 |
| IDROGO M40/12 | IDROGO 40/12 | 0.9 | 1.2 | 20 | 450 | 1.42 | 1.33 | 6.8 | 4.2 | 2.4 | 23 | 24.2 | 14 |
| IDROGO M40/15 | IDROGO 40/15 | 1.1 | 1.5 | 31.5 | 450 | 1.6 | 1.55 | 7.3 | 5.2 | 3 | 25 | 28.6 | 16.5 |
| IDROGO M80/12 | IDROGO 80/12 | 0.9 | 1.2 | 20 | 450 | 1.33 | 1.22 | 6.4 | 4.0 | 2.3 | 23 | 24.2 | 14 |
| IDROGO M80/15 | IDROGO 80/15 | 1.1 | 1.5 | 31.5 | 450 | 1.62 | 1.52 | 7.5 | 5.4 | 3.1 | 25 | 28.6 | 16.5 |
| - | IDROGO 80/20 | 1.5 | 2 | - | - | - | 1.9 | - | 6.1 | 3.5 | - | 28.6 | 16.5 |

HYDROLYSIS



| Pump type | ON [mm] | OFF [mm] |
|----------------|---------|----------|
| Single Phase | | |
| IDROGO 40/06 M | 560 | 180 |
| IDROGO 40/08 M | | |
| IDROGO 40/10 M | 590 | 190 |
| IDROGO 40/12 M | 660 | 220 |
| IDROGO 40/15 M | 730 | 240 |
| IDROGO 80/12 M | 590 | 190 |
| IDROGO 80/15 M | 640 | 210 |