

60 Hz



e-HM™ Series

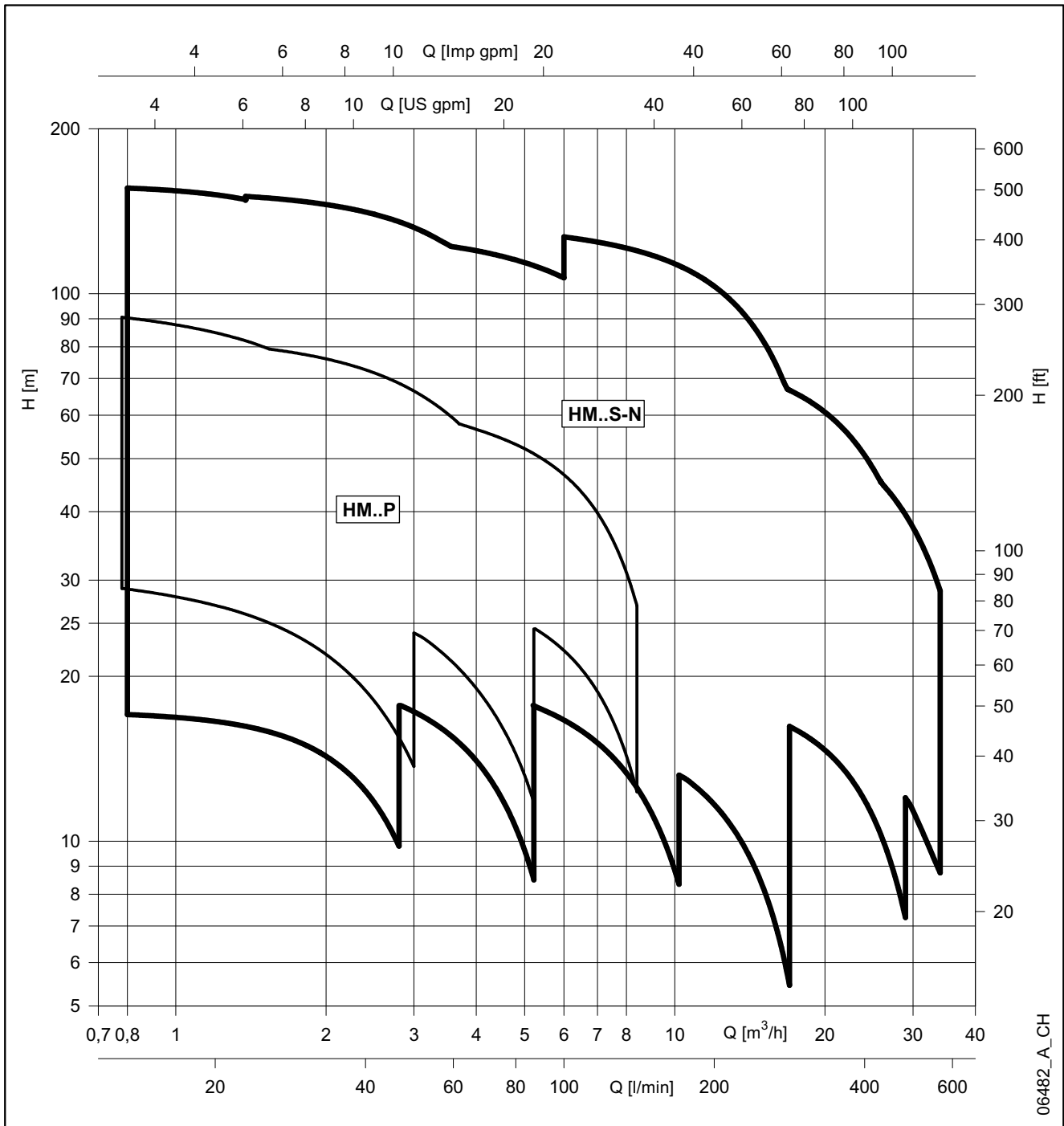
HM..P - HM..S - HM..N

THREADED HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS
EQUIPPED WITH IE3 MOTORS COMPLYING WITH IEC 60034-30

Cod. 191013801 Rev. B Ed.03/2014

 **LOWARA**
a xylem brand

e-HM™ SERIES HYDRAULIC PERFORMANCE AT 60 Hz



Lowara is a trademark of Lowara srl Unipersonale, subsidiary of Xylem Inc.
 HYDROVAR is a trademark of Fluid Handling LLC, subsidiary of Xylem Inc.
 Victaulic is a trademark of Victaulic Company Ltd.
 Noryl is a trademark of SABIC Innovative Plastics Company.
 Kalrez is a trademark of E.I. Du Pont Nemours & Co.
 Xylect is a trademark of Xylem Water Solutions AB, subsidiary of Xylem Inc.

CONTENTS

| | |
|---|-----------|
| General introduction | 5 |
| Applications, benefits - Building services | 6 |
| Applications, benefits - Industry | 7 |
| General characteristics | 8 |
| Specifications | 9 |
| Identification code | 10 |
| Electric pump rating plate | 11 |
| Electric pump cross section and main components | |
| 1, 3, 5 HM..P series | 12 |
| 1, 3, 5 HM..S - HM..N series (compact design) | 13 |
| 1, 3, 5, 10, 15, 22 HM..S - HM..N series (sleeve design) | 14 |
| Mechanical seals | 15 |
| Motors | 17 |
| HM..P series | |
| Hydraulic performance range at 60 Hz, 2 poles | 20 |
| Dimensions and weights, operating characteristics at 60 Hz, 2 poles | 22 |
| HM..S - HM..N series | |
| Hydraulic performance range at 60 Hz, 2 poles | 28 |
| Dimensions and weights, operating characteristics at 60 Hz, 2 poles | 32 |
| Accessories | 51 |
| Reports and declarations | 55 |
| Technical appendix | 57 |



e-HM™ SERIES

GENERAL INTRODUCTION

Our customers are central to our business.

Many years of collaboration with them across the different markets and all over the world has taught us that the Building Services market requires specific pump design to meet the challenge of the energy saving and the industrial segments need customized and reliable compact pumps to ensure top performance of the systems and continuous quality of the production.

Therefore we have developed a wide range of horizontal multistage pumps, the e-HM™, to give an appropriate and dedicated solution to special applications and installations in the industry and in the building services market.



Pump design

The e-HM™ is a non-self-priming, end-suction horizontal multistage, high pressure centrifugal pump, with axial threaded inlet and radial threaded outlet. The pumps are close-coupled design and are equipped with non-standard Lowara motors. The e-HM™ is equipped with mechanical seal.

The e-HM™ are highly modular pumps that are fitted with an innovative hydraulic design that secures high efficiency performances and an increased Mean Time Between Failure.

The e-HM™ is available in two different configurations:

- "Compact" design for sizes 1HM, 3HM and 5HM up to 6 stages
- "Sleeve" design for sizes 1HM, 3HM and 5HM from 7 stages and above; any models of 10HM, 15HM and 22HM.

The "Compact" design is made of one single piece fabricated stainless steel pump body directly connected to the motor flange. The "Compact" has only one O-ring for the sealing of the casing that clearly reduces the leakages possibilities.

The "Sleeve" design is made of an external stainless steel TIG welded sleeve and of separate suction casing kept together with the mean of an aluminum casted pump bracket and of stainless steel tie rods screwed in the motor flange.

The e-HM™ is available in three different material execution:

- HM..P: Stainless steel pump body (EN 1.4301/ AISI 304) with Noryl™ impeller for sizes 1HM, 3HM, 5HM up to 6 stages.
- HM..S: full stainless steel (EN 1.4301/ AISI 304) – any models.
- HM..N: full stainless steel (EN 1.4401/ AISI 316) – any models.

Motor

The e-HM™ are equipped with surface motors designed and manufactured in accordance with EN standards.

The e-HM™ series can be equipped as well with variable speed drivers such as the Teknospeed and the Hydrovar™.

Range declination

The e-HM™ are available as:

- Fix speed Electric pump.
- Variable speed system with Teknospeed driver embedded (on request).

e-HM™ SERIES APPLICATIONS, BENEFITS – BUILDING SERVICES

The e-HM™ series and the different available configurations have been designed to cover a wide range of applications in the residential and small commercial building services from the water supply to pressure boosting as well as heating and cooling applications.

Applications

The e-HM™ series could be installed both in single private-own house and in small/medium residential buildings.

The e-HM™ series will be as well your preferred choice for water supply and pressure boosting in small block offices and shops. The e-HM™ series could be finally installed as well for small/medium irrigation installation.

Benefits

Payback: Installing the e-HM™ series guarantee a very short payback period as the premium efficiency makes the e-HM™ the lowest energy consuming fixed speed pump on the market.

Combined with Teknospeed makes the pump paying for itself in very quickly. (43% of reduced operating cost per year).

Reliability: The e-HM™ series secures as well reliable operations over time thanks to its robust and innovative design. This could be increased with the installation of the Teknospeed: variable speed operation reduces mechanical stress on the pump components and water hammering during stopping.

Comfort: The e-HM™ series guarantee as well an increased user comfort thanks to very silent operation. The combination of the e-HM™ series with the Teknospeed will secure constant pressures at any points of water in your building and constant temperatures even when other taps are opened!



For the installers, the e-HM™ series are easy to install and the best choice for the end user in term of energy savings. The combination of the e-HM™ with the Teknospeed is the guarantee of quick and easy installation as the system is supplier with cable, plug and pressure transmitter. Only small vessels are required.

Features

- Compact design with best-in class performances.
- Wide range of performances with 6 sizes and flow up to 34 m³/h.
- Nominal pressure up to 10 bar with Noryl™ impellers and 16 bar with stainless steel impellers.
- Versatile design of the smaller sizes (up to 5HM).
 - Compact version with Noryl™ impellers for restricted space installation.
 - High efficiency version with stainless steel impellers when energy saving is a must.
- Robust and silent design of the larger sizes (from 10HM to 22HM) due the sleeve configuration.
- IE3 Lowara motors: high performances and silent operations.
- Stainless steel material for pump body and main components in contact with the pumped liquid.
- “Essential O-ring design” that highly reduces the sealing weaknesses (1 O-Ring for Compact, 2 for Sleeve).

e-HM™ SERIES APPLICATIONS, BENEFITS – INDUSTRY

The e-HM™ series and the different available configurations and standard options have been designed to cover a wide range of applications in industry from washing and cleaning machines, to cooling and heating applications, thru water treatment and filtration processes, food and beverage and pharmaceutical applications.

Applications

The e-HM™ series could be installed either in machines where compactness and high performances are a must or within industrial processes where the user looks for a reliable modular design with a restricted vertical footprint.

The e-HM™ series offers as well a wide range of standard options to fit every single requirement coming from the industry. The different material and configuration available allow e-HM™ series working with a wide range of liquid temperature starting -30°C to +120°C.

Benefits

Reliability: The e-HM™ series have been design to withstand heavy duty applications in Industry. For instance, e-HM™ balanced impeller helps decreasing the axial thrust withstand by the motor bearing extending its life time; pump body thickness has been increased by 20% to support heavy duty operation.

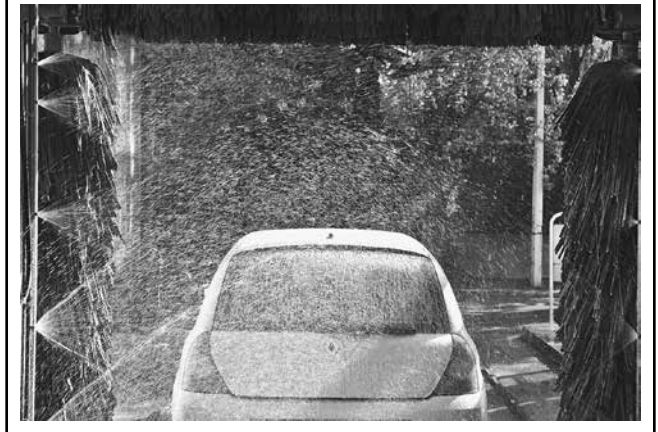
Versatility: The e-HM™ series have been designed to be modular, offering two different mechanical configurations (Very compact or highly efficient design) and multiple material executions (from Noryl™ impeller and AISI 304 pump body to full AISI 316 execution) and surface treatment (electropolishing and passivation). Multiple standard options make e-HM™ fitting in many different applications.

Performances: The e-HM™ series provide best-in class efficiency up to 72% that means 30% energy saving in average compare to similar pump design from the market. The e-HM™ series will be clearly your preferred choice to meet any efficiency requirements or simply to save money in your installation and processes.

A global platform: the e-HM™ series are assembled in different factories across the world to make e-HM™ always closer to our customers. Beyond our commitment to reduce the carbon footprint of e-HM™, this global platform secure that the same design is available everywhere with the same quality processes.

Features

- Wide range of performances with 6 sizes, flow up to 34 m³/h, pressure up to 157 meters.
- Nominal pressure up to 10 bar with Noryl™ impellers and 16 bar with stainless steel impellers
- More than 85% of the range has the same suction height (90mm) for easy installation or system upgrade.
- Wide range of temperatures for pumped liquid: -30°C to +120°C.
- Wide range of voltages for worldwide applications.
- Availability of UL (cURus) motor version for North American market (230/460V 60 Hz with 9 pins control box.
- "Essential O-ring design" that highly reduces the sealing weaknesses (1 O-Ring for Compact, 2 for Sleeve).
- IE3 Lowara motors: high performances and silent operations.



e-HM™ SERIES GENERAL CHARACTERISTICS

| HM..P SERIES | 1 | 3 | 5 |
|---|----------|----------|----------|
| Max efficiency flow (m ³ /h) | 2,3 | 3,6 | 6,2 |
| Flow range (m ³ /h) | 0,8÷3 | 1,4÷5,2 | 3÷8,4 |
| Maximum head (m) | 100 | 87,6 | 71,1 |
| Motor power (kW) | 0,40÷1,1 | 0,50÷1,5 | 0,75÷1,5 |
| Max η (%) of pump | 35 | 46 | 55 |
| Standard temperature (°C) | -30 +90 | | |

1-5hmp_2p60_a_tg

| HM..S - HM..N SERIES | 1 | 3 | 5 | 10 | 15 | 22 |
|---|----------|----------|--------|---------|---------|---------|
| Max efficiency flow (m ³ /h) | 2,1 | 3,6 | 7,2 | 12 | 19,5 | 20,9 |
| Flow range (m ³ /h) | 0,8÷2,8 | 1,4÷5,2 | 3÷10,2 | 6÷17 | 10÷29 | 13÷34 |
| Maximum head (m) | 157 | 153 | 131 | 138 | 84,1 | 67 |
| Motor power (kW) | 0,30÷1,5 | 0,30÷2,2 | 0,50÷3 | 1,1÷5,5 | 1,5÷5,5 | 2,2÷5,5 |
| Max η (%) of pump | 51 | 60 | 67 | 68 | 69 | 66 |
| Standard temperature (°C) | -30 +90 | | | | | |

1-22hm_2p60_a_tc

CONNECTIONS

| TYPE | | HM..P - HM..S - HM..N SERIES | | | | | |
|-------------------------------|----------|------------------------------|----|--------|--------|--------|--------|
| | | 1 | 3 | 5 | 10 | 15 | 22 |
| Rp thread (standard) | suction | 1 | 1 | 1 1/4 | 1 1/2 | 2 | 2 |
| | delivery | 1 | 1 | 1 | 1 1/4 | 1 1/2 | 1 1/2 |
| NPT thread (on request) | suction | 1" | 1" | 1" 1/4 | 1" 1/2 | 2" | 2" |
| | delivery | 1" | 1" | 1" | 1" 1/4 | 1" 1/2 | 1" 1/2 |
| DN Victaulic® (on request) | suction | 25 | 25 | 32 | 40 | 50 | 50 |
| | delivery | 25 | 25 | 25 | 32 | 40 | 40 |

1-22hm_2p50-en_b_tc

ELECTRIC PUMP NOISE

| POWER | NOISE |
|-------|-----------|
| kW | LpA dB |
| 0,30 | 55 |
| 0,40 | 55 |
| 0,50 | 55 |
| 0,55 | 59 |
| 0,75 | 59 |
| 0,95 | 59 |
| 1,1 | 65 |
| 1,5 | 65 |
| 2,2 | 65 |
| 3 | 65 |
| 4 | 65 |
| 5,5 | 65 |

1-22hm_mot_2p60_a_tr

The table show the mean sound pressure (Lp) measured as per Curve A (Standard ISO 1680). Noise values were measured with the 60 Hz running with a tolerance of 3 dB (A).

STORAGE AND TRANSPORT TEMPERATURE

from -40°C to +60°C.

e-HM™ SERIES

High efficiency horizontal multistage pump

MARKET SECTORS

BUILDING SERVICES.
INDUSTRY.



APPLICATIONS

- Pressure boosting and water supply systems.
- Washing and cleaning industry including vehicles washing.
- Circulation of hot and cold liquids (like water, water and glycol) for heating, cooling and conditioning systems.
- Water treatment applications.
- Handling of moderately aggressive liquids.



SPECIFICATIONS

PUMP

- Flow rate: up to 34 m³/h.
- Head: up to 157 m.
- Ambient temperature:
from -15°C to +50°C single-phase and three-phase versions.
- Temperature of the pumped liquid:
minimum from -10°C to -30°C according to gasket material.
maximum +90°C for three-phase version and uses according to EN 60335-2-41.
+120°C for three-phase version with stainless steel impellers (HM..S,
HM..N) and uses other than EN 60335-2-41.
+60°C for single-phase version.
- Maximum operating pressure:
10 bar (PN 10) for pumps with Noryl™ impeller.
16 bar (PN 16) for pumps with stainless steel impeller.
- Connections: Rp threaded for both suction and discharge manifold.
- Hydraulic performances compliant with ISO 9906:2012 - Grade 3B
(ex ISO 9906: 1999 - Annex A).

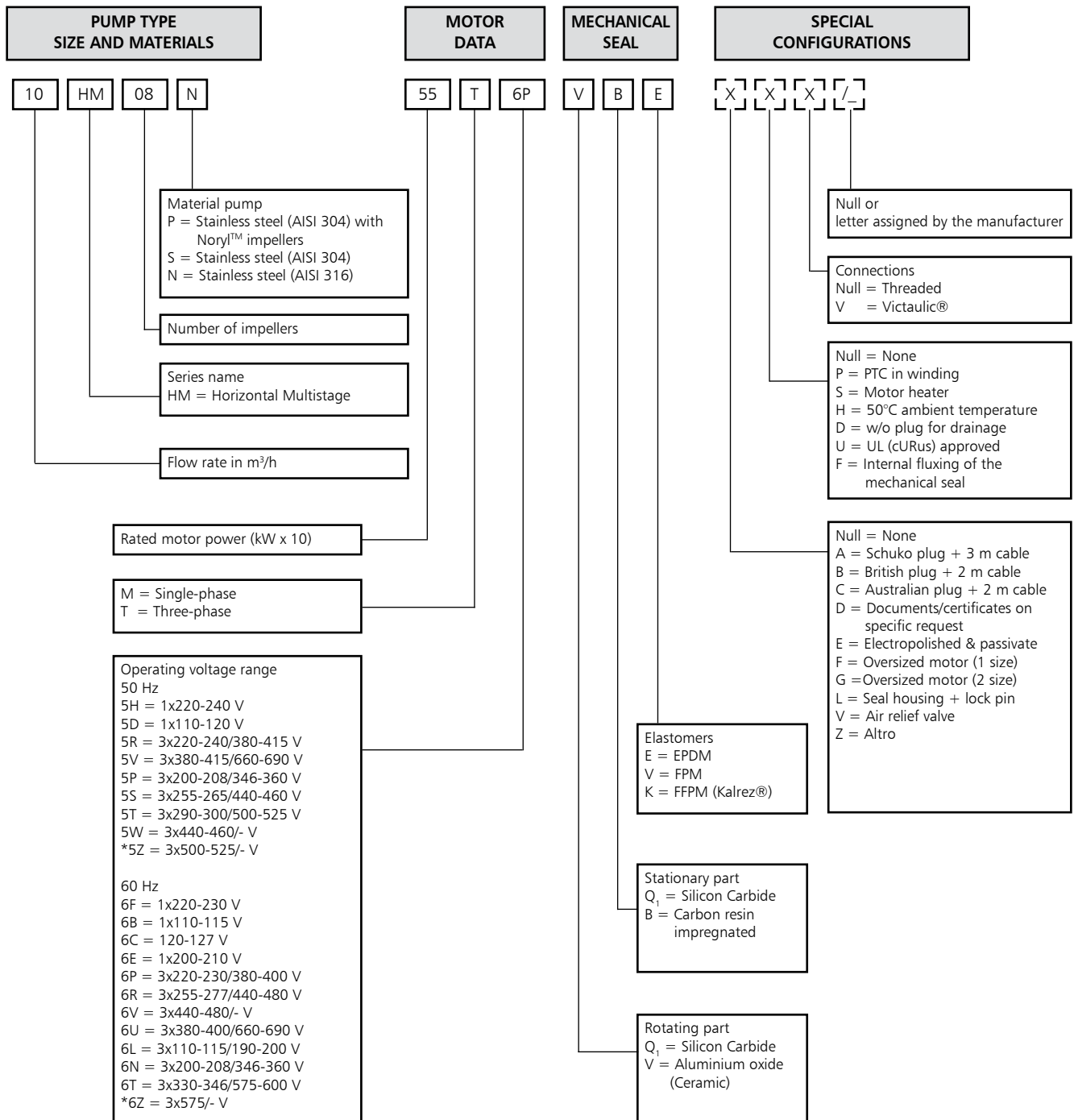


MOTOR

- Electric short-circuit squirrel-cage motor (TEFC), enclosed construction, air-cooled.
- 2-pole.
- IP 55 protection grade as motor only (EN 60034-5).
IP X5 as electric pump (EN 60335-1).
- Insulation class 155 (F).
- Performances according to EN 60034-1.
- Standard voltage:
Single-phase: 220-230 V, 60 Hz, 2 poles.
Three-phase: 220-230/380-400 V, 60 Hz, 2 poles.
- Three-phase from 0,75 to 5,5 kW efficiency class IE3.

**All pumps are certified for drinking water use
(WRAS and ACS).**

e-HM™ SERIES IDENTIFICATION CODE

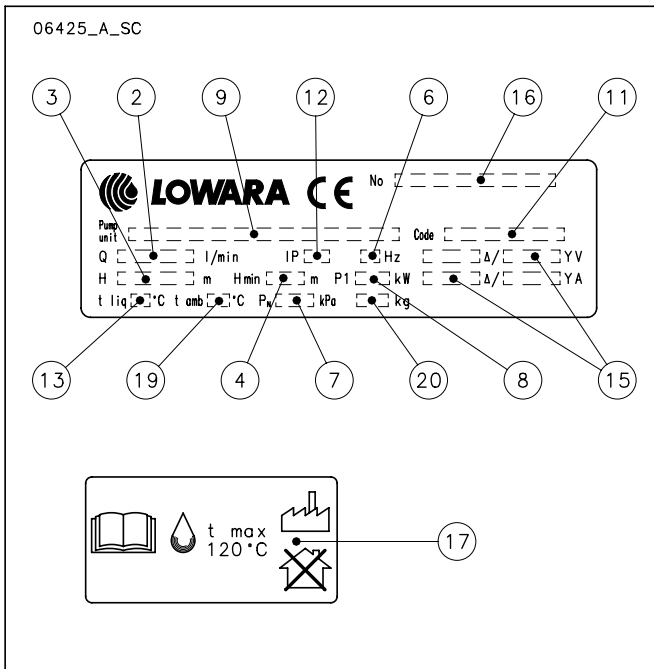


EXAMPLE: 10HM08N55T6PQBE
HM series electric pump, flow rate 10 m³/h, number of impellers 8, N version (AISI 316), rated motor power 5,5 kW, three-phase 60 Hz, voltage 220-230/380-400 V, Silicon/Carbide/EPDM mechanical seal.

* For uses other than EN 60335-2-41.
For special configurations please contact the sales network.

e-HM™ SERIES
ELECTRIC PUMP RATING PLATE

LEGEND



- 2 - Capacity range
- 3 - Head range
- 4 - Minimum head (EN 60335-2-41)
- 6 - Frequency
- 7 - Maximum operating pressure
- 8 - Electric pump unit absorbed power
- 9 - Pump / electric pump unit type
- 11 - Electric pump unit / pump part number
- 12 - Protection degree
- 13 - Maximum operating liquid temperature (uses as EN 60335-2-41)
- 15 - Rated voltage range
- 16 - Serial number (date + progressive number)
- 17 - Maximum operating liquid temperature (uses other than EN 60335-2-41)
- 19 - Maximum operating ambient temperature
- 20 - Electric pump weight

1, 3, 5 HM..P SERIES

ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS

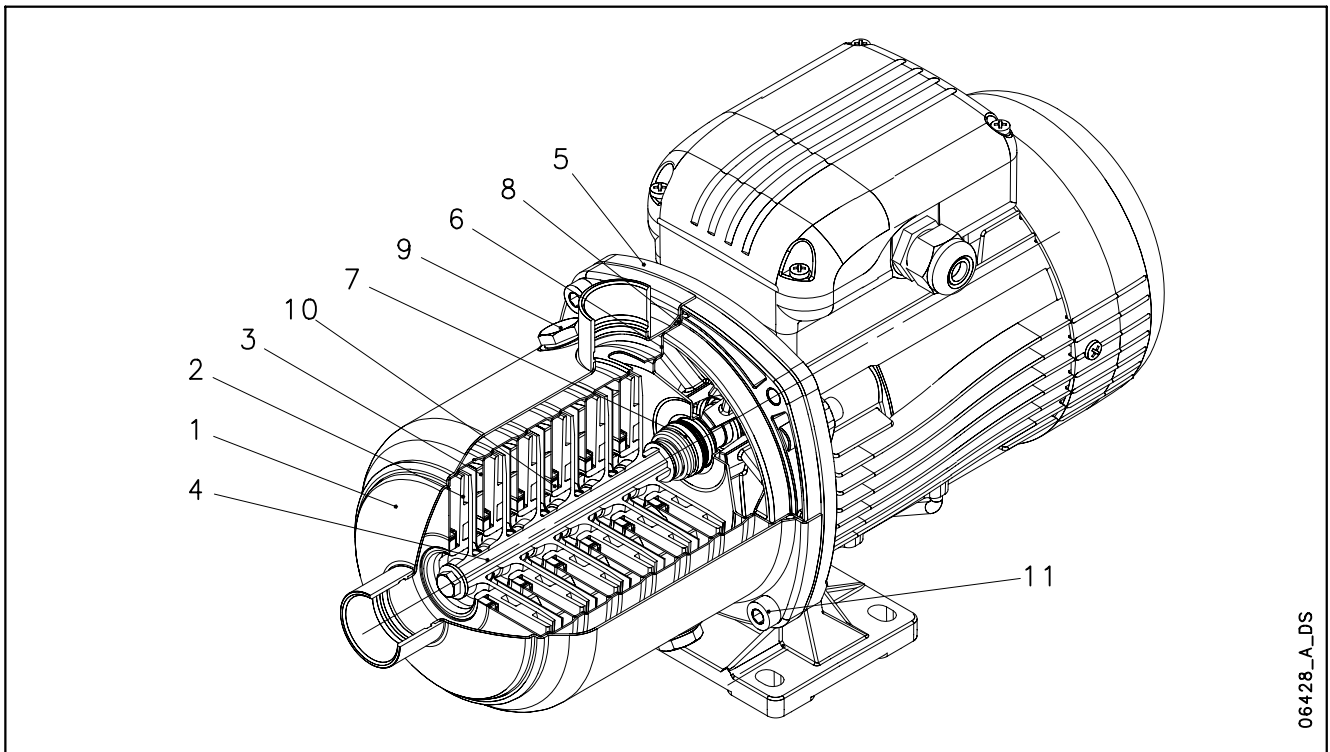


TABLE OF MATERIALS

| REF. N. | NAME | MATERIAL | REFERENCE STANDARDS | |
|---------|--------------------|-------------------------|-------------------------------------|----------|
| | | | EUROPE | USA |
| 1 | Pump body | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 2 | Impeller | Technopolymer (Noryl™) | | |
| 3 | Diffuser | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 5 | Shaft | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 5 | Adapter | Aluminium | EN 1706-AC-AISI11Cu2 (Fe) (AC46100) | - |
| 6 | Seal housing | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 7 | Mechanical seal | Ceramic / Carbon / EPDM | | |
| 8 | Elastomers | EPDM | | |
| 9 | Fill / drain plugs | Nickel-plated brass | EN 12164-CuZn39Pb3 (CW614N) | - |
| 10 | Wear ring | Technopolymer (PPS) | | |
| 11 | Bolts and screws | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |

1-3-5hm-p-en_a_tm

1, 3, 5 HM..S - HM..N SERIES ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS

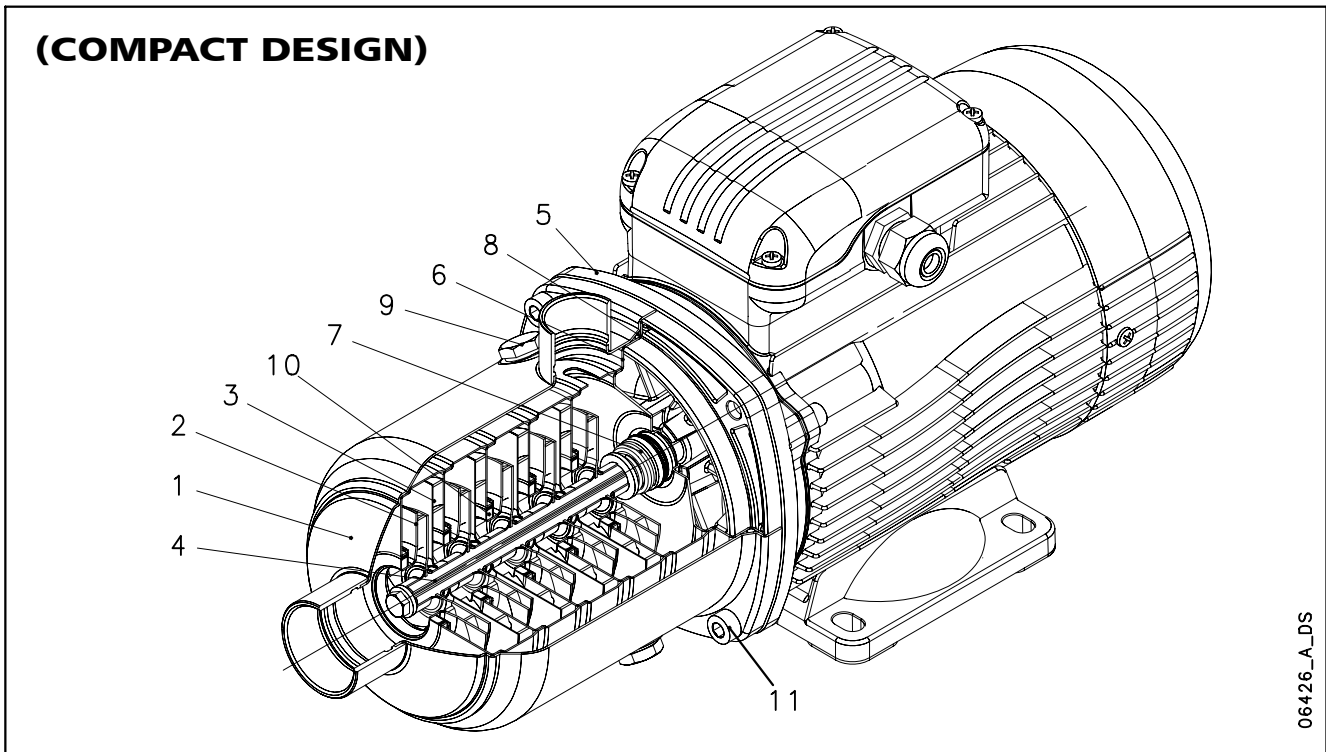


TABLE OF MATERIALS HM..S SERIES

| REF. N. | NAME | MATERIAL | REFERENCE STANDARDS | |
|---------|--------------------|-------------------------|-------------------------------------|----------|
| | | | EUROPE | USA |
| 1 | Pump body | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 2 | Impeller | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 3 | Diffuser | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 4 | Shaft | Stainless steel | EN 10088-1-X5CrNiMo17-12-2 (1.4401) | AISI 316 |
| 5 | Adapter | Aluminium | EN 1706-AC-AISI11Cu2 (Fe) (AC46100) | - |
| 6 | Seal housing | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 7 | Mechanical seal | Ceramic / Carbon / EPDM | | |
| 8 | Elastomers | EPDM | | |
| 9 | Fill / drain plugs | Stainless steel | EN 10088-1-X5CrNiMo17-12-2 (1.4401) | AISI 316 |
| 10 | Wear ring | Technopolymer (PPS) | | |
| 11 | Bolts and screws | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |

1-3-5hm-cp-s-en_a_tm

TABLE OF MATERIALS HM..N SERIES

| REF. N. | NAME | MATERIAL | REFERENCE STANDARDS | |
|---------|--------------------|-------------------------|-------------------------------------|-----------|
| | | | EUROPE | USA |
| 1 | Pump body | Stainless steel | EN 10088-1-X2CrNiMo17-12-2 (1.4404) | AISI 316L |
| 2 | Impeller | Stainless steel | EN 10088-1-X2CrNiMo17-12-2 (1.4404) | AISI 316L |
| 3 | Diffuser | Stainless steel | EN 10088-1-X2CrNiMo17-12-2 (1.4404) | AISI 316L |
| 4 | Shaft | Stainless steel | EN 10088-1-X5CrNiMo17-12-2 (1.4401) | AISI 316 |
| 5 | Adapter | Aluminium | EN 1706-AC-AISI11Cu2 (Fe) (AC46100) | - |
| 6 | Seal housing | Stainless steel | EN 10088-1-X2CrNiMo17-12-2 (1.4404) | AISI 316L |
| 7 | Mechanical seal | Ceramic / Carbon / EPDM | | |
| 8 | Elastomers | EPDM | | |
| 9 | Fill / drain plugs | Stainless steel | EN 10088-1-X5CrNiMo17-12-2 (1.4401) | AISI 316 |
| 10 | Wear ring | Technopolymer (PPS) | | |
| 11 | Bolts and screws | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |

1-3-5hm-cp-n-en_a_tm

1, 3, 5, 10, 15, 22 HM..S - HM..N SERIES ELECTRIC PUMP CROSS SECTION AND MAIN COMPONENTS

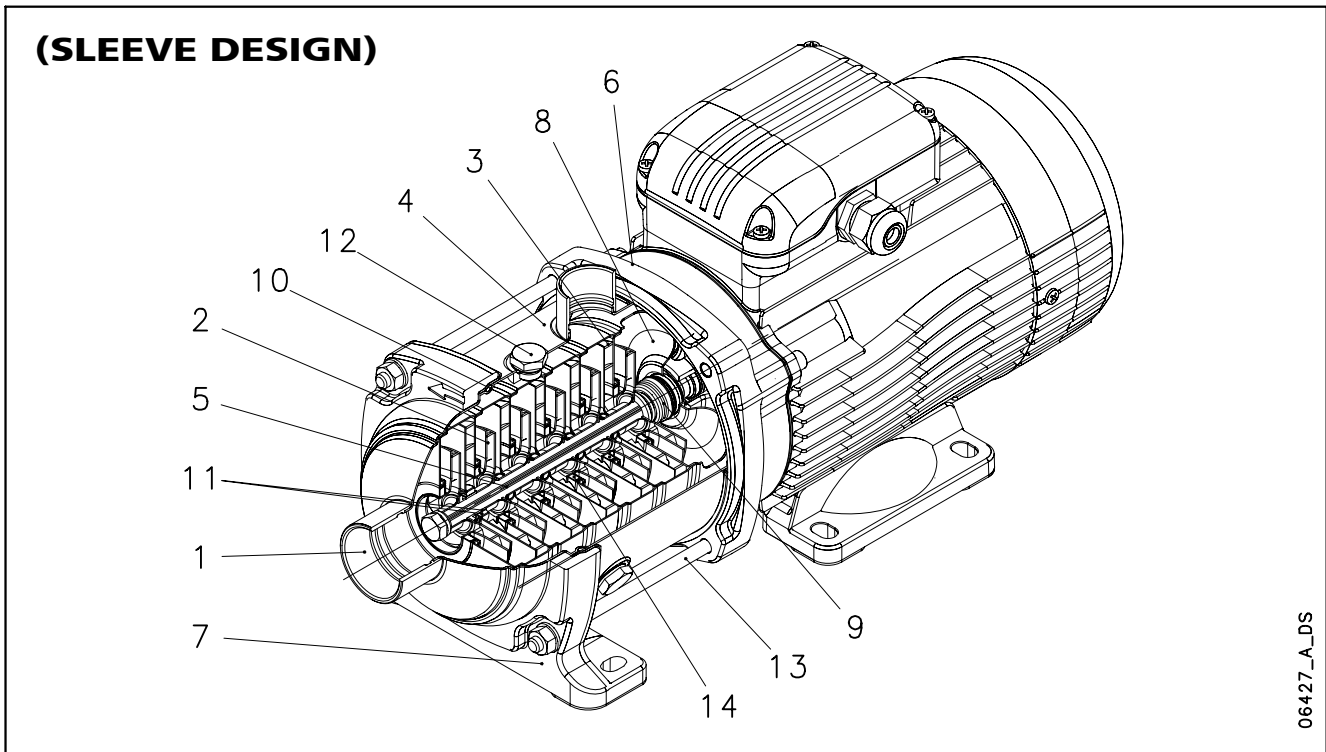


TABLE OF MATERIALS HM..S SERIES

| REF. N. | NAME | MATERIAL | REFERENCE STANDARDS | |
|---------|--------------------------|---|-------------------------------------|----------|
| | | | EUROPE | USA |
| 1 | Head | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 2 | Impeller | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 3 | Diffuser | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 4 | Outer sleeve | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 5 | Shaft | Stainless steel | EN 10088-1-X5CrNiMo17-12-2 (1.4401) | AISI 316 |
| 6 | Adapter | Aluminium | EN 1706-AC-AISI11Cu2 (Fe) (AC46100) | - |
| 7 | Ring with foot | Aluminium | EN 1706-AC-AISI11Cu2 (Fe) (AC46100) | - |
| 8 | Seal housing | Stainless steel | EN 10088-1-X5CrNi18-10 (1.4301) | AISI 304 |
| 9 | Mechanical seal | Ceramic / Carbon / EPDM (PN10) - Silicon Carbide/Carbon/EPDM (PN16) | | |
| 10 | Elastomers | EPDM | | |
| 11 | Shaft sleeve and bushing | Tungsten carbide | | |
| 12 | Fill / drain plugs | Stainless steel | EN 10088-1-X5CrNiMo17-12-2 (1.4401) | AISI 316 |
| 13 | Tie rods | Stainless steel | EN 10088-1-X17CrNi16-2 (1.4057) | AISI 431 |
| 14 | Wear ring | Technopolymer (PPS) | | |

TABLE OF MATERIALS HM..N SERIES

1-22hm-cm-s_a_tm

| REF. N. | NAME | MATERIAL | REFERENCE STANDARDS | |
|---------|--------------------------|---|-------------------------------------|-----------|
| | | | EUROPE | USA |
| 1 | Head | Stainless steel | EN 10088-1-X2CrNiMo17-12-2 (1.4404) | AISI 316L |
| 2 | Impeller | Stainless steel | EN 10088-1-X2CrNiMo17-12-2 (1.4404) | AISI 316L |
| 3 | Diffuser | Stainless steel | EN 10088-1-X2CrNiMo17-12-2 (1.4404) | AISI 316L |
| 4 | Outer sleeve | Stainless steel | EN 10088-1-X2CrNiMo17-12-2 (1.4404) | AISI 316L |
| 5 | Shaft | Stainless steel | EN 10088-1-X5CrNiMo17-12-2 (1.4401) | AISI 316 |
| 6 | Adapter | Aluminium | EN 1706-AC-AISI11Cu2 (Fe) (AC46100) | - |
| 7 | Ring with foot | Aluminium | EN 1706-AC-AISI11Cu2 (Fe) (AC46100) | - |
| 8 | Seal housing | Stainless steel | EN 10088-1-X2CrNiMo17-12-2 (1.4404) | AISI 316L |
| 9 | Mechanical seal | Ceramic / Carbon / EPDM (PN10) - Silicon Carbide/Carbon/EPDM (PN16) | | |
| 10 | Elastomers | EPDM | | |
| 11 | Shaft sleeve and bushing | Tungsten carbide | | |
| 12 | Fill / drain plugs | Stainless steel | EN 10088-1-X5CrNiMo17-12-2 (1.4401) | AISI 316 |
| 13 | Tie rods | Stainless steel | EN 10088-1-X17CrNi16-2 (1.4057) | AISI 431 |
| 14 | Wear ring | Technopolymer (PPS) | | |

1-22hm-cam-n-en_a_tm

**e-HM™ SERIES
MECHANICAL SEALS**

LIST OF MATERIALS ACCORDING TO EN 12756

| POSITION 1 - 2 | POSITION 3 | POSITION 4 - 5 |
|----------------------------------|--------------------|----------------|
| V : Aluminium oxide (Ceramic) | E : EPDM | G : AISI 316 |
| Q ₁ : Silicon Carbide | V : FPM | |
| B : Carbon, resin-impregnated | K : FFPM (Kalrez®) | |

1-22hm_ten-mec-en_a_tm

TYPE OF SEAL

| TYPE | POSITION | | | | | *TEMPERATURE (°C) | **OPERATING PRESSURE |
|---|--------------------|----------------------|-----------------|--------------|-----------------------|----------------------|-------------------------|
| | 1 ROTATING PART | 2 STATIONARY PART | 3 ELASTOMERS | 4 SPRINGS | 5 OTHER COMPONENTS | | |
| STANDARD MECHANICAL SEAL | | | | | | | |
| VBEGG | V | B | E | G | G | -30 + 90 | PN10 |
| OTHER TYPES OF AVAILABLE MECHANICAL SEAL | | | | | | | |
| VBVGG | V | B | V | G | G | -10 + 90 | PN10 |
| Q ₁ Q ₁ VGG | Q ₁ | Q ₁ | V | G | G | -10 + 120 | PN10 |
| Q ₁ Q ₁ KGG | Q ₁ | Q ₁ | K | G | G | -20 + 120 | PN10 |
| Q ₁ Q ₁ EGG | Q ₁ | Q ₁ | E | G | G | -30 + 120 | PN10 |
| STANDARD MECHANICAL SEAL | | | | | | | |
| Q ₁ BEGG | Q ₁ | B | E | G | G | -30 + 120 | PN16 |
| OTHER TYPES OF AVAILABLE MECHANICAL SEAL | | | | | | | |
| Q ₁ Q ₁ VGG | Q ₁ | Q ₁ | V | G | G | -10 + 90 | PN16 |
| Q ₁ VBVGG | Q ₁ | B | V | G | G | -10 + 120 | PN16 |
| Q ₁ Q ₁ KGG | Q ₁ | Q ₁ | K | G | G | -20 + 90 | PN16 |
| Q ₁ BKGG | Q ₁ | B | K | G | G | -20 + 120 | PN16 |
| Q ₁ Q ₁ EGG | Q ₁ | Q ₁ | E | G | G | -30 + 90 | PN16 |

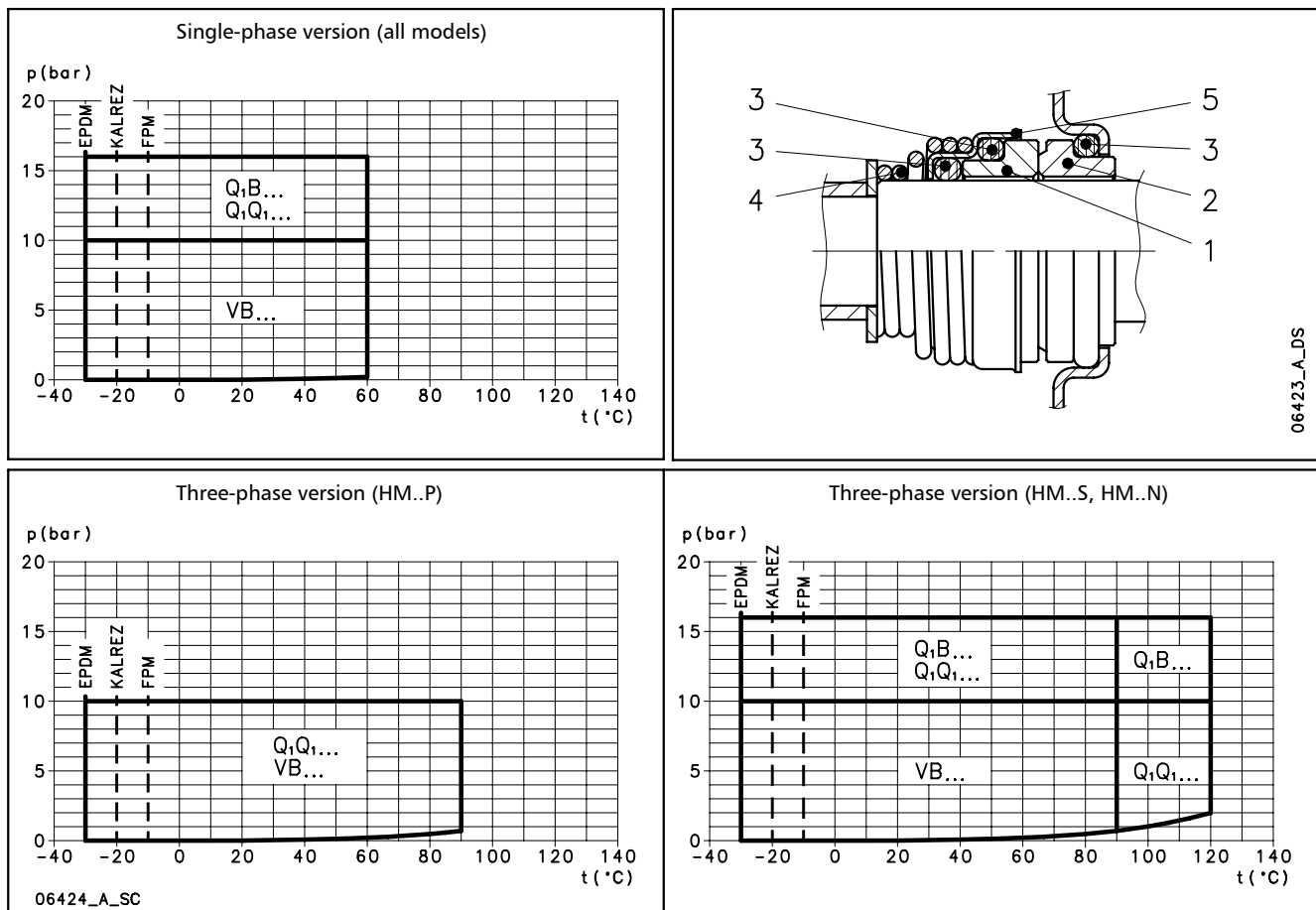
* For all single-phase versions limit the temperature to +60°C.

1-22hm_tipi-ten-mec-en_b_tc

For three-phase HM..P limit the temperature to +90°C.

** Refer to the PN column of the DIMENSIONS AND WEIGHTS tables.

PRESSURE/TEMPERATURE APPLICATION LIMITS FOR COMPLETE PUMP



COMPATIBILITY CHART FOR MATERIALS IN CONTACT WITH MOST COMMONLY USED LIQUIDS

| LIQUID | CONCENTRATION (%) | TEMPERATURE MIN/MAX (°C) | SPECIF. WEIGHT (Kg/dm ³) | VERSIONS | | | RECOMMEND. SEAL | ELASTOM. |
|--|----------------------|--------------------------------|--|----------|-------|-------|--------------------|----------|
| | | | | HM..P | HM..S | HM..N | | |
| Acetic acid | 80 | -10 +70 | 1,05 | • | • | • | Q1BEGG | E |
| Alkaline degreaser | 5 | 80 | | | | | Q1Q1VGG | V |
| Aluminium sulfate | 30 | -5 +50 | 2,71 | • | • | • | Q1Q1EGG | E |
| Ammonia in water | 25 | -20 +50 | 0,99 | • | • | • | Q1BEGG | E |
| Ammonium sulfate | 10 | -10 +60 | 1,77 | • | • | • | Q1Q1EGG | E |
| Benzoic acid | 70 | 0 +70 | 1,31 | | • | • | Q1BVGG | V |
| Boric acid | saturated | -10 +90 | 1,43 | | • | • | Q1Q1VGG | V |
| Butyl alcohol | 100 | -5 +80 | 0,81 | • | • | • | Q1BEGG | E |
| Caustic soda | 25 | 0 +70 | 2,13 | | • | • | Q1Q1EGG | E |
| Chloroform | 100 | -10 +30 | 1,48 | | • | • | Q1BVGG | V |
| Citric acid | 5 | -10 +70 | 1,54 | • | • | • | Q1BEGG | E |
| Cleaning products | 10 | -5 +100 | | | • | • | Q1Q1VGG | V |
| Copper sulfate | 20 | 0 +30 | 2,28 | • | • | • | Q1Q1VGG | V |
| Cutting fluid | 100 | -5 +110 | 0,90 | | • | • | Q1BVGG | V |
| Deionised, demineralised water | 100 | -25 +110 | 1 | • | • | • | Q1BEGG | E |
| Denatured alcohol | 100 | -5 +70 | 0,81 | • | • | • | Q1BEGG | E |
| Diathermic oil | 100 | -5 +110 | 0,90 | | • | • | Q1BVGG | V |
| Emulsion oil and water | any | -5 +90 | | | • | • | Q1BVGG | V |
| Ethyl alcohol | 100 | -5 +40 | 0,81 | • | • | • | Q1BEGG | E |
| Ethylene glycol | 30 | -30 +120 | | • | • | • | Q1BEGG | E |
| Formaldehyde | 100 | 0 +30 | 1,13 | | • | • | Q1Q1KGG | K |
| Formic acid | 5 | -15 +25 | 1,22 | | • | • | Q1BKGG | K |
| Glycerine | 100 | +20 +90 | 1,26 | • | • | • | Q1BEGG | E |
| Hydraulic oil | 100 | -5 +110 | | | • | • | Q1BVGG | V |
| Hydrochloric acid | 2 | -5 +25 | 1,20 | • | • | • | Q1Q1VGG | V |
| Hydroxide sodium | 25 | 0 +70 | | • | • | • | Q1Q1EGG | E |
| Iron sulfate | 10 | -5 +30 | 2,09 | • | • | • | Q1Q1EGG | E |
| Methyl alcohol | 100 | -5 +40 | 0,79 | • | • | • | Q1BEGG | E |
| Mineral oil | 100 | -5 +110 | 0,94 | | • | • | Q1BVGG | V |
| Nitric acid | 50 | -5 +30 | 1,48 | • | • | • | Q1Q1KGG | K |
| Perchloroethylene | 100 | -10 +30 | 1,60 | | • | • | Q1BKGG | K |
| Phosphates-polyphosphates | 10 | -5 +90 | | • | • | • | Q1Q1VGG | V |
| Phosphoric acid | 1 | -5 +30 | 1,33 | | • | • | Q1BVGG | V |
| Propyl alcohol (Propanol) | 100 | -5 +80 | 0,80 | • | • | • | Q1BEGG | E |
| Propylene glycol | 30 | -30 +120 | | • | • | • | Q1BVGG | V |
| Sodium bicarbonate (Baking soda) | saturated | | | • | • | • | Q1BEGG | E |
| Sodium hypochlorite | 1 | -10 +25 | | • | • | • | Q1Q1VGG | V |
| Sodium nitrate | saturated | -10 +80 | 2,25 | | • | • | Q1BEGG | E |
| Sodium sulfate | 15 | -10 +40 | 2,60 | • | • | • | Q1Q1EGG | E |
| Sulphuric acid | 2 | -10 +25 | 1,84 | | • | • | Q1BVGG | V |
| Tannic acid | 20 | 0 +50 | | • | • | • | Q1BEGG | E |
| Tartaric acid | 50 | -10 +25 | 1,76 | | • | • | Q1Q1VGG | V |
| Trichloroethylene | 100 | -10 +40 | 1,46 | | • | • | Q1BKGG | K |
| Uric acid | 80 | -10 +80 | 1,89 | | • | • | Q1BEGG | E |
| Vegetable oil | 100 | -5 +110 | 0,95 | | • | • | Q1BVGG | V |
| Water | 100 | -5 +120 | | • | • | • | Q1BEGG | E |
| Water condensate | 100 | -5 +100 | 1 | • | • | • | Q1BEGG | E |
| Water detergents, mineral oils mixture | 10 | -5 +80 | | | • | • | Q1Q1VGG | V |

tab-comp-hm-en_b_tm

The above table indicates the compatibility of materials depending on the pumped liquid. Check the specific weight of the liquid or the viscosity as this could affect the power input of the motor and hydraulic performance. For further details, please contact the sales network.

e-HM™ SERIES MOTORS

- **Standard three-phase surface motors** $\geq 0,75$ kW supplied as IE3.
- Short-circuit squirrel-cage motor, enclosed construction with external ventilation (TEFC).
- IP 55 protection degree.
- Insulation class 155 (F).
- Electrical performances according to EN 60034-1.
- IE efficiency according to EN 60034-30 ($\geq 0,75$ kW).
- Cable gland with metric according to EN 50262.
- **Single-phase** version:
220-230 V, 60 Hz, 2 poles.
Built-in automatic reset overload protection up to 2,2 kW.
- **Three-phase** version:
220-230/380-400 V, 60 Hz, 2 poles.
Overload protection to be provided by the user.

SINGLE-PHASE MOTORS AT 60 Hz, 2-POLE

| P _N kW | MOTOR TYPE | IEC SIZE | Construction Design | INPUT CURRENT I _n (A) 220-230 V | CAPACITOR | | DATA FOR 220 V 60 Hz VOLTAGE | | | | | | |
|----------------------|----------------|----------|---------------------|--|-----------|-----|------------------------------|---------------------------------|------|------|----------------------|--------------------------------|--------------------------------|
| | | | | | μF | V | min ⁻¹ | I _s / I _n | η % | cosφ | T _n Nm | T _s /T _n | T _m /T _n |
| 0,30 | SM63HM../1036 | 63 | SPECIAL | 2,31-2,36 | 10 | 450 | 3350 | 3,41 | 62,0 | 0,95 | 0,85 | 0,68 | 1,88 |
| 0,40 | SM63HM../1046 | 63 | | 2,86-2,94 | 14 | 450 | 3385 | 3,80 | 67,5 | 0,94 | 1,13 | 0,73 | 2,04 |
| 0,50 | SM63HM../1056 | 63 | | 3,57-3,65 | 16 | 450 | 3365 | 3,73 | 66,8 | 0,95 | 1,42 | 0,69 | 2,07 |
| 0,55 | SM71HM../1056 | 71 | | 3,68-3,62 | 16 | 450 | 3400 | 4,28 | 70,2 | 0,97 | 1,54 | 0,66 | 2,11 |
| 0,75 | SM71HM../1076 | 71 | | 4,98-4,88 | 20 | 450 | 3380 | 3,90 | 69,8 | 0,98 | 2,12 | 0,64 | 1,91 |
| 0,95 | SM71HM../1096 | 71 | | 6,04-5,96 | 25 | 450 | 3370 | 3,80 | 72,9 | 0,98 | 2,69 | 0,58 | 1,86 |
| 1,1 | SM80HM../1116 | 80 | | 6,94-6,89 | 30 | 450 | 3435 | 4,54 | 74,2 | 0,97 | 3,06 | 0,62 | 2,03 |
| 1,5 | SM80HM../1156 | 80 | | 9,28-9,35 | 40 | 450 | 3455 | 4,91 | 76,3 | 0,96 | 4,14 | 0,49 | 2,19 |
| 2,2 | PLM90HM../1226 | 90 | | 12,3-11,7 | 60 | 450 | 3455 | 4,99 | 83,4 | 0,98 | 6,08 | 0,54 | 2,06 |

1-22hm-motm-2p60-en_a_te

e-HM™ SERIES THREE-PHASE MOTORS AT 60 Hz, 2-POLE

| P _N kW | Efficiency η_N | | | | | | | | | | | | IE |
|----------------------|---------------------------|------|------|---------------------------|------|------|---------------------------|------|------|---------------------------|------|------|----|
| | % | | | | | | | | | | | | |
| | Δ 220 V Y 380 V | | | Δ 230 V Y 400 V | | | Δ 380 V Y 660 V | | | Δ 400 V Y 690 V | | | |
| | 4/4 | 3/4 | 2/4 | 4/4 | 3/4 | 2/4 | 4/4 | 3/4 | 2/4 | 4/4 | 3/4 | 2/4 | |
| 0,30 | 69,5 | 69,4 | 65,5 | 71,0 | 69,6 | 64,5 | - | - | - | - | - | - | - |
| 0,40 | 74,1 | 74,4 | 71,2 | 74,7 | 74,1 | 70,2 | - | - | - | - | - | - | - |
| 0,50 | 74,3 | 75,9 | 74,3 | 75,7 | 76,1 | 73,5 | - | - | - | - | - | - | - |
| 0,55 | 78,6 | 78,7 | 76,0 | 78,9 | 78,5 | 75,1 | - | - | - | - | - | - | - |
| 0,75 | 83,4 | 82,4 | 79,0 | 83,4 | 82,4 | 79,0 | 83,4 | 82,4 | 79,0 | 83,4 | 82,4 | 79,0 | |
| 1,1 | 85,6 | 85,0 | 82,1 | 85,6 | 85,0 | 82,1 | 85,6 | 85,0 | 82,1 | 85,6 | 85,0 | 82,1 | 3 |
| 1,5 | 87,2 | 87,0 | 84,6 | 87,2 | 87,0 | 84,6 | 87,2 | 87,0 | 84,6 | 87,2 | 87,0 | 84,6 | |
| 2,2 | 87,7 | 87,2 | 84,7 | 87,7 | 87,2 | 84,7 | 87,7 | 87,2 | 84,7 | 87,7 | 87,2 | 84,7 | |
| 3 | 89,1 | 88,8 | 86,9 | 89,1 | 88,8 | 86,9 | 89,1 | 88,8 | 86,9 | 89,1 | 88,8 | 86,9 | |
| 4 | 91,0 | 91,0 | 89,6 | 91,0 | 91,0 | 89,6 | 91,0 | 91,0 | 89,6 | 91,0 | 91,0 | 89,6 | |
| 5,5 | 91,0 | 90,5 | 88,6 | 91,0 | 90,5 | 88,6 | 91,0 | 90,5 | 88,6 | 91,0 | 90,5 | 88,6 | |

| P _N kW | Model | IEC SIZE | Construction Design | N. of Poles | f _N Hz | Data for 380 V / 60 Hz Voltage | | | | |
|----------------------|-------------------|----------|---------------------|-------------|----------------------|--------------------------------|---------------------------------|----------------------|--------------------------------|--------------------------------|
| | | | | | | cos ϕ | I _s / I _N | T _N Nm | T _s /T _N | T _m /T _N |
| 0,30 | SM63HM../303 | 63 | SPECIAL | 2 | 60 | 0,79 | 4,81 | 0,87 | 3,44 | 3,50 |
| 0,40 | SM63HM../304 | 63 | | | | 0,79 | 5,03 | 1,16 | 3,42 | 3,44 |
| 0,50 | SM63HM../305 | 63 | | | | 0,83 | 4,94 | 1,48 | 3,31 | 3,33 |
| 0,55 | SM71HM../305 | 71 | | | | 0,81 | 6,15 | 1,54 | 3,23 | 3,30 |
| 0,75 | SM80HM../307 E3 | 80 | | | | 0,79 | 8,25 | 2,05 | 3,80 | 4,02 |
| 1,1 | SM80HM../311 E3 | 80 | | | | 0,80 | 9,11 | 3,01 | 4,15 | 4,29 |
| 1,5 | SM80HM../315 E3 | 80 | | | | 0,82 | 9,79 | 4,10 | 4,36 | 4,37 |
| 2,2 | PLM90HM../322 E3 | 90 | | | | 0,82 | 9,80 | 6,01 | 3,80 | 4,01 |
| 3 | PLM90HM../330 E3 | 90 | | | | 0,82 | 9,35 | 8,21 | 4,26 | 4,10 |
| 4 | PLM100HM../340 E3 | 100 | | | | 0,87 | 10,0 | 10,9 | 2,43 | 4,53 |
| 5,5 | PLM112HM../355 E3 | 112 | 0,88 | 12,0 | 15,0 | 4,70 | 5,55 | | | |

| P _N kW | Voltage U _N V | | | | | | | | η_N min ⁻¹ | Operating conditions ** | | |
|----------------------|-----------------------------|-------|-------|-------|----------|-------|-------|-------|-------------------------------|------------------------------------|-------------------------|--|
| | Δ | | Y | | Δ | | Y | | | Altitude Above Sea Level (m) | T. amb min/max °C | |
| | 220 V | 230 V | 380 V | 400 V | 380 V | 400 V | 660 V | 690 V | | | | |
| | I _N (A) | | | | | | | | | | | |
| 0,30 | 1,42 | 1,42 | 0,82 | 0,82 | | | | | 3275 ÷ 3325 | 1000 VI | -15 / 40 | |
| 0,40 | 1,75 | 1,75 | 1,01 | 1,01 | | | | | 3290 ÷ 3335 | | | |
| 0,50 | 2,15 | 2,10 | 1,24 | 1,21 | | | | | 3220 ÷ 3285 | | | |
| 0,55 | 2,27 | 2,22 | 1,31 | 1,28 | | | | | 3405 ÷ 3425 | | | |
| 0,75 | 3,03 | 3,01 | 1,75 | 1,74 | 1,75 | 1,74 | 1,01 | 1,00 | 3490 ÷ 3500 | | | |
| 1,1 | 4,24 | 4,24 | 2,45 | 2,45 | 2,44 | 2,43 | 1,41 | 1,40 | 3495 ÷ 3505 | | | |
| 1,5 | 5,58 | 5,53 | 3,22 | 3,19 | 3,23 | 3,22 | 1,86 | 1,86 | 3485 ÷ 3500 | | | |
| 2,2 | 7,97 | 7,93 | 4,60 | 4,58 | 4,59 | 4,57 | 2,65 | 2,64 | 3490 ÷ 3505 | | | |
| 3 | 10,9 | 10,8 | 6,30 | 6,23 | 6,32 | 6,29 | 3,65 | 3,63 | 3485 ÷ 3500 | | | |
| 4 | 13,4 | 13,2 | 7,76 | 7,62 | 7,78 | 7,63 | 4,49 | 4,41 | 3510 ÷ 3520 | | | |
| 5,5 | 18,2 | 18,0 | 10,5 | 10,4 | 10,5 | 10,5 | 6,08 | 6,06 | 3505 ÷ 3515 | | | |

** Operating conditions to be referred to motor only. About electric pump, refer to limits in user's manual.

1-22hm-ie3-mott-2p60-en_a_te

e-HM™ SERIES

AVAILABLE VOLTAGES FOR SM and PLM MOTORS, 2-POLE

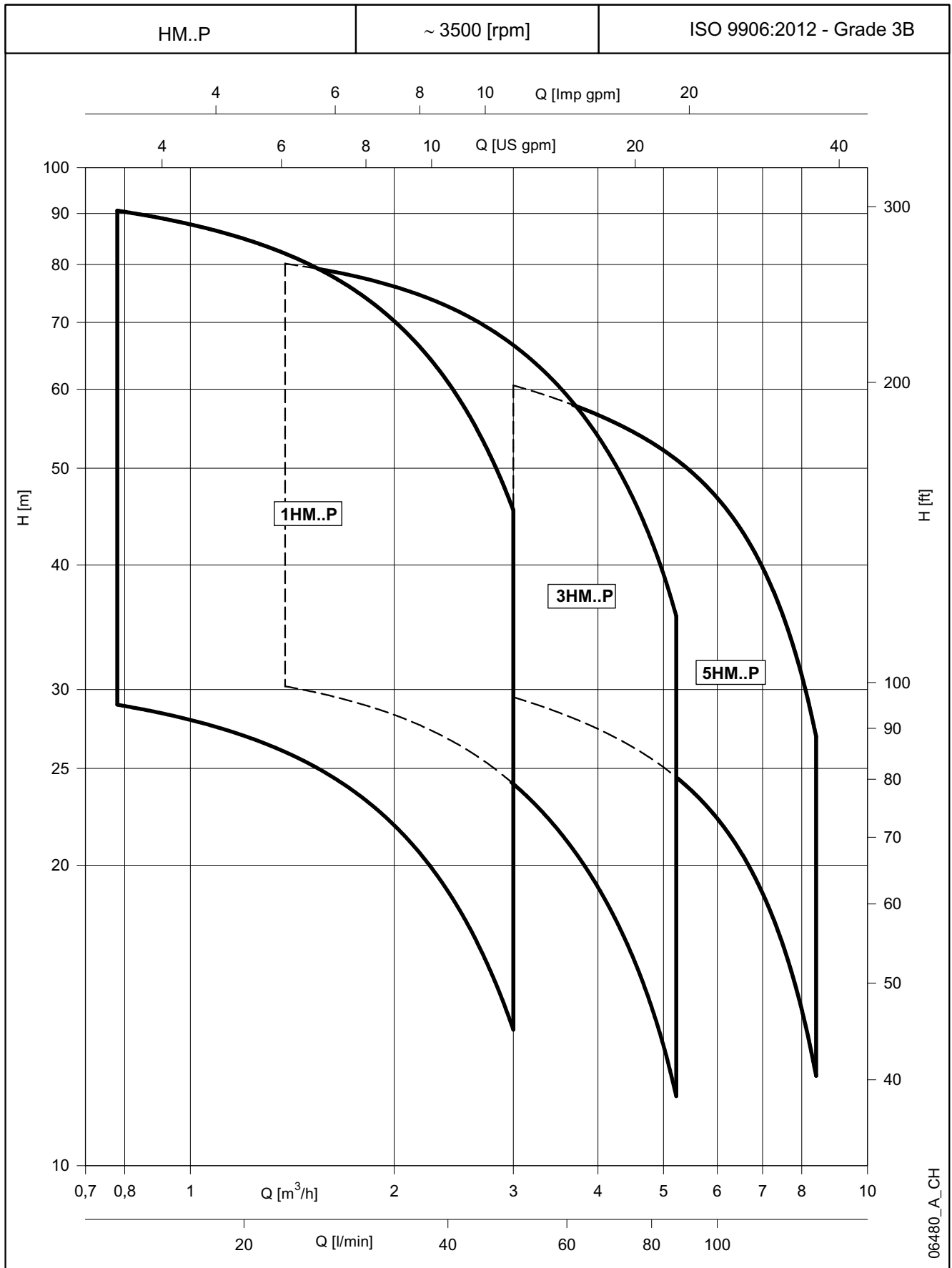
| P _N kW | SINGLE-PHASE | | | | | | | |
|----------------------|--------------|---------|-------------|-------------|---------|-------------|-------------|-------------|
| | 50 Hz | | | | 60 Hz | | | |
| | 1 x 220-240 | 1 x 100 | 1 x 110-120 | 1 x 220-230 | 1 x 100 | 1 x 110-115 | 1 x 120-127 | 1 x 200-210 |
| 0,50 | s | - | - | s | - | o | - | - |
| 0,55 | s | o | o | s | o | o | o | o |
| 0,75 | s | o | o | s | o | o | o | o |
| 0,95 | s | o | o | s | o | o | o | o |
| 1,1 | s | - | o | s | - | o | - | o |
| 1,5 | s | - | - | s | - | o | - | o |
| 2,2 | s | - | - | s | - | - | - | - |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| P _N kW | THREE-PHASE | | | | | | | | | | | | | | | | |
|----------------------|-----------------------------|-------------------------|---------------------|---------------------|---------------------|---------------|---------------|---------------------|-----------------------------|---------------------|-------------------|---------------------|---------------------|---------------------|-----------|-------------------|-------------------|
| | 50 Hz | | | | | | | | 60 Hz | | | | | | | | |
| | 3 x 220-230-240/380-400-415 | 3 x 380-400-415/660-690 | 3 x 200-208/346-360 | 3 x 255-265/440-460 | 3 x 290-300/500-525 | 3 x 440-460/- | 3 x 500-525/- | 3 x 220-230/380-400 | 3 x 255-265-277/440-460-480 | 3 x 380-400/660-690 | 3 x 440-460-480/- | 3 x 110-115/190-200 | 3 x 200-208/346-360 | 3 x 330-346/575-600 | 3 x 575/- | 3 x 230/400 50 Hz | 3 x 265/460 60 Hz |
| 0,30 | s | o | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 0,40 | s | o | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 0,50 | s | o | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 0,55 | s | o | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 0,75 | s | o | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 1,1 | s | o | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 1,5 | s | o | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 2,2 | s | o | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 3 | s | o | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 4 | o | s | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |
| 5,5 | o | s | o | o | o | o | o | s | o | o | o | o | o | o | o | o | o |

s = Standard voltage o = voltage upon request - = Not available

hm-volt-low-a-en_b_te

HM..P SERIES
HYDRAULIC PERFORMANCE RANGE AT 60 Hz, 2 POLES



HM..P SERIES

HYDRAULIC PERFORMANCE TABLE AT 60 Hz, 2 POLES

| PUMP TYPE HM..P | VERSION | MOTOR | | ELECTRIC PUMP | | | Q = DELIVERY | | | | | | | |
|---|---------|----------------------|-----------------|------------------------|------|------|---------------------|------|------|------|------|------|------|------|
| | | P _N kW | TYPE | * P ₁ kW | * I | | l/min 0 | 13,0 | 19,0 | 25,0 | 31,0 | 37,0 | 43,0 | 50,0 |
| | | | | | | | m ³ /h 0 | 0,8 | 1,1 | 1,5 | 1,9 | 2,2 | 2,6 | 3,0 |
| H = TOTAL HEAD IN METRES OF COLUMN OF WATER | | | | | | | | | | | | | | |
| 1HM02 | 1 ~ | 0,40 | SM63HM../1046 | 0,58 | 2,83 | - | 32,4 | 29,5 | 27,8 | 25,9 | 23,5 | 20,9 | 18,0 | 14,3 |
| 1HM03 | | 0,50 | SM63HM../1056 | 0,81 | 3,80 | - | 47,8 | 43,2 | 40,6 | 37,5 | 33,9 | 29,9 | 25,5 | 20,0 |
| 1HM04 | | 0,75 | SM71HM../1076 | 1,07 | 4,84 | - | 64,8 | 58,8 | 55,4 | 51,4 | 46,7 | 41,4 | 35,5 | 28,1 |
| 1HM05 | | 0,95 | SM71HM../1096 | 1,29 | 5,81 | - | 80,7 | 73,1 | 68,9 | 63,9 | 58,1 | 51,4 | 44,1 | 34,9 |
| 1HM06 | | 1,1 | SM80HM../1116 | 1,55 | 7,08 | - | 98,1 | 89,5 | 84,6 | 78,8 | 71,9 | 63,9 | 55,1 | 44,0 |
| 1HM02 | 3 ~ | 0,40 | SM63HM../304 | 0,47 | 1,64 | 0,95 | 31,8 | 28,6 | 26,9 | 24,8 | 22,5 | 19,8 | 16,9 | 13,2 |
| 1HM03 | | 0,50 | SM63HM../305 | 0,65 | 2,08 | 1,20 | 46,3 | 41,0 | 38,3 | 35,1 | 31,4 | 27,4 | 23,0 | 17,6 |
| 1HM04 | | 0,75 | SM80HM../307 E3 | 0,96 | 3,14 | 1,81 | 66,8 | 61,4 | 58,3 | 54,5 | 50,1 | 44,8 | 39,0 | 31,6 |
| 1HM05 | | 1,1 | SM80HM../311 E3 | 1,20 | 4,04 | 2,33 | 83,9 | 77,2 | 73,4 | 68,7 | 63,2 | 56,7 | 49,4 | 40,1 |
| 1HM06 | | 1,1 | SM80HM../311 E3 | 1,41 | 4,49 | 2,59 | 100 | 92,0 | 87,3 | 81,7 | 74,9 | 67,1 | 58,4 | 47,2 |

| PUMP TYPE HM..P | VERSION | MOTOR | | ELECTRIC PUMP | | | Q = DELIVERY | | | | | | | |
|---|---------|----------------------|-----------------|------------------------|------|------|---------------------|------|------|------|------|------|------|------|
| | | P _N kW | TYPE | * P ₁ kW | * I | | l/min 0 | 23,0 | 34,0 | 45,0 | 56,0 | 67,0 | 78,0 | 87,0 |
| | | | | | | | m ³ /h 0 | 1,4 | 2,0 | 2,7 | 3,4 | 4,0 | 4,7 | 5,2 |
| H = TOTAL HEAD IN METRES OF COLUMN OF WATER | | | | | | | | | | | | | | |
| 3HM02 | 1 ~ | 0,50 | SM63HM../1056 | 0,76 | 3,57 | - | 33,7 | 30,7 | 28,7 | 26,1 | 23,0 | 19,5 | 15,7 | 12,3 |
| 3HM03 | | 0,75 | SM71HM../1076 | 1,07 | 4,84 | - | 51,0 | 46,5 | 43,5 | 39,6 | 34,9 | 29,7 | 24,0 | 18,9 |
| 3HM04 | | 1,1 | SM80HM../1116 | 1,43 | 6,53 | - | 68,8 | 63,2 | 59,6 | 54,6 | 48,6 | 41,7 | 34,1 | 27,3 |
| 3HM05 | | 1,5 | SM80HM../1156 | 1,80 | 8,50 | - | 86,6 | 79,9 | 75,5 | 69,4 | 61,9 | 53,3 | 43,8 | 35,3 |
| 3HM02 | 3 ~ | 0,50 | SM63HM../305 | 0,60 | 1,96 | 1,13 | 33,0 | 29,5 | 27,2 | 24,5 | 21,3 | 17,9 | 14,1 | 10,7 |
| 3HM03 | | 1,1 | SM80HM../311 E3 | 0,99 | 3,60 | 2,08 | 52,7 | 48,9 | 46,4 | 43,0 | 38,5 | 33,4 | 27,7 | 22,6 |
| 3HM04 | | 1,1 | SM80HM../311 E3 | 1,28 | 4,19 | 2,42 | 69,9 | 64,7 | 61,3 | 56,5 | 50,6 | 43,7 | 36,1 | 29,3 |
| 3HM05 | | 1,5 | SM80HM../315 E3 | 1,56 | 5,14 | 2,97 | 87,6 | 81,1 | 76,9 | 71,0 | 63,6 | 55,0 | 45,5 | 37,0 |

| PUMP TYPE HM..P | VERSION | MOTOR | | ELECTRIC PUMP | | | Q = DELIVERY | | | | | | | |
|---|---------|----------------------|-----------------|------------------------|------|------|---------------------|------|------|------|------|-------|------|------|
| | | P _N kW | TYPE | * P ₁ kW | * I | | l/min 0 | 50,0 | 65,0 | 80,0 | 95,0 | 110,0 | 125 | 140 |
| | | | | | | | m ³ /h 0 | 3,0 | 3,9 | 4,8 | 5,7 | 6,6 | 7,5 | 8,4 |
| H = TOTAL HEAD IN METRES OF COLUMN OF WATER | | | | | | | | | | | | | | |
| 5HM02 | 1 ~ | 0,75 | SM71HM../1076 | 1,00 | 4,54 | - | 34,7 | 29,5 | 27,6 | 25,6 | 23,2 | 20,3 | 16,7 | 12,3 |
| 5HM03 | | 1,1 | SM80HM../1116 | 1,45 | 6,65 | - | 52,6 | 44,8 | 42,1 | 39,1 | 35,6 | 31,3 | 25,9 | 19,4 |
| 5HM04 | | 1,5 | SM80HM../1156 | 1,92 | 9,00 | - | 70,3 | 60,3 | 56,8 | 52,9 | 48,2 | 42,5 | 35,4 | 26,6 |
| 5HM02 | 3 ~ | 0,75 | SM80HM../307 E3 | 0,88 | 2,97 | 1,71 | 35,5 | 30,7 | 29,0 | 27,1 | 24,8 | 22,0 | 18,5 | 14,1 |
| 5HM03 | | 1,1 | SM80HM../311 E3 | 1,30 | 4,25 | 2,45 | 53,3 | 46,0 | 43,4 | 40,6 | 37,2 | 33,0 | 27,7 | 21,1 |
| 5HM04 | | 1,5 | SM80HM../315 E3 | 1,69 | 5,44 | 3,14 | 71,1 | 61,5 | 58,0 | 54,2 | 49,7 | 44,1 | 37,0 | 28,3 |

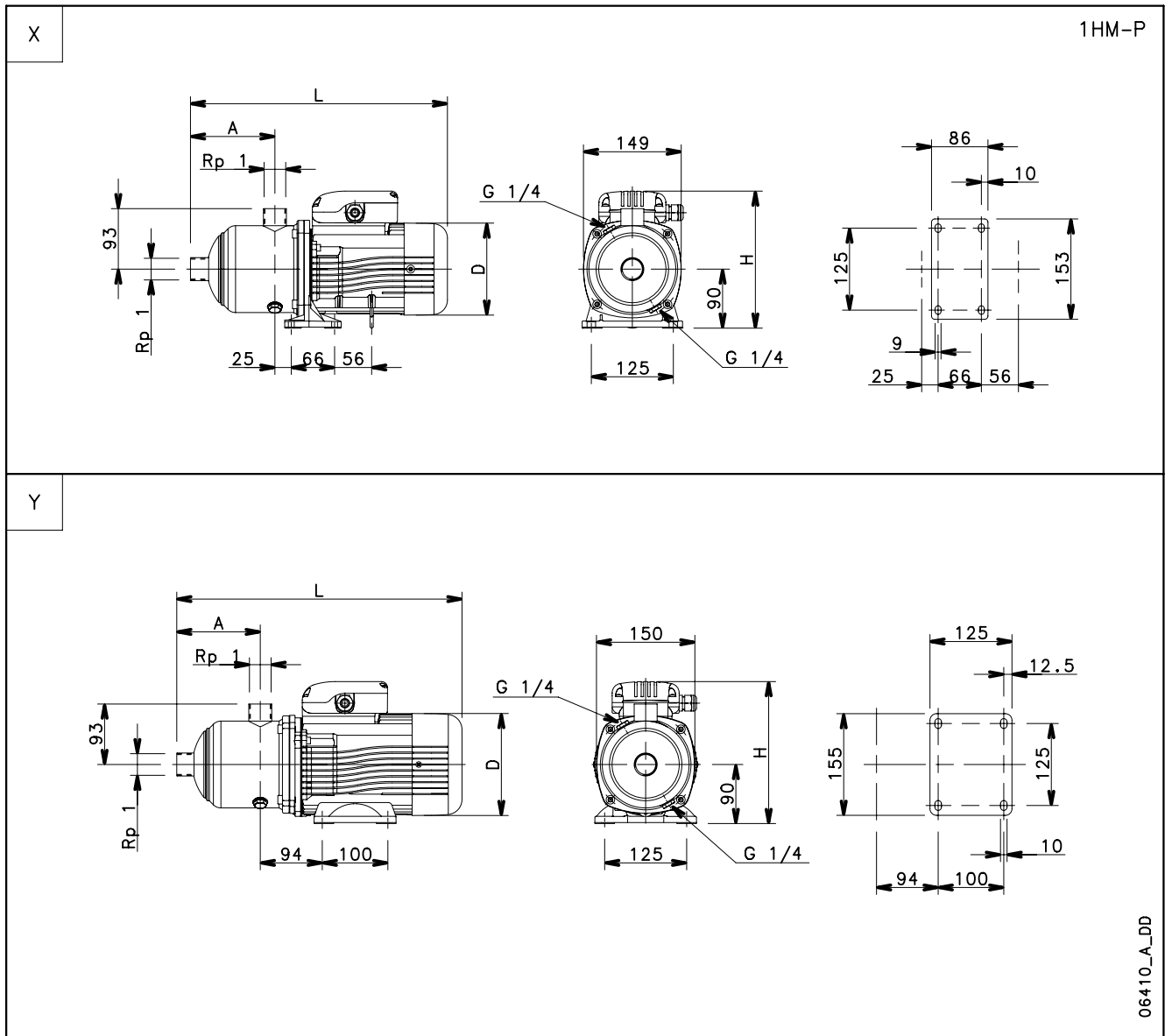
Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

1-5hm-p-2p60_a_th

* Maximum value in specified range: P₁ = input power; I = input current.

1HM..P SERIES

DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES

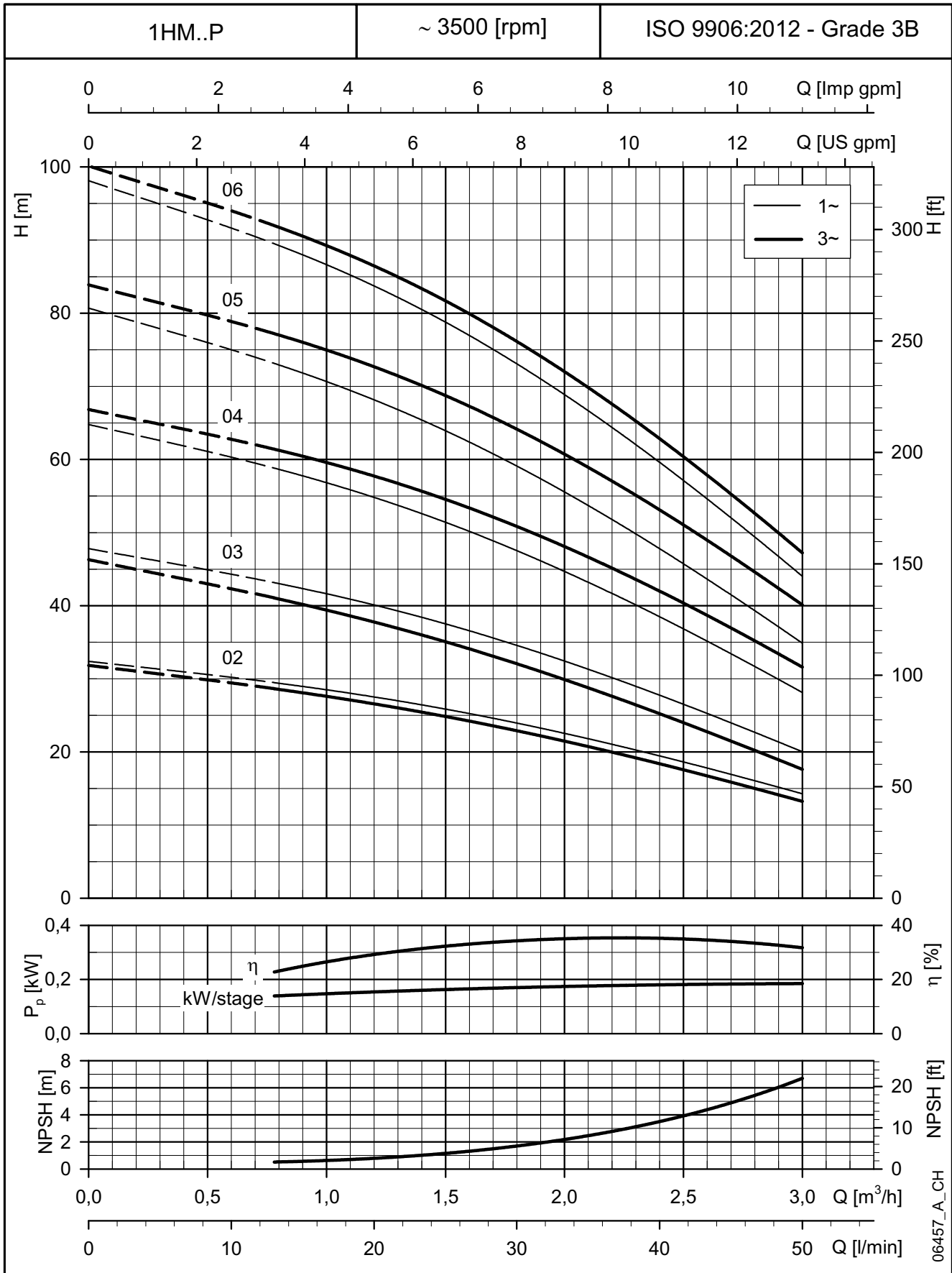


06410_A_DD

| PUMP TYPE | VERSION | Ref. | MOTOR | | DIMENSIONS (mm) | | | | PN bar | WEIGHT kg |
|-----------|--------------|------|-------|------|-----------------|-----|-----|-----|--------|-----------|
| | | | kW | SIZE | A | D | H | L | | |
| 1HM02 | SINGLE-PHASE | X | 0,40 | 63 | 87 | 120 | 201 | 336 | 10 | 7 |
| 1HM03 | | | 0,50 | 63 | 87 | 120 | 201 | 336 | 10 | 7 |
| 1HM04 | | | 0,75 | 71 | 107 | 140 | 211 | 370 | 10 | 10 |
| 1HM05 | | | 0,95 | 71 | 127 | 140 | 220 | 390 | 10 | 11 |
| 1HM06 | | Y | 1,1 | 80 | 147 | 155 | 227 | 455 | 10 | 14 |
| 1HM02 | THREE-PHASE | X | 0,40 | 63 | 87 | 120 | 201 | 336 | 10 | 7 |
| 1HM03 | | | 0,50 | 63 | 87 | 120 | 201 | 336 | 10 | 7 |
| 1HM04 | | | 0,75 | 80 | 107 | 155 | 219 | 415 | 10 | 13 |
| 1HM05 | | Y | 1,1 | 80 | 127 | 155 | 219 | 435 | 10 | 14 |
| 1HM06 | | | 1,1 | 80 | 147 | 155 | 219 | 455 | 10 | 14 |

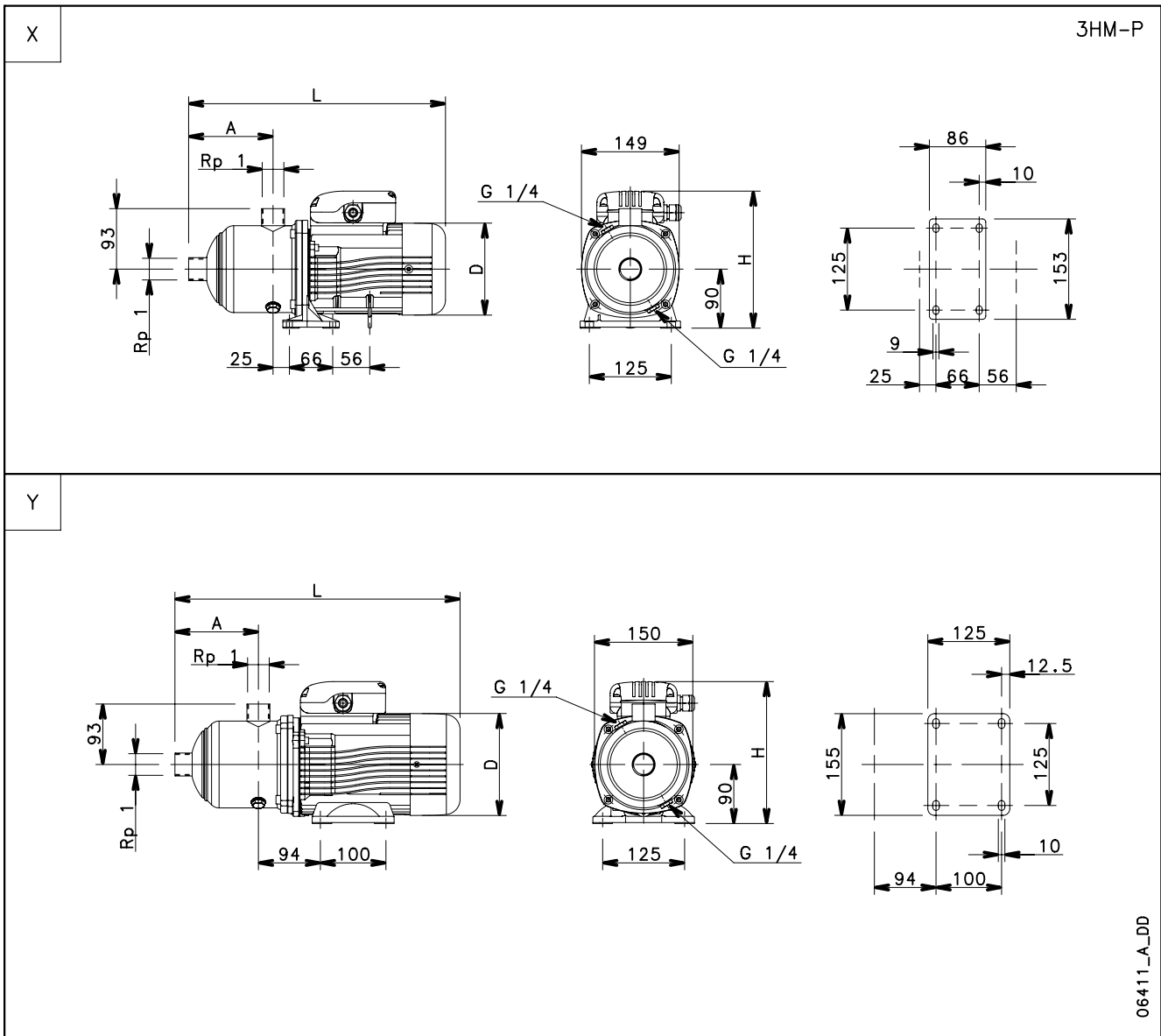
1hm-p-2p60_a_td

**1HM..P SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES**



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

3HM..P SERIES DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES

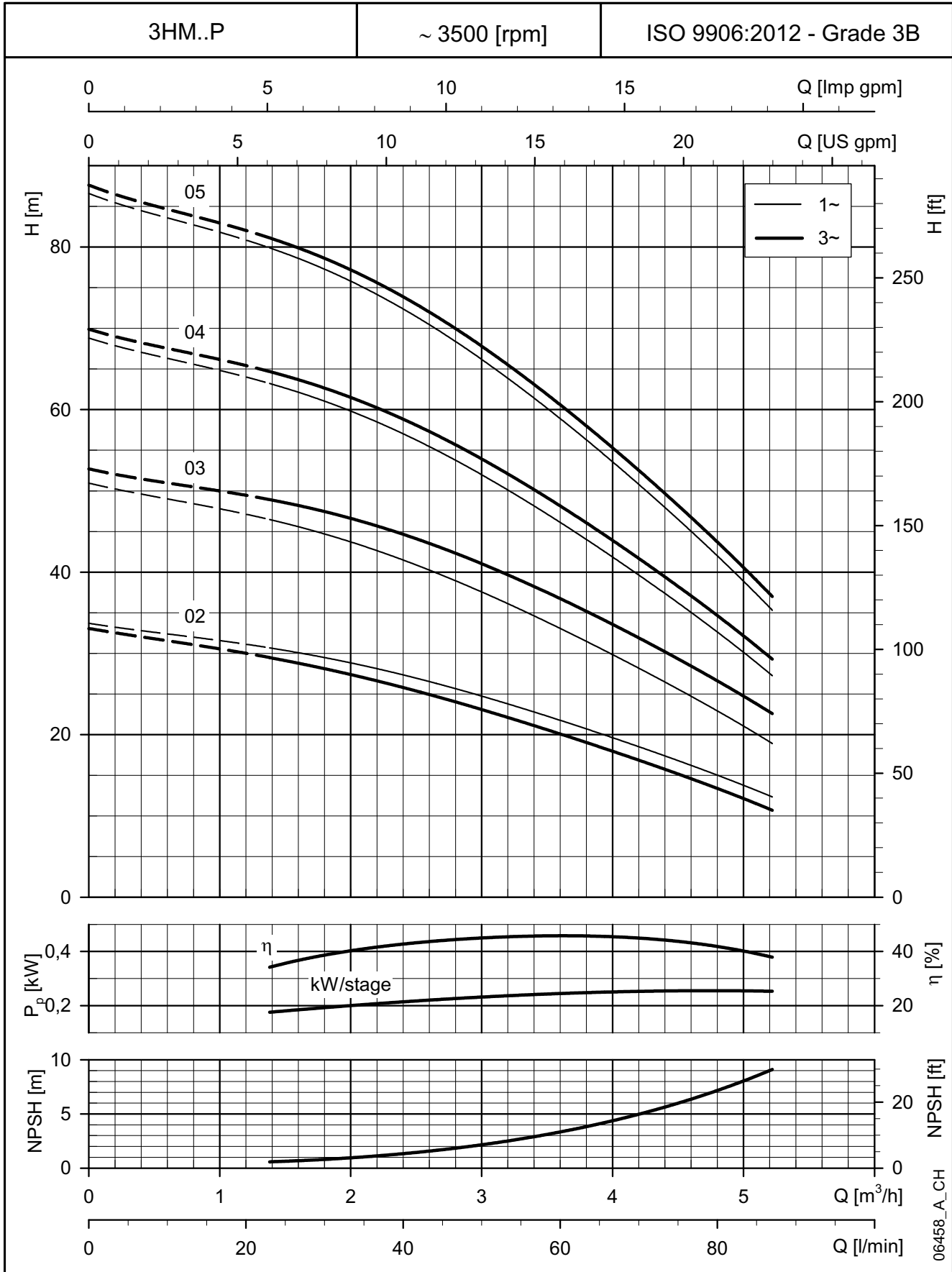


06411_A_DD

| PUMP TYPE | VERSION | Ref. | MOTOR | | DIMENSIONS (mm) | | | | PN bar | WEIGHT kg |
|-----------|--------------|------|-------|------|-----------------|-----|-----|-----|--------|-----------|
| | | | kW | SIZE | A | D | H | L | | |
| 3HM02 | SINGLE-PHASE | X | 0,50 | 63 | 87 | 120 | 201 | 336 | 10 | 7 |
| 3HM03 | | | 0,75 | 71 | 87 | 140 | 211 | 350 | 10 | 9 |
| 3HM04 | | Y | 1,1 | 80 | 107 | 155 | 227 | 415 | 10 | 14 |
| 3HM05 | | | 1,5 | 80 | 127 | 155 | 227 | 435 | 10 | 15 |
| 3HM02 | THREE-PHASE | X | 0,50 | 63 | 87 | 120 | 201 | 336 | 10 | 7 |
| 3HM03 | | | 1,1 | 80 | 87 | 155 | 219 | 395 | 10 | 13 |
| 3HM04 | | Y | 1,1 | 80 | 107 | 155 | 219 | 415 | 10 | 14 |
| 3HM05 | | | 1,5 | 80 | 127 | 155 | 219 | 435 | 10 | 15 |

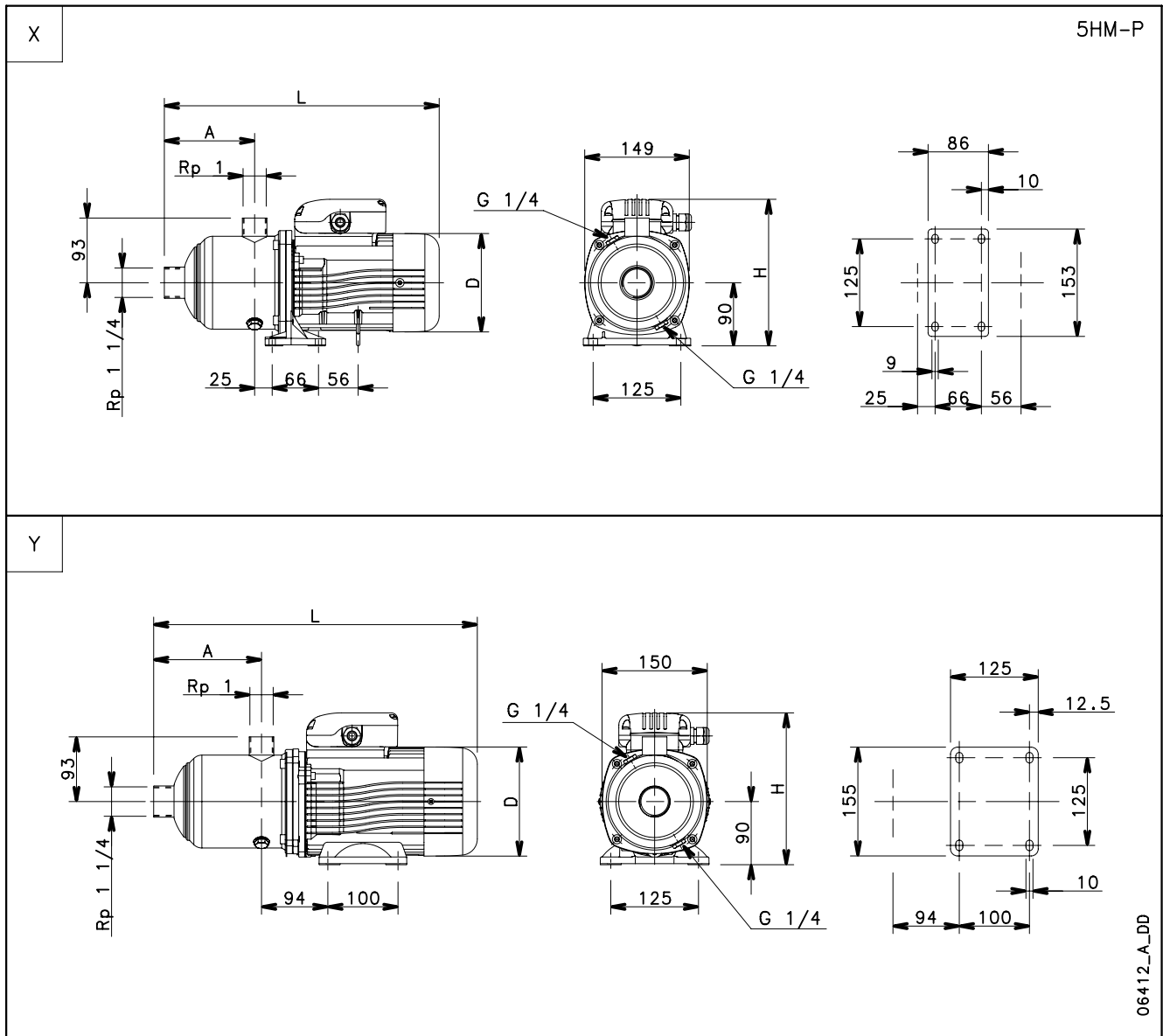
3hm-p-2p60_a_td

3HM..P SERIES
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

5HM..P SERIES DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES



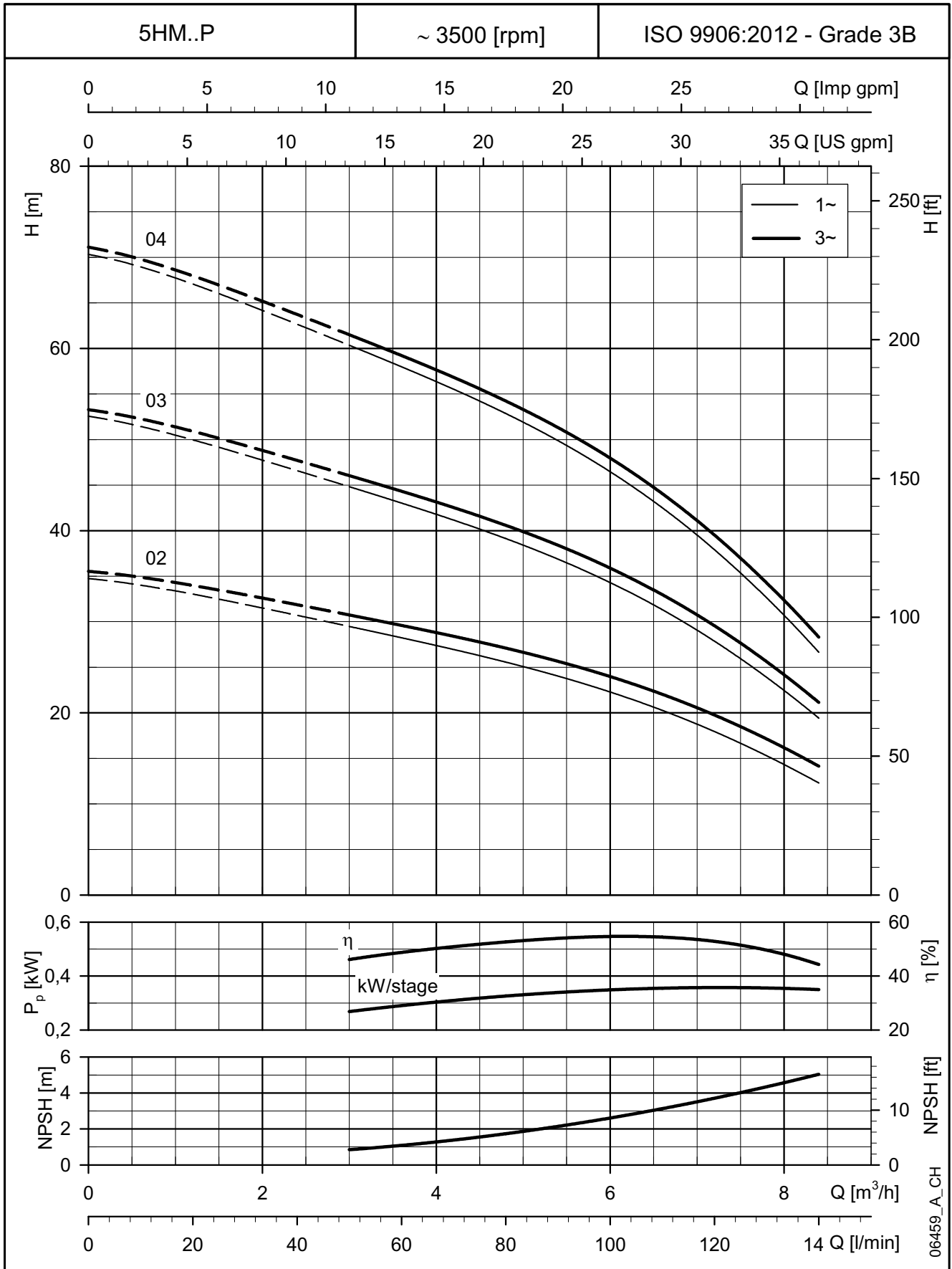
06412_A_DD

| PUMP TYPE | VERSION | Ref. | MOTOR | | DIMENSIONS (mm) | | | | PN bar | WEIGHT kg |
|-----------|--------------|------|-------|------|-----------------|-----|-----|-----|--------|-----------|
| | | | kW | SIZE | A | D | H | L | | |
| 5HM02 | SINGLE-PHASE | X | 0,75 | 71 | 89 | 140 | 211 | 352 | 10 | 9 |
| 5HM03 | | Y | 1,1 | 80 | 89 | 155 | 227 | 397 | 10 | 13 |
| 5HM04 | | Y | 1,5 | 80 | 109 | 155 | 227 | 417 | 10 | 15 |
| 5HM02 | THREE-PHASE | Y | 0,75 | 80 | 89 | 155 | 219 | 397 | 10 | 12 |
| 5HM03 | | | 1,1 | 80 | 89 | 155 | 219 | 397 | 10 | 13 |
| 5HM04 | | | 1,5 | 80 | 109 | 155 | 219 | 417 | 10 | 15 |

5hm-p-2p60_a_td

5HM..P SERIES

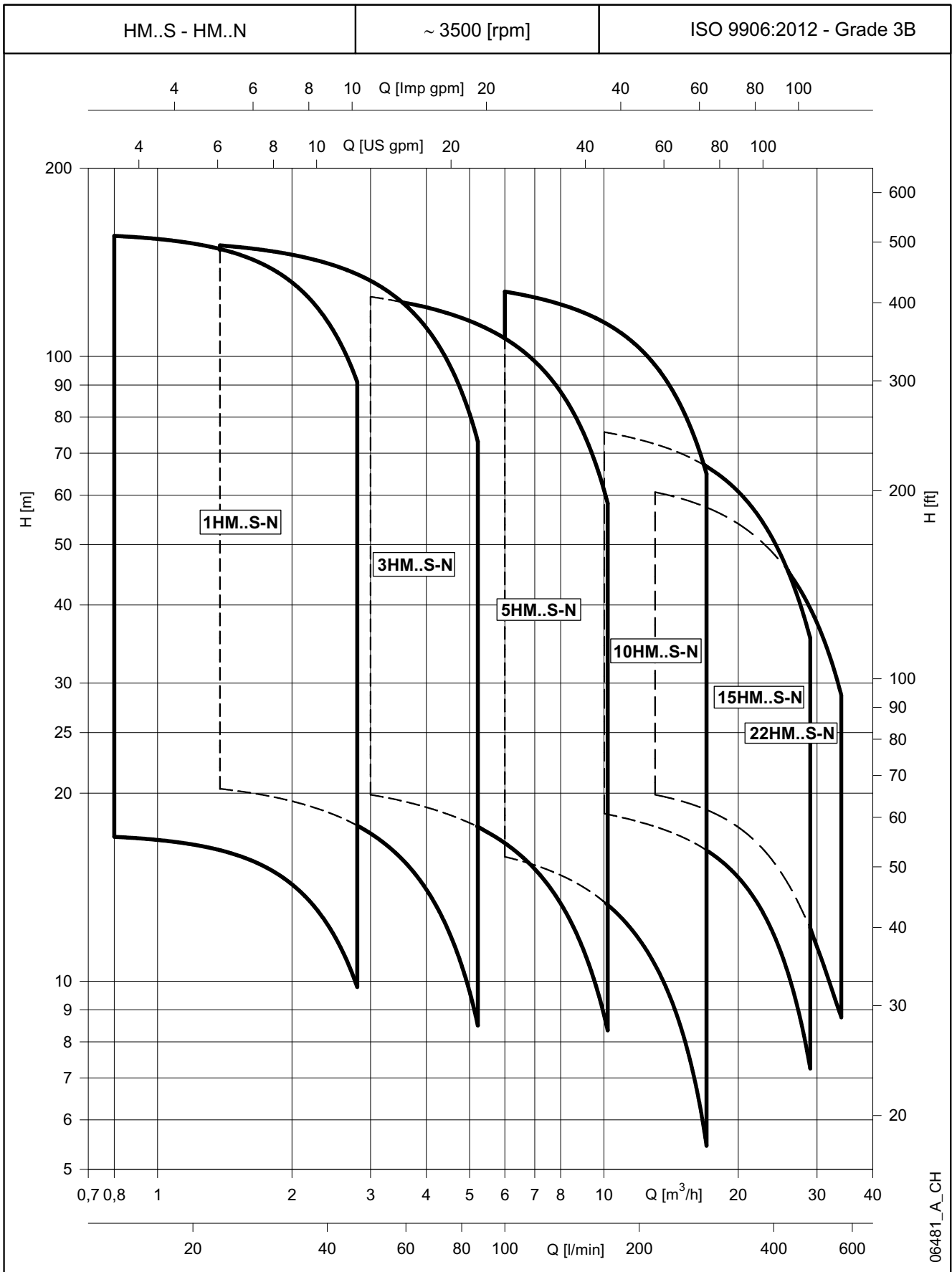
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

HM..S - HM..N SERIES

HYDRAULIC PERFORMANCE RANGE AT 60 Hz, 2 POLES



1, 3 HM..S - HM..N SERIES

HYDRAULIC PERFORMANCE TABLE AT 60 Hz, 2 POLES

| PUMP TYPE HM..S HM..N | VERSION | MOTOR | | ELECTRIC PUMP | | | Q = DELIVERY | | | | | | | | |
|---|---------|----------------------|-----------------|------------------------|----------------|-----------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| | | P _N kW | TYPE | * P ₁ kW | 220-230 V A | * I 380-400 V A | l/min 0 m ³ /h 0 | 13,3 0,8 | 19,0 1,1 | 25,0 1,5 | 31,0 1,9 | 37,0 2,2 | 43,0 2,6 | 46,7 2,8 | |
| H = TOTAL HEAD IN METRES OF COLUMN OF WATER | | | | | | | | | | | | | | | |
| 1HM02 | 1 ~ | 0,30 | SM63HM../1036 | 0,35 | 1,86 | - | 17,2 | 17,0 | 16,7 | 15,9 | 14,7 | 13,0 | 11,0 | 9,6 | |
| 1HM03 | | 0,30 | SM63HM../1036 | 0,42 | 2,06 | - | 25,5 | 25,0 | 24,4 | 23,2 | 21,3 | 18,8 | 15,7 | 13,6 | |
| 1HM04 | | 0,30 | SM63HM../1036 | 0,49 | 2,31 | - | 33,6 | 32,7 | 31,8 | 30,0 | 27,4 | 24,0 | 19,8 | 16,9 | |
| 1HM05 | | 0,40 | SM63HM../1046 | 0,58 | 2,84 | - | 42,4 | 41,6 | 40,5 | 38,4 | 35,2 | 30,9 | 25,8 | 22,2 | |
| 1HM06 | | 0,50 | SM63HM../1056 | 0,72 | 3,46 | - | 50,2 | 49,3 | 47,9 | 45,2 | 41,0 | 35,7 | 29,2 | 24,8 | |
| 1HM07 | | 0,75 | SM71HM../1076 | 0,86 | 3,96 | - | 59,6 | 59,0 | 57,6 | 54,5 | 49,9 | 43,8 | 36,4 | 31,3 | |
| 1HM08 | | 0,75 | SM71HM../1076 | 0,94 | 4,27 | - | 67,8 | 66,9 | 65,2 | 61,6 | 56,2 | 49,1 | 40,6 | 34,8 | |
| 1HM09 | | 0,75 | SM71HM../1076 | 1,02 | 4,61 | - | 76,0 | 74,7 | 72,7 | 68,5 | 62,3 | 54,2 | 44,6 | 38,0 | |
| 1HM10 | | 0,95 | SM71HM../1096 | 1,14 | 5,19 | - | 84,7 | 83,3 | 81,1 | 76,6 | 69,8 | 61,0 | 50,4 | 43,1 | |
| 1HM11 | | 0,95 | SM71HM../1096 | 1,21 | 5,49 | - | 92,8 | 91,1 | 88,5 | 83,5 | 75,9 | 66,1 | 54,3 | 46,3 | |
| 1HM12 | | 0,95 | SM71HM../1096 | 1,28 | 5,79 | - | 101 | 98,7 | 95,8 | 90,1 | 81,7 | 70,9 | 58,1 | 49,3 | |
| 1HM13 | | 1,1 | SM80HM../1116 | 1,43 | 6,59 | - | 112 | 111 | 108 | 103 | 93,6 | 82,0 | 68,1 | 58,4 | |
| 1HM15 | | 1,5 | SM80HM../1156 | 1,71 | 8,18 | - | 131 | 130 | 127 | 121 | 111 | 98 | 81,6 | 70,4 | |
| 1HM17 | | 1,5 | SM80HM../1156 | 1,87 | 8,81 | - | 148 | 147 | 143 | 136 | 124 | 109 | 91,1 | 78,4 | |
| 1HM18 | | 1,5 | SM80HM../1156 | 1,95 | 9,13 | - | 156 | 155 | 151 | 143 | 131 | 115 | 96 | 82,2 | |
| 1HM02 | | 3 ~ | 0,30 | SM63HM../303 | 0,24 | 1,13 | 0,65 | 17,1 | 16,9 | 16,5 | 15,6 | 14,2 | 12,3 | 10,1 | 8,6 |
| 1HM03 | | | 0,30 | SM63HM../303 | 0,32 | 1,25 | 0,72 | 25,2 | 24,7 | 24,0 | 22,5 | 20,3 | 17,4 | 14,0 | 11,7 |
| 1HM04 | | | 0,30 | SM63HM../303 | 0,40 | 1,39 | 0,80 | 33,0 | 32,1 | 30,9 | 28,8 | 25,7 | 21,9 | 17,3 | 14,1 |
| 1HM05 | 0,40 | | SM63HM../304 | 0,50 | 1,70 | 0,98 | 41,5 | 40,3 | 38,9 | 36,3 | 32,5 | 27,9 | 22,4 | 18,7 | |
| 1HM06 | 0,50 | | SM63HM../305 | 0,58 | 1,94 | 1,12 | 49,4 | 47,7 | 45,9 | 42,7 | 38,1 | 32,5 | 26,0 | 21,5 | |
| 1HM07 | 0,75 | | SM80HM../307 E3 | 0,72 | 2,65 | 1,53 | 61,5 | 61,1 | 59,9 | 57,1 | 52,7 | 46,9 | 39,7 | 34,7 | |
| 1HM08 | 0,75 | | SM80HM../307 E3 | 0,82 | 2,83 | 1,64 | 70,1 | 69,5 | 68,2 | 64,9 | 59,8 | 53,1 | 44,9 | 39,2 | |
| 1HM09 | 0,75 | | SM80HM../307 E3 | 0,91 | 3,03 | 1,75 | 78,6 | 77,9 | 76,3 | 72,6 | 66,9 | 59,3 | 50,0 | 43,5 | |
| 1HM10 | 1,1 | | SM80HM../311 E3 | 1,03 | 3,70 | 2,14 | 87,8 | 87,3 | 85,6 | 81,6 | 75,3 | 67,0 | 56,8 | 49,6 | |
| 1HM11 | 1,1 | | SM80HM../311 E3 | 1,13 | 3,89 | 2,24 | 96,4 | 95,7 | 93,9 | 89,5 | 82,5 | 73,3 | 62,1 | 54,1 | |
| 1HM12 | 1,1 | | SM80HM../311 E3 | 1,22 | 4,08 | 2,35 | 105 | 104 | 102 | 97,2 | 89,6 | 79,5 | 67,3 | 58,5 | |
| 1HM13 | 1,1 | | SM80HM../311 E3 | 1,31 | 4,27 | 2,47 | 114 | 113 | 110 | 105 | 96,6 | 85,7 | 72,4 | 62,9 | |
| 1HM15 | 1,5 | | SM80HM../315 E3 | 1,45 | 4,94 | 2,85 | 131 | 131 | 128 | 122 | 112 | 99 | 83,3 | 72,2 | |
| 1HM17 | 1,5 | | SM80HM../315 E3 | 1,63 | 5,31 | 3,06 | 149 | 148 | 145 | 137 | 126 | 111 | 93,4 | 80,8 | |
| 1HM18 | 1,5 | | SM80HM../315 E3 | 1,72 | 5,51 | 3,18 | 157 | 156 | 153 | 145 | 133 | 117 | 98 | 85,0 | |

| PUMP TYPE HM..S HM..N | VERSION | MOTOR | | ELECTRIC PUMP | | | Q = DELIVERY | | | | | | | |
|---|---------|----------------------|------------------|------------------------|----------------|-----------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | P _N kW | TYPE | * P ₁ kW | 220-230 V A | * I 380-400 V A | l/min 0 m ³ /h 0 | 23,0 1,4 | 34,0 2,0 | 45,0 2,7 | 56,0 3,4 | 67,0 4,0 | 78,0 4,7 | 87,0 5,2 |
| H = TOTAL HEAD IN METRES OF COLUMN OF WATER | | | | | | | | | | | | | | |
| 3HM02 | 1 ~ | 0,30 | SM63HM../1036 | 0,47 | 2,25 | - | 21,1 | 20,7 | 19,8 | 18,5 | 16,8 | 14,6 | 11,8 | 9,1 |
| 3HM03 | | 0,40 | SM63HM../1046 | 0,63 | 3,01 | - | 31,7 | 31,1 | 29,8 | 27,8 | 25,2 | 21,9 | 17,7 | 13,7 |
| 3HM04 | | 0,50 | SM63HM../1056 | 0,82 | 3,83 | - | 42,0 | 41,1 | 39,1 | 36,4 | 32,8 | 28,3 | 22,7 | 17,4 |
| 3HM05 | | 0,75 | SM71HM../1076 | 1,03 | 4,67 | - | 53,3 | 52,5 | 50,3 | 47,1 | 42,8 | 37,3 | 30,4 | 23,7 |
| 3HM06 | | 0,95 | SM71HM../1096 | 1,21 | 5,49 | - | 64,0 | 62,9 | 60,3 | 56,5 | 51,4 | 44,8 | 36,5 | 28,5 |
| 3HM07 | | 0,95 | SM71HM../1096 | 1,35 | 6,04 | - | 74,3 | 72,6 | 69,3 | 64,7 | 58,6 | 50,7 | 41,0 | 31,6 |
| 3HM08 | | 1,1 | SM80HM../1116 | 1,57 | 7,16 | - | 85,8 | 84,6 | 81,3 | 76,3 | 69,7 | 60,9 | 49,9 | 39,2 |
| 3HM09 | | 1,5 | SM80HM../1156 | 1,83 | 8,64 | - | 97,2 | 96,7 | 93,2 | 88,0 | 80,8 | 71,2 | 59,0 | 47,0 |
| 3HM10 | | 1,5 | SM80HM../1156 | 1,99 | 9,25 | - | 108 | 107 | 103 | 97,1 | 88,9 | 78,1 | 64,5 | 51,2 |
| 3HM11 | | 2,2 | PLM90HM../1226 | 2,04 | 9,70 | - | 119 | 119 | 115 | 109 | 100 | 88,6 | 73,7 | 59,1 |
| 3HM12 | | 2,2 | PLM90HM../1226 | 2,19 | 10,3 | - | 130 | 130 | 125 | 118 | 109 | 95,8 | 79,6 | 63,7 |
| 3HM13 | | 2,2 | PLM90HM../1226 | 2,34 | 10,9 | - | 141 | 140 | 135 | 127 | 117 | 103 | 85,3 | 68,1 |
| 3HM14 | | 2,2 | PLM90HM../1226 | 2,49 | 11,6 | - | 151 | 150 | 145 | 136 | 125 | 110 | 90,8 | 72,3 |
| 3HM02 | | 3 ~ | 0,30 | SM63HM../303 | 0,38 | 1,34 | 0,77 | 21,0 | 20,3 | 19,3 | 17,9 | 16,2 | 13,9 | 11,1 |
| 3HM03 | 0,50 | | SM63HM../305 | 0,53 | 1,82 | 1,05 | 31,6 | 30,5 | 29,0 | 26,9 | 24,3 | 20,8 | 16,7 | 12,7 |
| 3HM04 | 0,50 | | SM63HM../305 | 0,66 | 2,10 | 1,21 | 41,4 | 39,4 | 37,1 | 34,1 | 30,3 | 25,6 | 20,0 | 14,7 |
| 3HM05 | 0,75 | | SM80HM../307 E3 | 0,92 | 3,03 | 1,75 | 54,5 | 54,3 | 52,5 | 49,6 | 45,7 | 40,4 | 33,7 | 27,1 |
| 3HM06 | 1,1 | | SM80HM../311 E3 | 1,11 | 3,84 | 2,22 | 65,5 | 65,5 | 63,4 | 60,1 | 55,4 | 49,2 | 41,1 | 33,2 |
| 3HM07 | 1,1 | | SM80HM../311 E3 | 1,27 | 4,18 | 2,41 | 76,3 | 76,1 | 73,5 | 69,6 | 64,2 | 56,8 | 47,4 | 38,1 |
| 3HM08 | 1,5 | | SM80HM../315 E3 | 1,43 | 4,88 | 2,82 | 87,4 | 87,4 | 84,6 | 80,3 | 74,1 | 65,8 | 55,0 | 44,5 |
| 3HM09 | 1,5 | | SM80HM../315 E3 | 1,60 | 5,23 | 3,02 | 98,2 | 98,1 | 94,8 | 89,8 | 82,8 | 73,4 | 61,3 | 49,4 |
| 3HM10 | 1,5 | | SM80HM../315 E3 | 1,76 | 5,59 | 3,23 | 109 | 109 | 105 | 99,3 | 91,5 | 80,9 | 67,4 | 54,2 |
| 3HM11 | 2,2 | | PLM90HM../322 E3 | 1,96 | 6,73 | 3,89 | 120 | 121 | 117 | 111 | 102 | 91,0 | 76,2 | 61,7 |
| 3HM12 | 2,2 | | PLM90HM../322 E3 | 2,12 | 7,07 | 4,08 | 131 | 131 | 127 | 120 | 111 | 98,7 | 82,7 | 66,8 |
| 3HM13 | 2,2 | | PLM90HM../322 E3 | 2,28 | 7,41 | 4,28 | 142 | 142 | 137 | 130 | 120 | 106 | 89,0 | 71,8 |
| 3HM14 | 2,2 | | PLM90HM../322 E3 | 2,44 | 7,78 | 4,49 | 153 | 152 | 147 | 140 | 129 | 114 | 95,2 | 76,7 |

Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

1-3hm-s-n-2p60_a.th

* Maximum value in specified range: P₁ = input power; I = input current.

5 HM..S - HM..N SERIES

HYDRAULIC PERFORMANCE TABLE AT 60 Hz, 2 POLES

| PUMP TYPE HM..S HM..N | VERSION | MOTOR | | ELECTRIC PUMP | | | Q = DELIVERY | | | | | | | |
|---|---------|----------------------|------------------|------------------------|----------------|----------------|--------------------------------|-------------|-------------|-------------|--------------|------------|------------|-------------|
| | | P _N kW | TYPE | * P ₁ kW | * I | | l/min 0 m ³ /h 0 | 50,0 3,0 | 70,0 4,2 | 90,0 5,4 | 110,0 6,6 | 130 7,8 | 150 9,0 | 170 10,2 |
| | | | | | 220-230 V A | 380-400 V A | | | | | | | | |
| H = TOTAL HEAD IN METRES OF COLUMN OF WATER | | | | | | | | | | | | | | |
| 5HM02 | 1 ~ | 0,50 | SM63HM../1056 | 0,73 | 3,50 | - | 21,3 | 20,1 | 19,1 | 17,8 | 16,2 | 14,1 | 11,6 | 8,8 |
| 5HM03 | | 0,75 | SM71HM../1076 | 1,04 | 4,69 | - | 32,2 | 30,5 | 29,0 | 27,0 | 24,5 | 21,5 | 17,8 | 13,5 |
| 5HM04 | | 0,95 | SM71HM../1096 | 1,31 | 5,88 | - | 42,8 | 40,3 | 38,2 | 35,5 | 32,2 | 28,1 | 23,1 | 17,4 |
| 5HM05 | | 1,1 | SM80HM../1116 | 1,63 | 7,42 | - | 54,0 | 51,1 | 48,6 | 45,4 | 41,3 | 36,3 | 30,1 | 22,9 |
| 5HM06 | | 1,5 | SM80HM../1156 | 2,00 | 9,29 | - | 65,0 | 62,3 | 59,4 | 55,7 | 51,0 | 45,0 | 37,7 | 29,1 |
| 5HM07 | | 2,2 | PLM90HM../1226 | 2,16 | 10,2 | - | 76,3 | 73,4 | 70,2 | 66,0 | 60,6 | 53,8 | 45,4 | 35,3 |
| 5HM08 | | 2,2 | PLM90HM../1226 | 2,41 | 11,2 | - | 87,1 | 83,4 | 79,7 | 74,8 | 68,5 | 60,7 | 51,0 | 39,5 |
| 5HM09 | | 2,2 | PLM90HM../1226 | 2,66 | 12,3 | - | 97,7 | 93,4 | 89,0 | 83,3 | 76,2 | 67,3 | 56,3 | 43,4 |
| | | | | | | | | | | | | | | |
| 5HM02 | 3 ~ | 0,50 | SM63HM../305 | 0,58 | 1,93 | 1,11 | 21,2 | 19,5 | 18,3 | 16,8 | 15,1 | 13,0 | 10,5 | 7,6 |
| 5HM03 | | 0,75 | SM80HM../307 E3 | 0,92 | 3,05 | 1,76 | 32,8 | 31,6 | 30,3 | 28,5 | 26,2 | 23,3 | 19,7 | 15,4 |
| 5HM04 | | 1,1 | SM80HM../311 E3 | 1,22 | 4,08 | 2,35 | 43,8 | 42,3 | 40,5 | 38,1 | 35,1 | 31,3 | 26,5 | 20,8 |
| 5HM05 | | 1,5 | SM80HM../315 E3 | 1,50 | 5,01 | 2,89 | 54,9 | 53,0 | 50,8 | 47,9 | 44,2 | 39,4 | 33,4 | 26,2 |
| 5HM06 | | 1,5 | SM80HM../315 E3 | 1,77 | 5,63 | 3,25 | 65,7 | 63,2 | 60,5 | 57,0 | 52,4 | 46,6 | 39,4 | 30,8 |
| 5HM07 | | 2,2 | PLM90HM../322 E3 | 2,08 | 6,98 | 4,03 | 76,9 | 74,4 | 71,3 | 67,3 | 62,1 | 55,4 | 47,0 | 37,0 |
| 5HM08 | | 2,2 | PLM90HM../322 E3 | 2,35 | 7,57 | 4,37 | 87,7 | 84,7 | 81,1 | 76,5 | 70,5 | 62,8 | 53,2 | 41,8 |
| 5HM09 | | 2,2 | PLM90HM../322 E3 | 2,62 | 8,18 | 4,72 | 98,6 | 94,9 | 90,9 | 85,5 | 78,7 | 70,0 | 59,2 | 46,3 |
| 5HM10 | | 3 | PLM90HM../330 E3 | 2,92 | 9,73 | 5,62 | 110 | 106 | 102 | 95,7 | 88,2 | 78,6 | 66,7 | 52,4 |
| 5HM11 | | 3 | PLM90HM../330 E3 | 3,19 | 10,3 | 5,96 | 121 | 116 | 111 | 105 | 96,5 | 85,9 | 72,7 | 57,0 |
| 5HM12 | | 3 | PLM90HM../330 E3 | 3,46 | 11,0 | 6,32 | 131 | 126 | 121 | 114 | 105 | 93,1 | 78,7 | 61,5 |
| | | | | | | | | | | | | | | |

Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

5-hm-s-n-2p60_a_th

* Maximum value in specified range: P1 = input power; I = input current.

10, 15, 22 HM..S - HM..N SERIES

HYDRAULIC PERFORMANCE TABLE AT 60 Hz, 2 POLES

| PUMP TYPE HM..S HM..N | VERSION | MOTOR | | ELECTRIC PUMP | | | Q = DELIVERY | | | | | | | |
|---|---------|----------------------|-------------------|------------------------|----------------|----------------|--------------------------------|--------------|------------|------------|-------------|-------------|-------------|-------------|
| | | P _N kW | TYPE | * P ₁ kW | * I | | l/min 0 m ³ /h 0 | 100,0 6,0 | 131 7,9 | 162 9,7 | 193 11,6 | 224 13,4 | 255 15,3 | 283 17,0 |
| | | | | | 220-230 V A | 380-400 V A | | | | | | | | |
| H = TOTAL HEAD IN METRES OF COLUMN OF WATER | | | | | | | | | | | | | | |
| 10HM01 | 1 ~ | 1,1 | SM80HM../1116 | 1,03 | 5,02 | - | 17,2 | 15,9 | 15,0 | 13,8 | 12,2 | 10,3 | 8,1 | 5,6 |
| 10HM02 | | 1,5 | SM80HM../1156 | 1,75 | 8,36 | - | 33,9 | 31,5 | 29,9 | 27,9 | 25,2 | 21,9 | 17,9 | 13,8 |
| 10HM03 | | 2,2 | PLM90HM../1226 | 2,24 | 10,5 | - | 51,2 | 47,4 | 45,3 | 42,7 | 39,2 | 34,9 | 29,5 | 23,9 |
| 10HM01 | 3 ~ | 0,75 | SM80HM../307 E3 | 0,79 | 2,77 | 1,60 | 17,2 | 16,0 | 15,1 | 13,9 | 12,3 | 10,4 | 8,2 | 5,8 |
| 10HM02 | | 1,5 | SM80HM../315 E3 | 1,51 | 4,69 | 2,71 | 34,1 | 31,6 | 30,0 | 28,0 | 25,3 | 22,0 | 18,0 | 13,9 |
| 10HM03 | | 2,2 | PLM90HM../322 E3 | 2,17 | 7,19 | 4,15 | 51,6 | 48,1 | 46,2 | 43,7 | 40,3 | 36,0 | 30,7 | 25,1 |
| 10HM04 | | 3 | PLM90HM../330 E3 | 2,86 | 9,62 | 5,56 | 68,8 | 64,1 | 61,5 | 58,1 | 53,7 | 47,9 | 40,9 | 33,4 |
| 10HM05 | | 4 | PLM100HM../340 E3 | 3,56 | 11,3 | 6,50 | 86,4 | 80,8 | 77,6 | 73,4 | 67,9 | 60,8 | 52,0 | 42,6 |
| 10HM06 | | 4 | PLM100HM../340 E3 | 4,22 | 12,9 | 7,45 | 103 | 96,4 | 92,5 | 87,4 | 80,7 | 72,1 | 61,5 | 50,3 |
| 10HM07 | | 5,5 | PLM112HM../355 E3 | 5,00 | 15,7 | 9,04 | 121 | 113 | 108 | 103 | 94,8 | 84,9 | 72,5 | 59,4 |
| 10HM08 | | 5,5 | PLM112HM../355 E3 | 5,65 | 17,1 | 9,87 | 138 | 128 | 123 | 117 | 108 | 96,2 | 82,1 | 67,1 |

| PUMP TYPE HM..S HM..N | VERSION | MOTOR | | ELECTRIC PUMP | | | Q = DELIVERY | | | | | | | |
|---|---------|----------------------|-------------------|------------------------|----------------|----------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | P _N kW | TYPE | * P ₁ kW | * I | | l/min 0 m ³ /h 0 | 167 10,0 | 220 13,2 | 273 16,4 | 326 19,6 | 379 22,7 | 432 25,9 | 483 29,0 |
| | | | | | 220-230 V A | 380-400 V A | | | | | | | | |
| H = TOTAL HEAD IN METRES OF COLUMN OF WATER | | | | | | | | | | | | | | |
| 15HM01 | 1 ~ | 1,5 | SM80HM../1156 | 1,76 | 8,39 | - | 20,4 | 18,5 | 17,6 | 16,4 | 14,9 | 12,8 | 10,2 | 7,2 |
| 15HM01 | 3 ~ | 1,5 | SM80HM../315 E3 | 1,52 | 5,07 | 2,93 | 20,6 | 18,8 | 17,9 | 16,7 | 15,2 | 13,2 | 10,6 | 7,6 |
| 15HM02 | | 3 | PLM90HM../330 E3 | 2,80 | 9,48 | 5,47 | 41,9 | 38,4 | 36,9 | 34,9 | 32,1 | 28,4 | 23,4 | 17,7 |
| 15HM03 | | 4 | PLM100HM../340 E3 | 4,38 | 13,2 | 7,65 | 63,1 | 57,4 | 54,9 | 51,6 | 47,2 | 41,6 | 34,8 | 27,5 |
| 15HM04 | | 5,5 | PLM112HM../355 E3 | 5,86 | 17,5 | 10,1 | 84,1 | 76,6 | 73,2 | 68,8 | 63,0 | 55,5 | 46,4 | 36,7 |

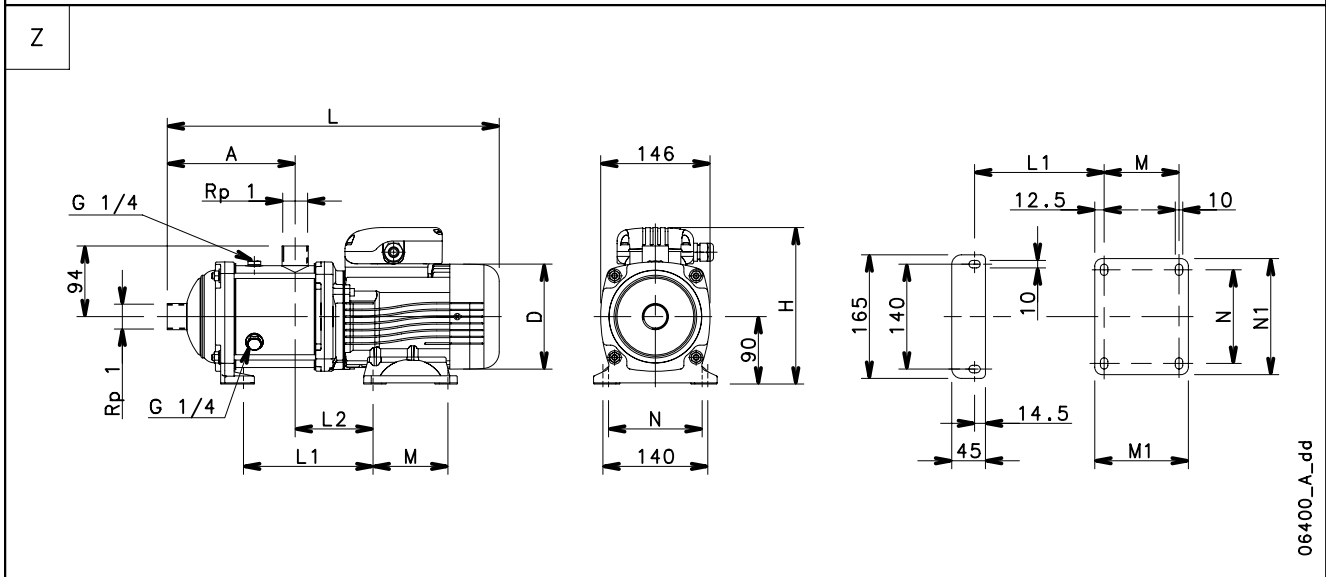
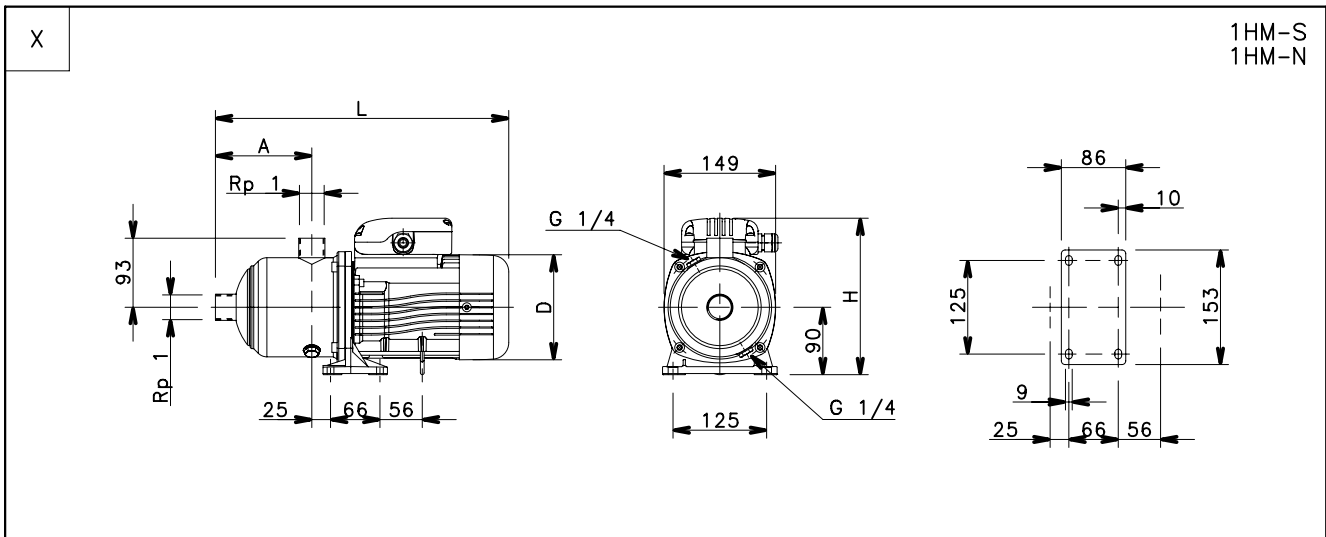
| PUMP TYPE HM..S HM..N | VERSION | MOTOR | | ELECTRIC PUMP | | | Q = DELIVERY | | | | | | | |
|---|---------|----------------------|-------------------|------------------------|----------------|----------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | P _N kW | TYPE | * P ₁ kW | * I | | l/min 0 m ³ /h 0 | 217 13,0 | 275 16,5 | 333 20,0 | 391 23,5 | 449 26,9 | 507 30,4 | 567 34,0 |
| | | | | | 220-230 V A | 380-400 V A | | | | | | | | |
| H = TOTAL HEAD IN METRES OF COLUMN OF WATER | | | | | | | | | | | | | | |
| 22HM01 | 1 ~ | 2,2 | PLM90HM../1226 | 2,19 | 10,9 | - | 21,4 | 19,8 | 18,9 | 17,6 | 15,8 | 13,5 | 11,0 | 8,7 |
| 22HM01 | 3 ~ | 2,2 | PLM90HM../322 E3 | 2,11 | 7,17 | 4,14 | 21,6 | 20,1 | 19,2 | 18,0 | 16,2 | 14,0 | 11,4 | 9,0 |
| 22HM02 | | 4 | PLM100HM../340 E3 | 4,04 | 12,4 | 7,19 | 43,9 | 41,2 | 39,6 | 37,4 | 34,4 | 30,2 | 24,9 | 18,1 |
| 22HM03 | | 5,5 | PLM112HM../355 E3 | 5,76 | 17,2 | 9,95 | 66,6 | 61,3 | 58,6 | 54,9 | 50,1 | 44,4 | 37,7 | 29,7 |

Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

10-22hm-s-n-2p60_a_th

* Maximum value in specified range: P₁ = input power; I = input current.

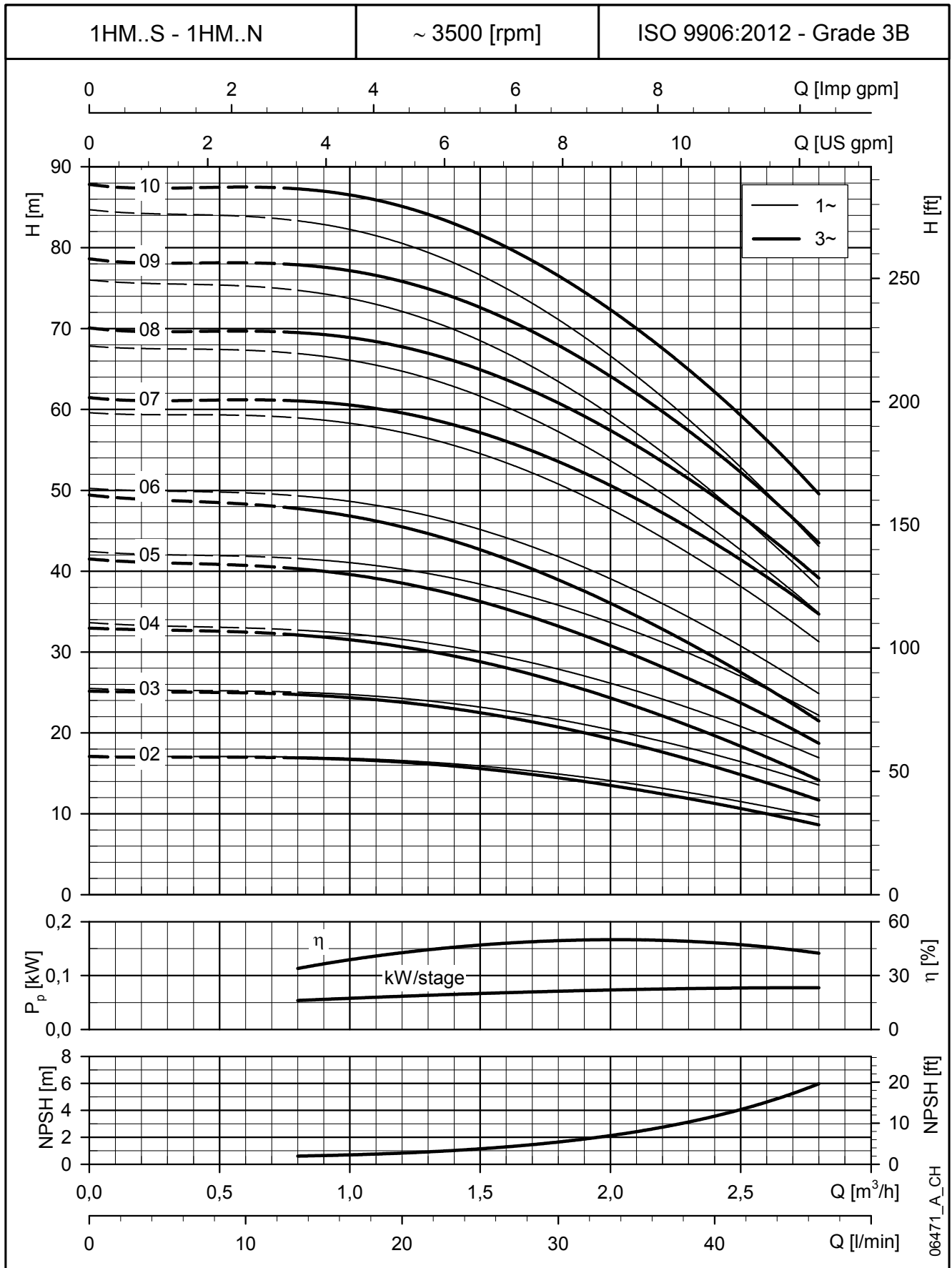
1HM..S - 1HM..N SERIES, (2 TO 10 STAGES) DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES



| PUMP TYPE | VERSION | Ref. | MOTOR | | DIMENSIONS (mm) | | | | | | | | | PN | WEIGHT | |
|-----------|--------------|------|-------|------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|----|
| | | | kW | SIZE | A | D | H | L | L1 | L2 | M | M1 | N | | | N1 |
| 1HM02 | SINGLE-PHASE | X | 0,30 | 63 | 87 | 120 | 201 | 336 | - | - | - | - | - | - | 10 | 6 |
| 1HM03 | | | 0,30 | 63 | 87 | 120 | 201 | 336 | - | - | - | - | - | - | 10 | 6 |
| 1HM04 | | | 0,30 | 63 | 107 | 120 | 201 | 356 | - | - | - | - | - | - | 10 | 7 |
| 1HM05 | | | 0,40 | 63 | 127 | 120 | 201 | 376 | - | - | - | - | - | - | 10 | 7 |
| 1HM06 | | | 0,50 | 63 | 147 | 120 | 201 | 396 | - | - | - | - | - | - | 10 | 8 |
| 1HM07 | | Z | 0,75 | 71 | 151 | 140 | 211 | 424 | 153 | 104 | 100 | 125 | 125 | 155 | 10 | 11 |
| 1HM08 | | | 0,75 | 71 | 171 | 140 | 211 | 444 | 173 | 104 | 100 | 125 | 125 | 155 | 10 | 12 |
| 1HM09 | | | 0,75 | 71 | 191 | 140 | 211 | 464 | 193 | 104 | 100 | 125 | 125 | 155 | 10 | 12 |
| 1HM10 | | | 0,95 | 71 | 211 | 140 | 220 | 484 | 213 | 104 | 100 | 125 | 125 | 155 | 10 | 13 |

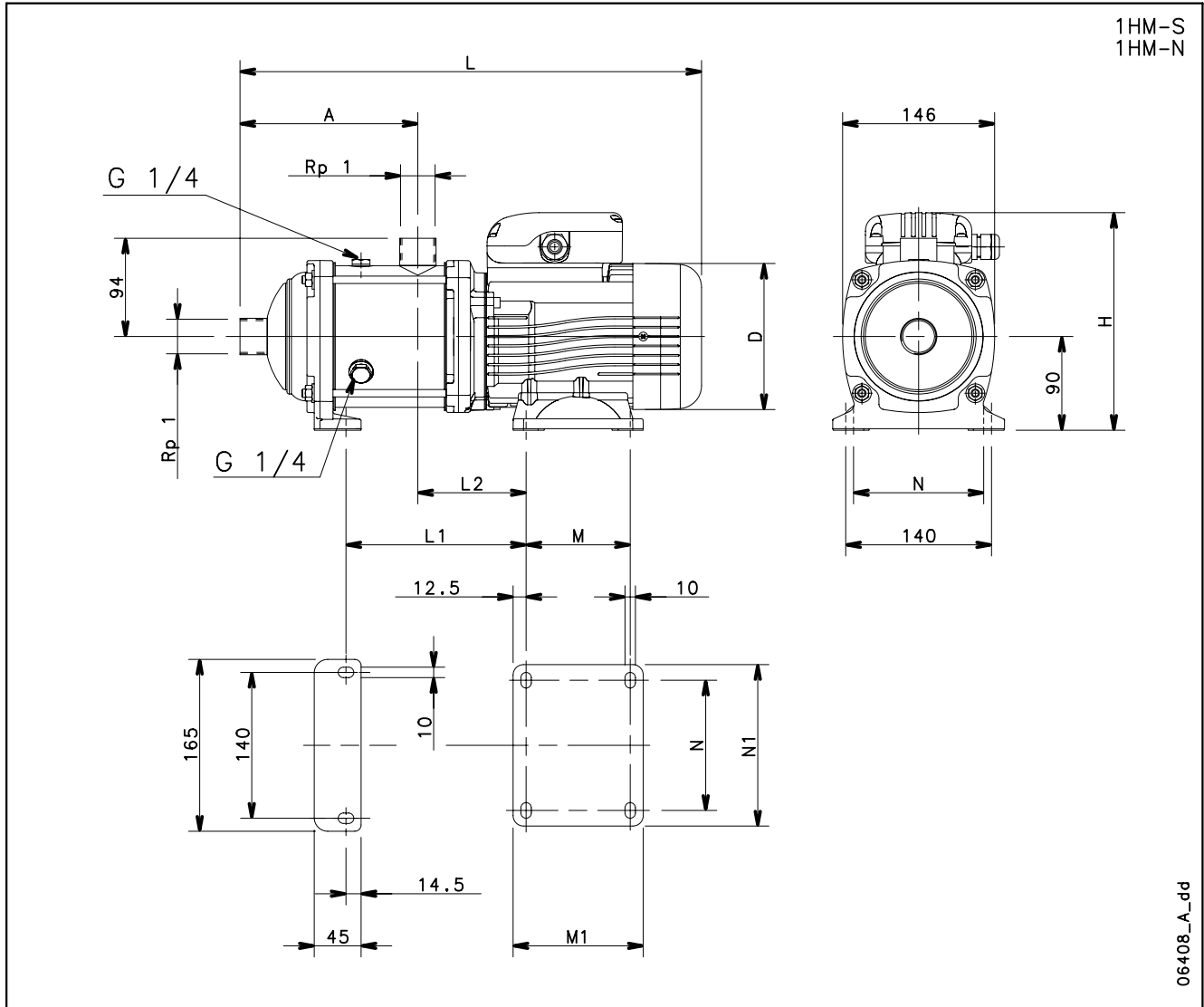
| | | | | | | | | | | | | | | | | |
|-------|-------------|---|------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|
| 1HM02 | THREE-PHASE | X | 0,30 | 63 | 87 | 120 | 201 | 336 | - | - | - | - | - | - | 10 | 6 |
| 1HM03 | | | 0,30 | 63 | 87 | 120 | 201 | 336 | - | - | - | - | - | - | 10 | 6 |
| 1HM04 | | | 0,30 | 63 | 107 | 120 | 201 | 356 | - | - | - | - | - | - | 10 | 7 |
| 1HM05 | | | 0,40 | 63 | 127 | 120 | 201 | 376 | - | - | - | - | - | - | 10 | 7 |
| 1HM06 | | | 0,50 | 63 | 147 | 120 | 201 | 396 | - | - | - | - | - | - | 10 | 8 |
| 1HM07 | | Z | 0,75 | 80 | 151 | 155 | 219 | 468 | 153 | 104 | 100 | 125 | 125 | 155 | 10 | 14 |
| 1HM08 | | | 0,75 | 80 | 171 | 155 | 219 | 488 | 173 | 104 | 100 | 125 | 125 | 155 | 10 | 15 |
| 1HM09 | | | 0,75 | 80 | 191 | 155 | 219 | 508 | 193 | 104 | 100 | 125 | 125 | 155 | 10 | 15 |
| 1HM10 | | | 1.1 | 80 | 211 | 155 | 219 | 528 | 213 | 104 | 100 | 125 | 125 | 155 | 10 | 16 |

1HM..S - 1HM..N SERIES, (2 TO 10 STAGES)
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

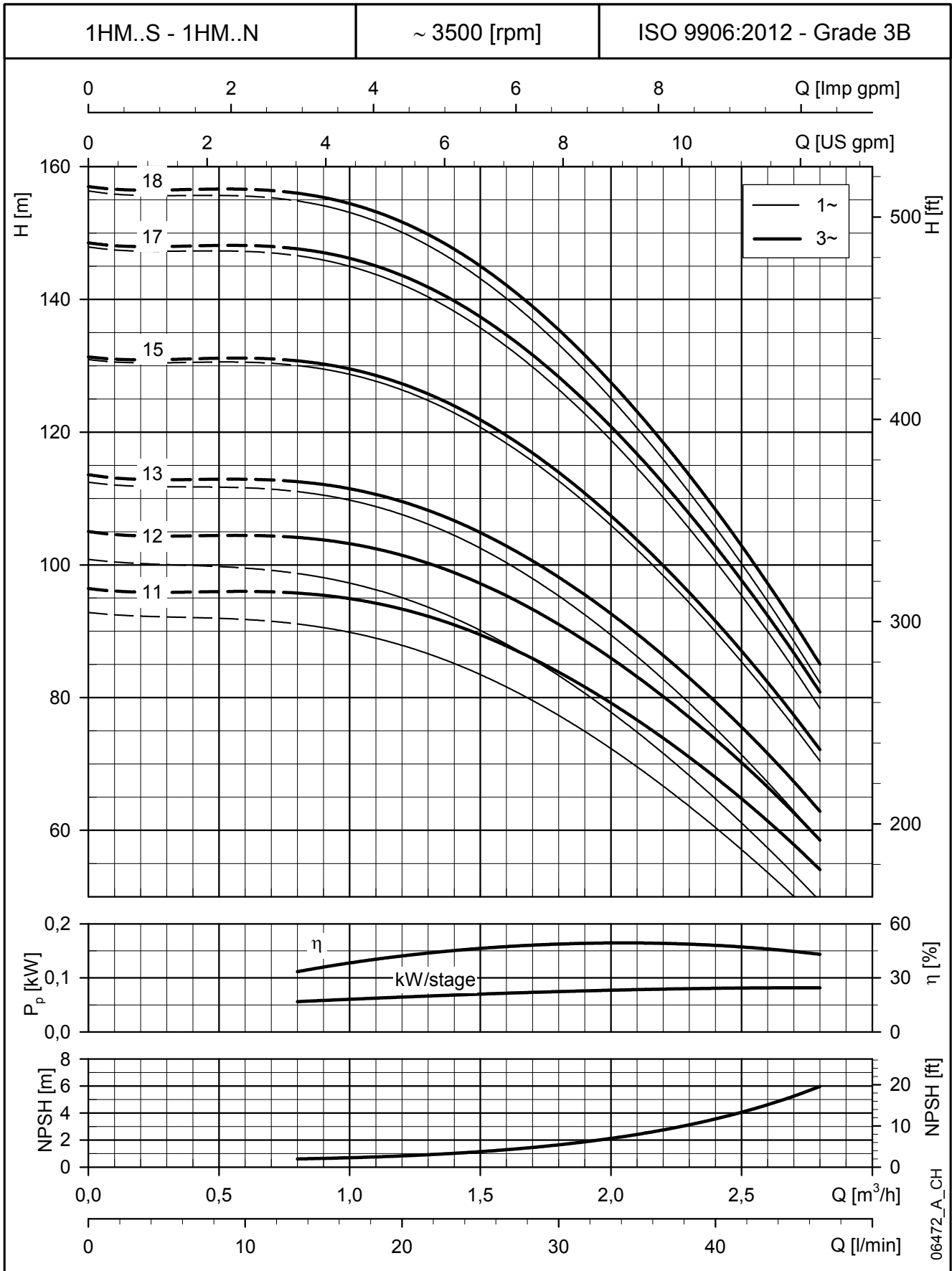
1HM..S - 1HM..N SERIES, (11 TO 18 STAGES)
DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES



| PUMP TYPE | VERSION | MOTOR | | DIMENSIONS (mm) | | | | | | | | | | PN | WEIGHT |
|-----------|--------------|-------|------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
| | | kW | SIZE | A | D | H | L | L1 | L2 | M | M1 | N | N1 | bar | kg |
| 1HM11 | SINGLE-PHASE | 0,95 | 71 | 231 | 140 | 220 | 504 | 233 | 104 | 100 | 125 | 125 | 155 | 10 | 14 |
| 1HM12 | | 0,95 | 71 | 251 | 140 | 220 | 524 | 253 | 104 | 100 | 125 | 125 | 155 | 16 | 14 |
| 1HM13 | | 1,1 | 80 | 271 | 155 | 227 | 588 | 273 | 104 | 100 | 125 | 125 | 155 | 16 | 17 |
| 1HM15 | | 1,5 | 80 | 311 | 155 | 227 | 628 | 313 | 104 | 100 | 125 | 125 | 155 | 16 | 19 |
| 1HM17 | | 1,5 | 80 | 351 | 155 | 227 | 668 | 353 | 104 | 100 | 125 | 125 | 155 | 16 | 20 |
| 1HM18 | | 1,5 | 80 | 371 | 155 | 227 | 688 | 373 | 104 | 100 | 125 | 125 | 155 | 16 | 20 |
| | | | | | | | | | | | | | | | |

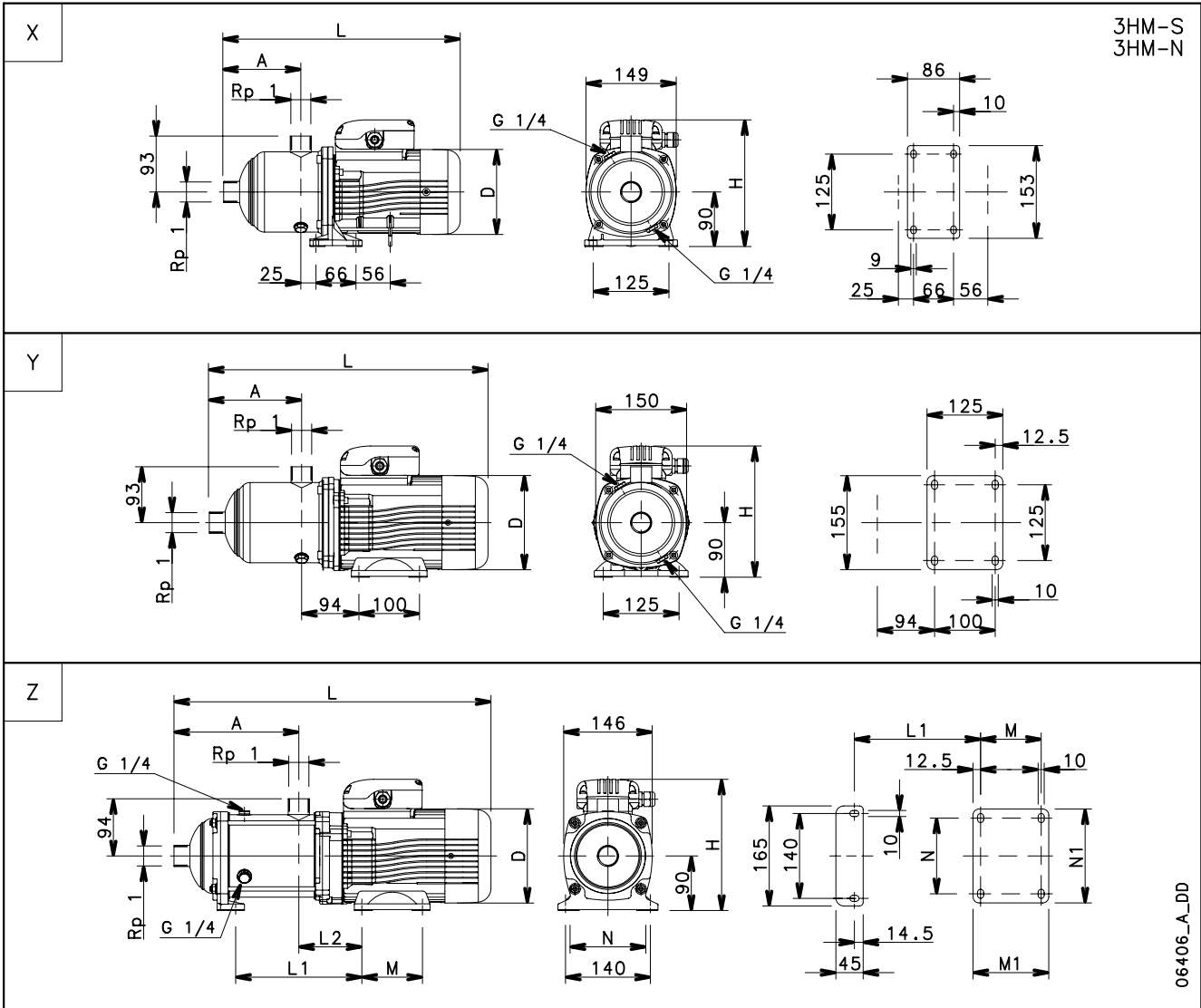
| | | | | | | | | | | | | | | | |
|-------|-------------|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|
| 1HM11 | THREE-PHASE | 1,1 | 80 | 231 | 155 | 219 | 548 | 233 | 104 | 100 | 125 | 125 | 155 | 10 | 17 |
| 1HM12 | | 1,1 | 80 | 251 | 155 | 219 | 568 | 253 | 104 | 100 | 125 | 125 | 155 | 16 | 17 |
| 1HM13 | | 1,1 | 80 | 271 | 155 | 219 | 588 | 273 | 104 | 100 | 125 | 125 | 155 | 16 | 17 |
| 1HM15 | | 1,5 | 80 | 311 | 155 | 219 | 628 | 313 | 104 | 100 | 125 | 125 | 155 | 16 | 19 |
| 1HM17 | | 1,5 | 80 | 351 | 155 | 219 | 668 | 353 | 104 | 100 | 125 | 125 | 155 | 16 | 20 |
| 1HM18 | | 1,5 | 80 | 371 | 155 | 219 | 688 | 373 | 104 | 100 | 125 | 125 | 155 | 16 | 20 |
| | | | | | | | | | | | | | | | |

1HM..S - 1HM..N SERIES, (11 TO 18 STAGES)
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

3HM..S - 3HM..N SERIES, (2 TO 8 STAGES) DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES

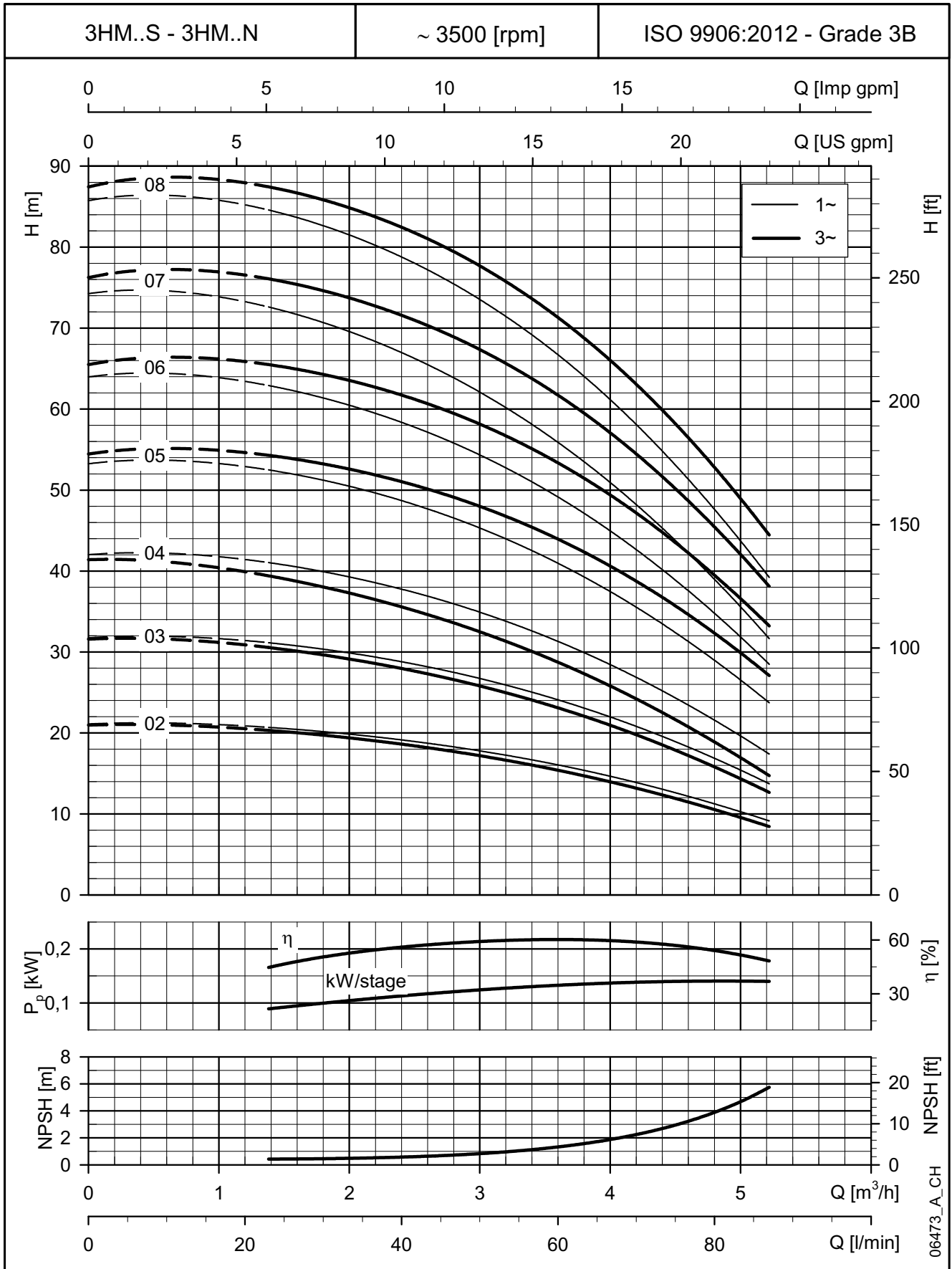


06406_A_DD

| PUMP TYPE | VERSION | Ref. | MOTOR | | DIMENSIONS (mm) | | | | | | | | | | PN | WEIGHT |
|-----------|--------------|------|-------|------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--------|
| | | | kW | SIZE | A | D | H | L | L1 | L2 | M | M1 | N | N1 | | |
| 3HM02 | SINGLE-PHASE | X | 0,30 | 63 | 87 | 120 | 201 | 336 | - | - | - | - | - | - | 10 | 6 |
| 3HM03 | | | 0,40 | 63 | 87 | 120 | 201 | 336 | - | - | - | - | - | - | 10 | 7 |
| 3HM04 | | | 0,50 | 63 | 107 | 120 | 201 | 356 | - | - | - | - | - | - | 10 | 8 |
| 3HM05 | | | 0,75 | 71 | 127 | 140 | 211 | 390 | - | - | - | - | - | - | 10 | 10 |
| 3HM06 | | | 0,95 | 71 | 147 | 140 | 220 | 410 | - | - | - | - | - | - | 10 | 11 |
| 3HM07 | | Z | 0,95 | 71 | 151 | 140 | 220 | 424 | 153 | 104 | 100 | 125 | 125 | 155 | 10 | 12 |
| 3HM08 | | | 1,1 | 80 | 171 | 155 | 227 | 488 | 173 | 104 | 100 | 125 | 125 | 155 | 10 | 16 |
| | | | | | | | | | | | | | | | | |
| 3HM02 | THREE-PHASE | X | 0,30 | 63 | 87 | 120 | 201 | 336 | - | - | - | - | - | - | 10 | 6 |
| 3HM03 | | | 0,50 | 63 | 87 | 120 | 201 | 336 | - | - | - | - | - | - | 10 | 7 |
| 3HM04 | | | 0,50 | 63 | 107 | 120 | 201 | 356 | - | - | - | - | - | - | 10 | 8 |
| 3HM05 | | Y | 0,75 | 80 | 127 | 155 | 219 | 435 | - | - | - | - | - | - | 10 | 13 |
| 3HM06 | | | 1,1 | 80 | 147 | 155 | 219 | 455 | - | - | - | - | - | - | 10 | 14 |
| 3HM07 | | | 1,1 | 80 | 151 | 155 | 219 | 468 | 153 | 104 | 100 | 125 | 125 | 155 | 10 | 15 |
| 3HM08 | | Z | 1,5 | 80 | 171 | 155 | 219 | 488 | 173 | 104 | 100 | 125 | 125 | 155 | 10 | 17 |
| | | | | | | | | | | | | | | | | |

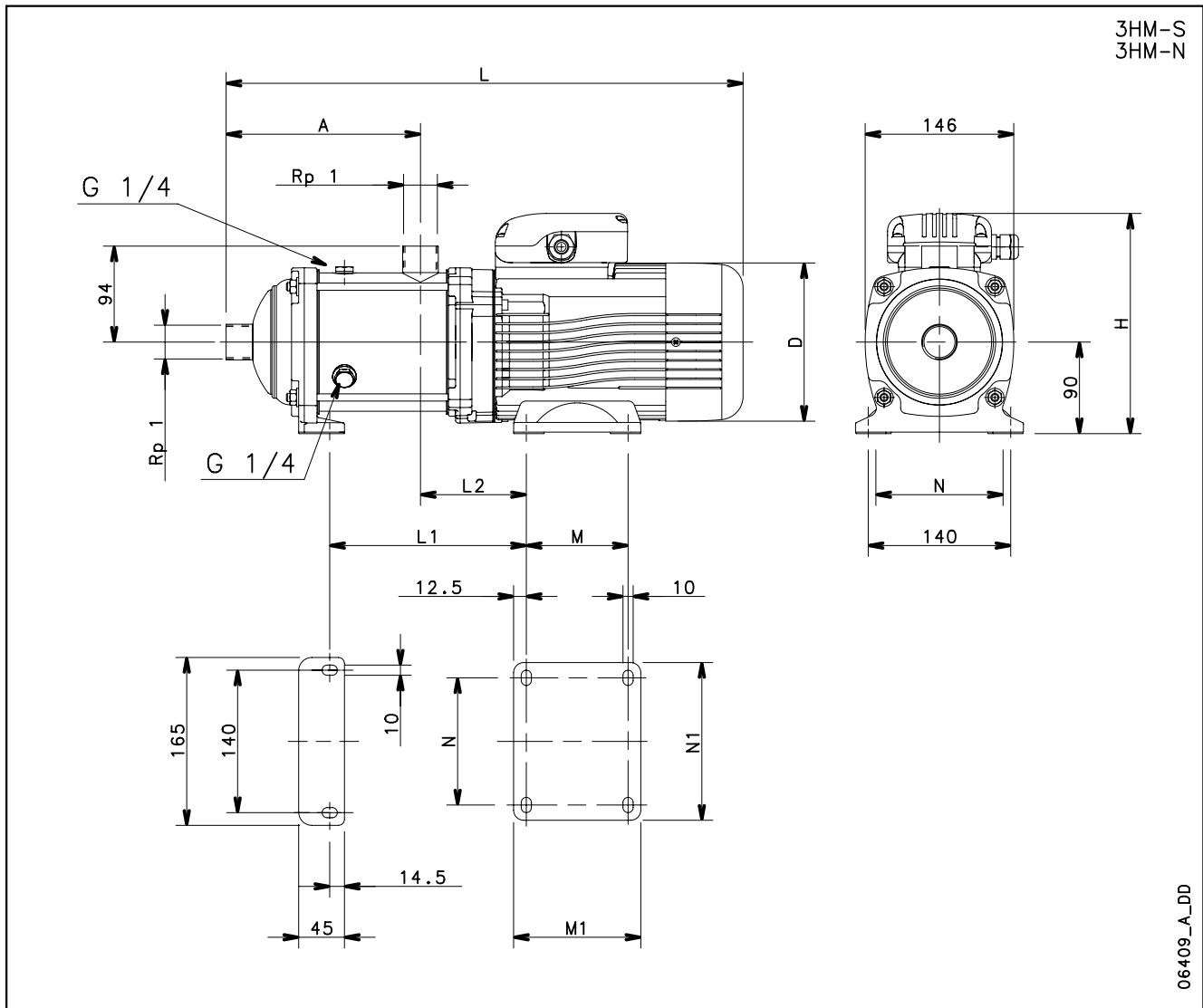
3hm-s-n-1-2p60_a_td

3HM..S - 3HM..N SERIES, (2 TO 8 STAGES)
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



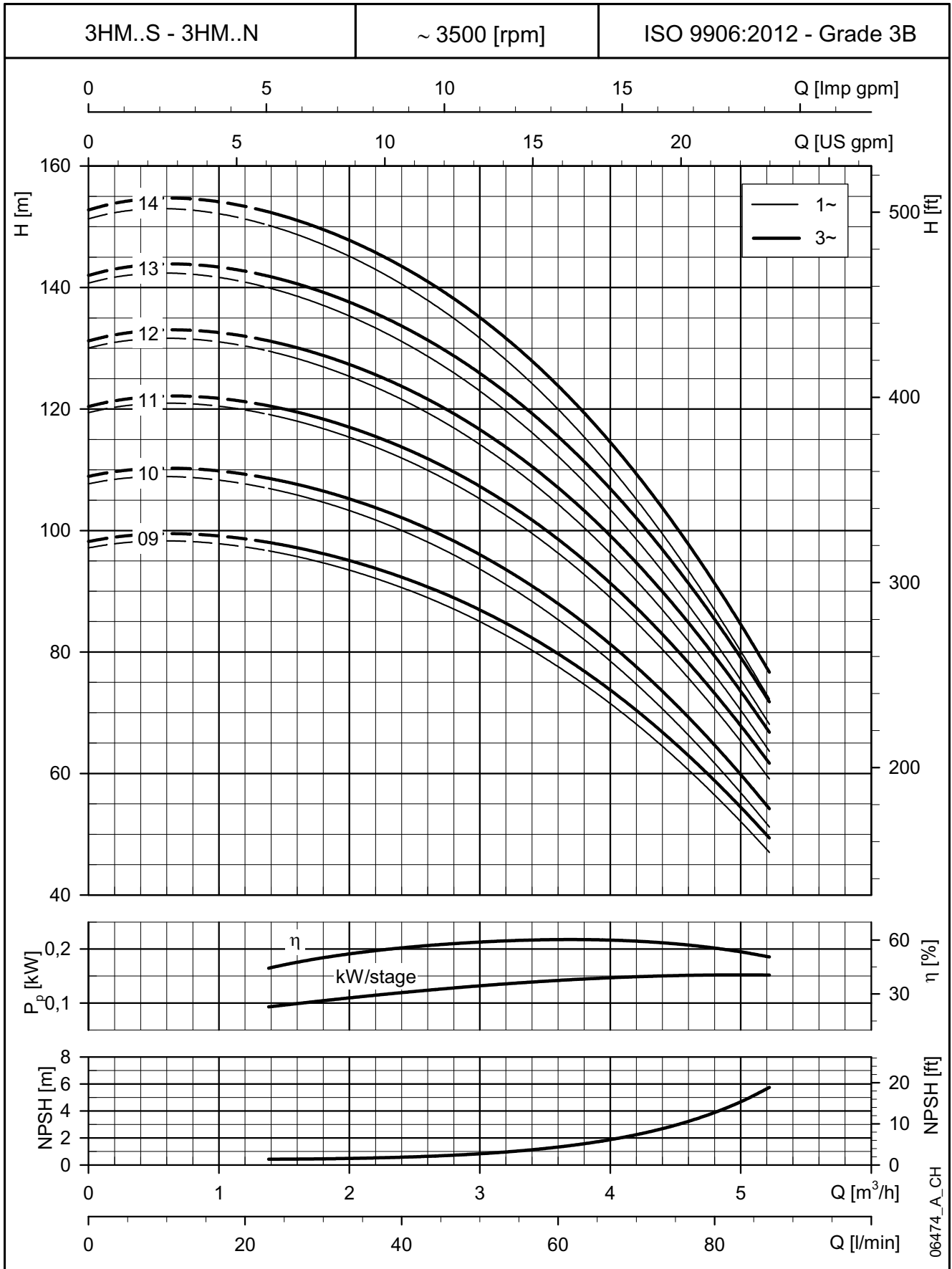
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

3HM..S - 3HM..N SERIES, (9 TO 14 STAGES) DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES



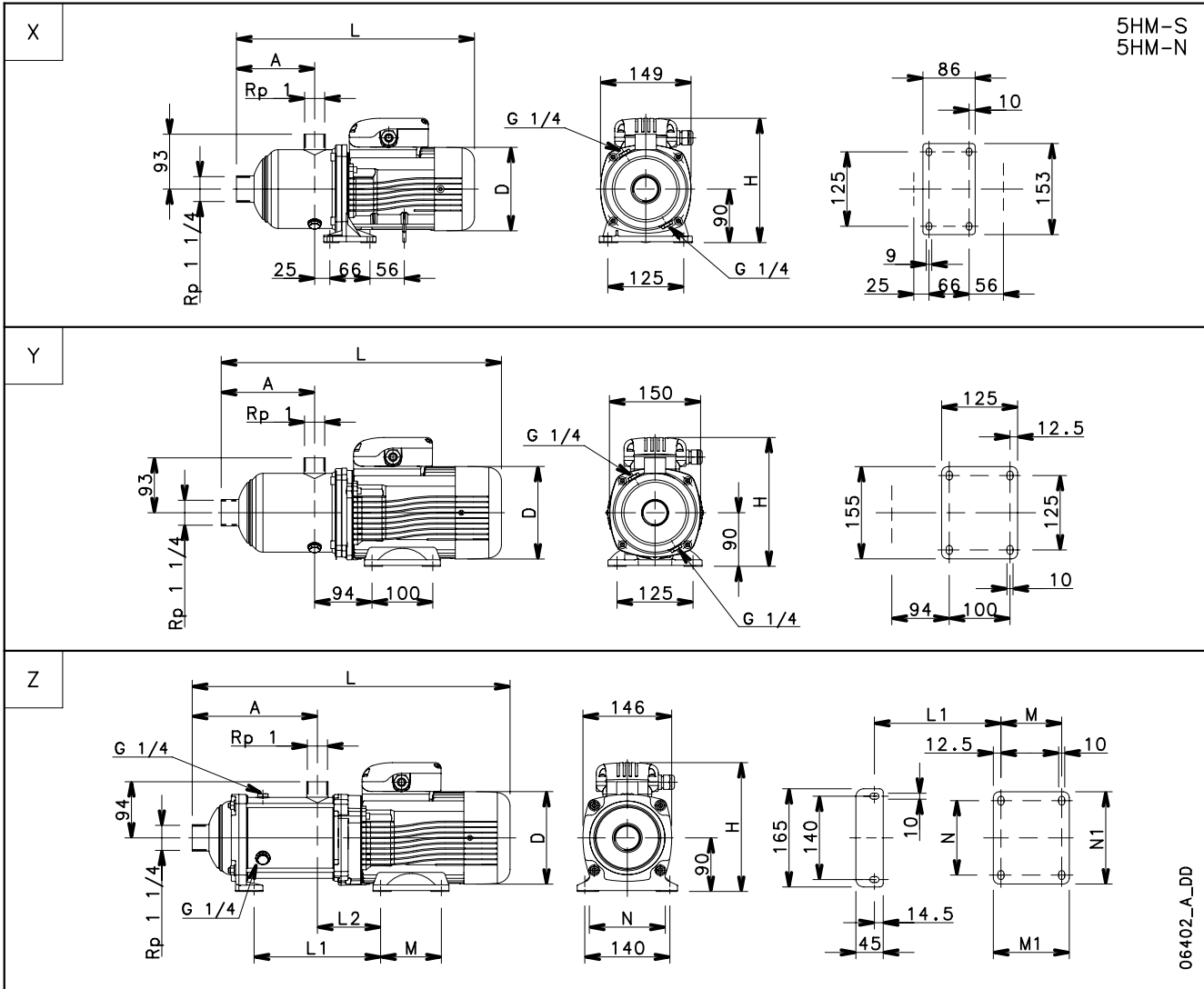
| PUMP TYPE | VERSION | MOTOR | | DIMENSIONS (mm) | | | | | | | | | | PN | WEIGHT |
|-----------|--------------|-------|------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
| | | kW | SIZE | A | D | H | L | L1 | L2 | M | M1 | N | N1 | bar | kg |
| 3HM09 | SINGLE-PHASE | 1,5 | 80 | 191 | 155 | 227 | 508 | 193 | 104 | 100 | 125 | 125 | 155 | 10 | 17 |
| 3HM10 | | 1,5 | 80 | 211 | 155 | 227 | 528 | 213 | 104 | 100 | 125 | 125 | 155 | 16 | 17 |
| 3HM11 | | 2,2 | 90 | 231 | 174 | 241 | 604 | 256 | 127 | 125 | 150 | 140 | 164 | 16 | 26 |
| 3HM12 | | 2,2 | 90 | 251 | 174 | 241 | 624 | 276 | 127 | 125 | 150 | 140 | 164 | 16 | 26 |
| 3HM13 | | 2,2 | 90 | 271 | 174 | 241 | 644 | 296 | 127 | 125 | 150 | 140 | 164 | 16 | 26 |
| 3HM14 | | 2,2 | 90 | 291 | 174 | 241 | 664 | 316 | 127 | 125 | 150 | 140 | 164 | 16 | 27 |
| 3HM09 | THREE-PHASE | 1,5 | 80 | 191 | 155 | 219 | 508 | 193 | 104 | 100 | 125 | 125 | 155 | 10 | 17 |
| 3HM10 | | 1,5 | 80 | 211 | 155 | 219 | 528 | 213 | 104 | 100 | 125 | 125 | 155 | 16 | 17 |
| 3HM11 | | 2,2 | 90 | 231 | 174 | 224 | 604 | 256 | 127 | 125 | 150 | 140 | 164 | 16 | 23 |
| 3HM12 | | 2,2 | 90 | 251 | 174 | 224 | 624 | 276 | 127 | 125 | 150 | 140 | 164 | 16 | 23 |
| 3HM13 | | 2,2 | 90 | 271 | 174 | 224 | 644 | 296 | 127 | 125 | 150 | 140 | 164 | 16 | 23 |
| 3HM14 | | 2,2 | 90 | 291 | 174 | 224 | 664 | 316 | 127 | 125 | 150 | 140 | 164 | 16 | 24 |

3HM..S - 3HM..N SERIES, (9 TO 14 STAGES)
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

5HM..S - 5HM..N SERIES, (2 TO 7 STAGES) DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES

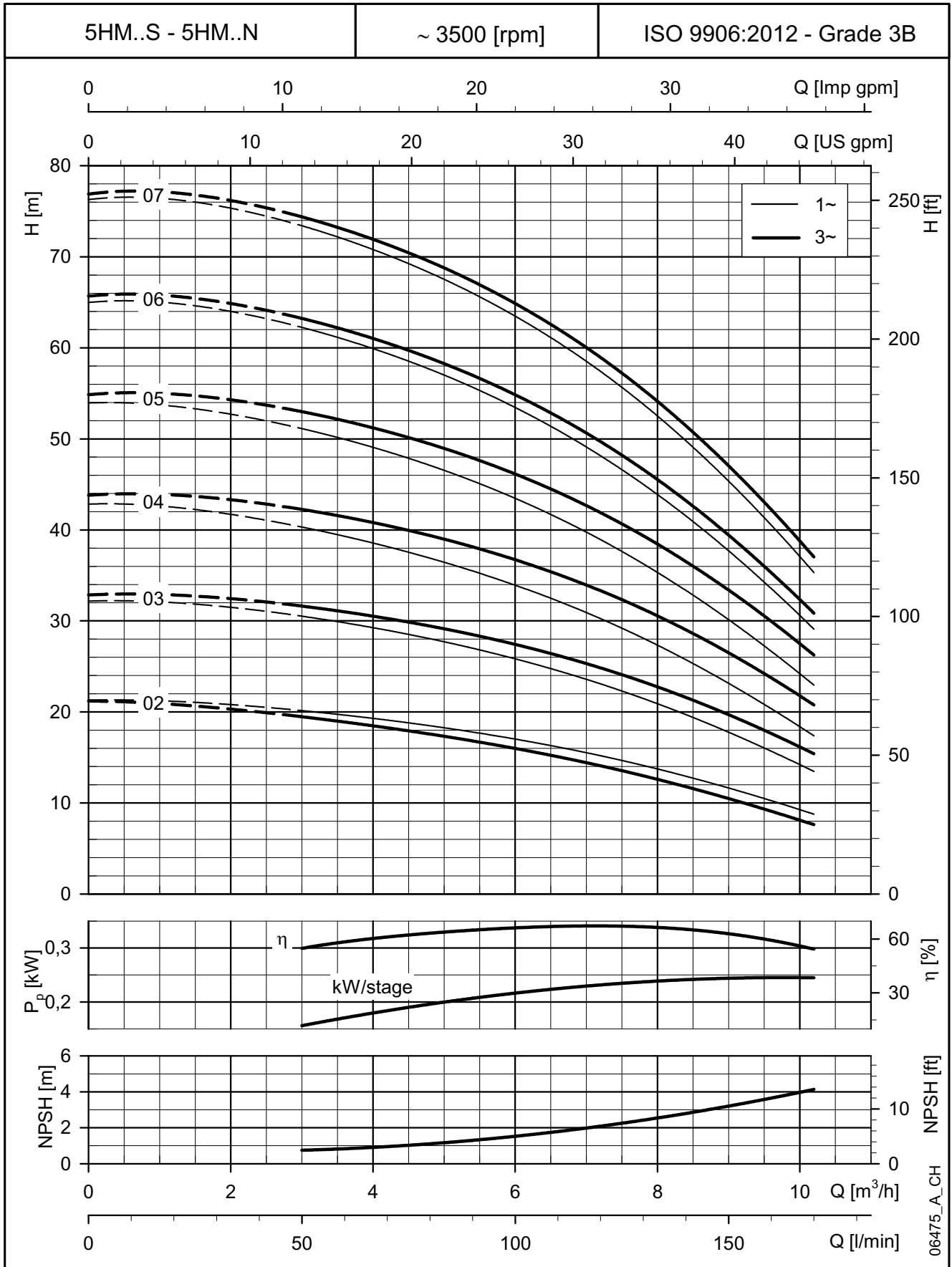


06402_A_DD

| PUMP TYPE | VERSION | Ref. | MOTOR | | DIMENSIONS (mm) | | | | | | | | | | PN | WEIGHT | |
|-----------|--------------|------|-------|------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-----|
| | | | kW | SIZE | A | D | H | L | L1 | L2 | M | M1 | N | N1 | | | bar |
| 5HM02 | SINGLE-PHASE | X | 0,50 | 63 | 104 | 120 | 201 | 353 | - | - | - | - | - | - | - | 10 | 7 |
| 5HM03 | | | 0,75 | 71 | 104 | 140 | 211 | 367 | - | - | - | - | - | - | - | 10 | 9 |
| 5HM04 | | | 0,95 | 71 | 129 | 140 | 220 | 392 | - | - | - | - | - | - | - | 10 | 11 |
| 5HM05 | | Z | Y | 1,1 | 80 | 154 | 155 | 227 | 462 | - | - | - | - | - | - | 10 | 14 |
| 5HM06 | | | | 1,5 | 80 | 158 | 155 | 227 | 475 | 158 | 104 | 100 | 125 | 125 | 155 | 10 | 16 |
| 5HM07 | | | | 2,2 | 90 | 183 | 174 | 241 | 556 | 206 | 127 | 125 | 150 | 140 | 164 | 10 | 25 |
| | | | | | | | | | | | | | | | | | |

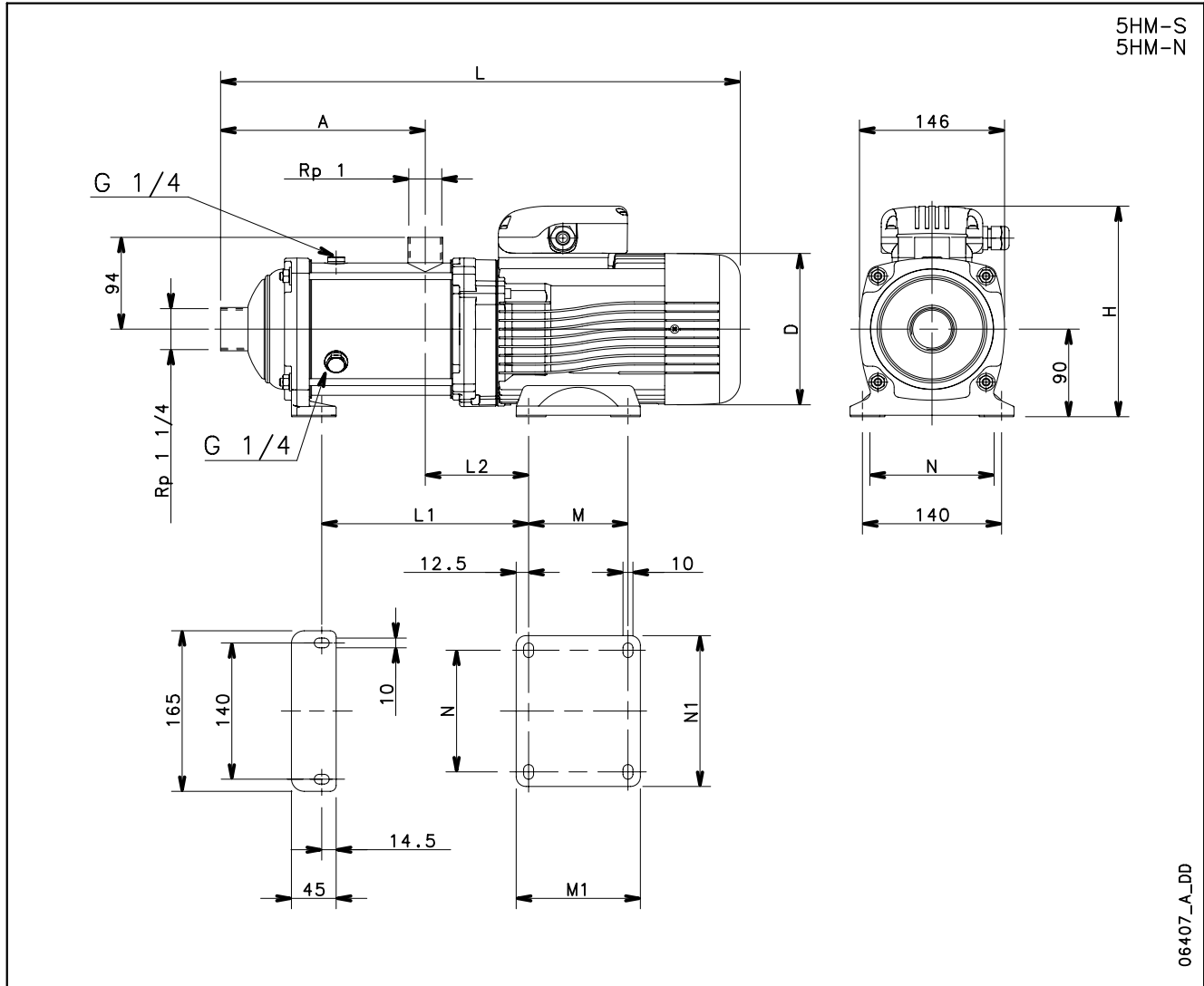
| | | | | | | | | | | | | | | | | | |
|-------|-------------|---|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|
| 5HM02 | THREE-PHASE | X | 0,50 | 63 | 104 | 120 | 201 | 353 | - | - | - | - | - | - | 10 | 7 | |
| 5HM03 | | | 0,75 | 80 | 104 | 155 | 219 | 412 | - | - | - | - | - | - | 10 | 12 | |
| 5HM04 | | | 1,1 | 80 | 129 | 155 | 219 | 437 | - | - | - | - | - | - | 10 | 14 | |
| 5HM05 | | Z | Y | 1,5 | 80 | 154 | 155 | 219 | 462 | - | - | - | - | - | - | 10 | 15 |
| 5HM06 | | | | 1,5 | 80 | 158 | 155 | 219 | 475 | 158 | 104 | 100 | 125 | 125 | 155 | 10 | 16 |
| 5HM07 | | | | 2,2 | 90 | 183 | 174 | 224 | 556 | 206 | 127 | 125 | 150 | 140 | 164 | 10 | 22 |
| | | | | | | | | | | | | | | | | | |

**5HM..S - 5HM..N SERIES, (2 TO 7 STAGES)
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES**



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

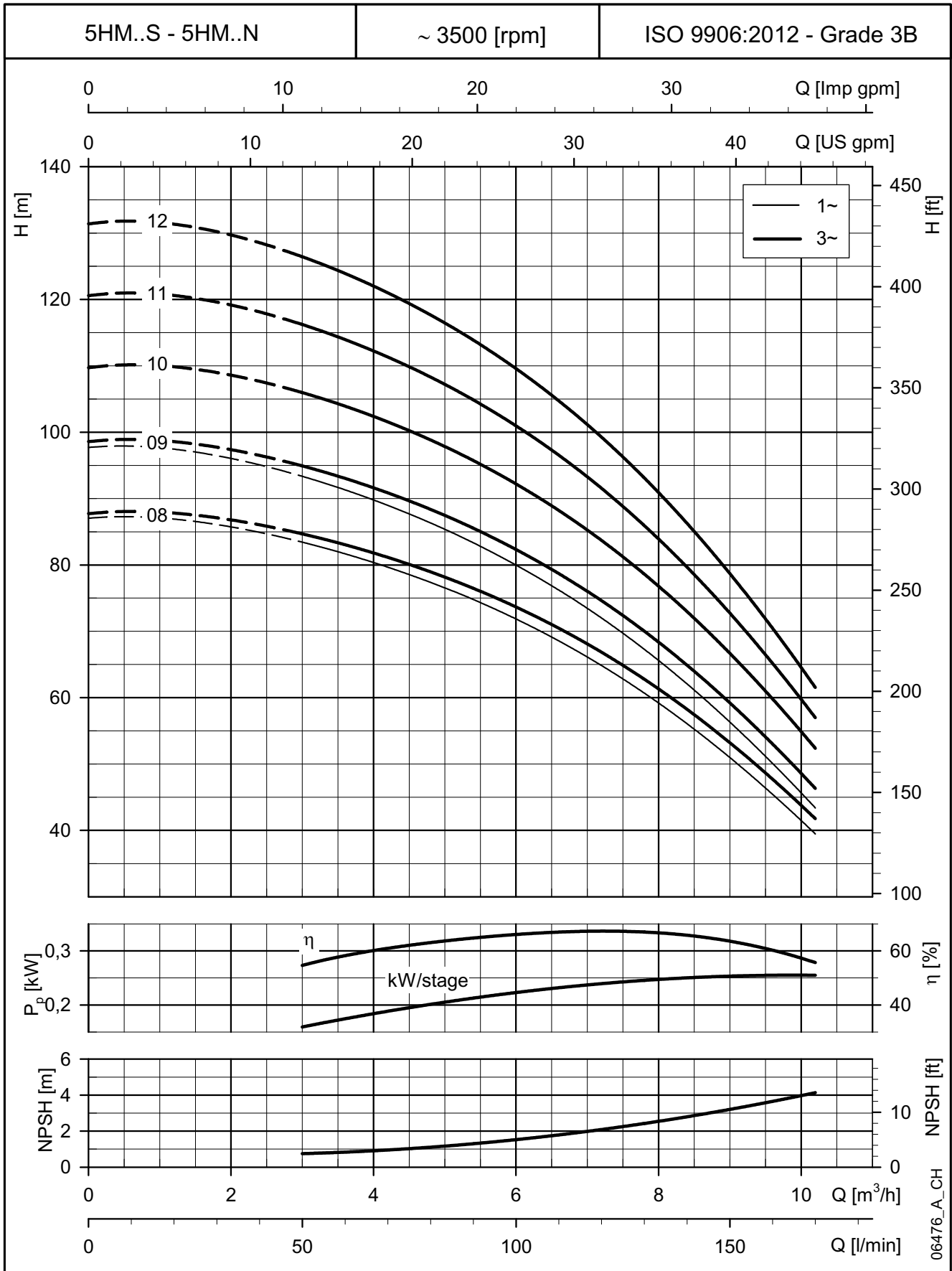
5HM..S - 5HM..N SERIES, (8 TO 12 STAGES) DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES



| PUMP TYPE | VERSION | MOTOR | | DIMENSIONS (mm) | | | | | | | | | | PN | WEIGHT | |
|-----------|--------------|-------|------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|--|
| | | kw | SIZE | A | D | H | L | L1 | L2 | M | M1 | N | N1 | bar | kg | |
| 5HM08 | SINGLE-PHASE | 2,2 | 90 | 208 | 174 | 241 | 581 | 231 | 127 | 125 | 150 | 140 | 164 | 10 | 25 | |
| 5HM09 | | 2,2 | 90 | 233 | 174 | 241 | 606 | 256 | 127 | 125 | 150 | 140 | 164 | 10 | 26 | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| 5HM08 | THREE-PHASE | 2,2 | 90 | 208 | 174 | 224 | 581 | 231 | 127 | 125 | 150 | 140 | 164 | 10 | 22 | |
| 5HM09 | | 2,2 | 90 | 233 | 174 | 224 | 606 | 256 | 127 | 125 | 150 | 140 | 164 | 10 | 23 | |
| 5HM10 | | 3 | 90 | 258 | 174 | 224 | 631 | 281 | 127 | 125 | 150 | 140 | 164 | 16 | 26 | |
| 5HM11 | | 3 | 90 | 283 | 174 | 224 | 656 | 306 | 127 | 125 | 150 | 140 | 164 | 16 | 27 | |
| 5HM12 | | 3 | 90 | 308 | 174 | 224 | 681 | 331 | 127 | 125 | 150 | 140 | 164 | 16 | 27 | |
| | | | | | | | | | | | | | | | | |

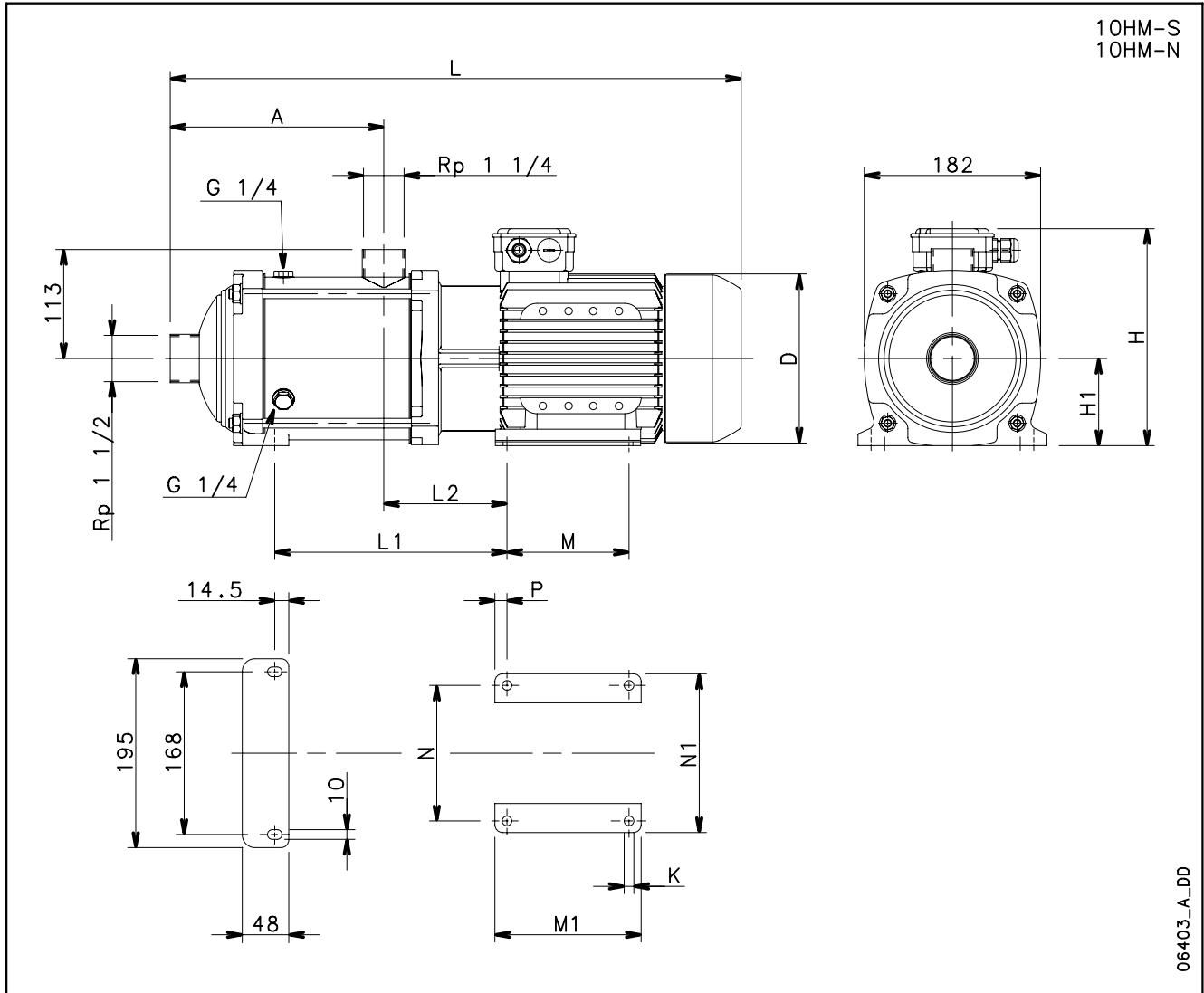
5hm-s-n-2-2p60_a_td

5HM..S - 5HM..N SERIES, (8 TO 12 STAGES)
OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

10HM..S - 10HM..N SERIES DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES



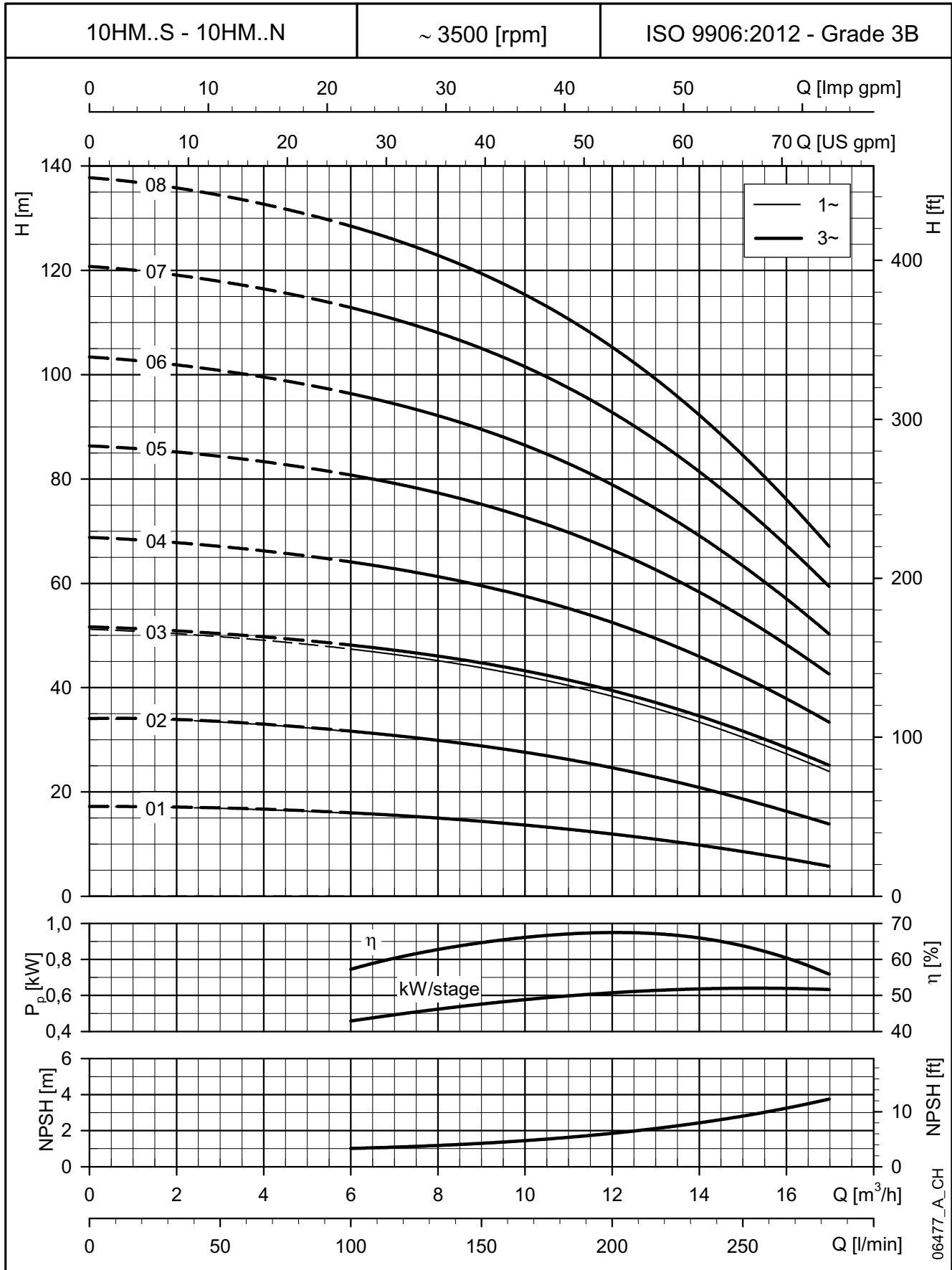
| PUMP TYPE | VERSION | MOTOR | | DIMENSIONS (mm) | | | | | | | | | | | | | PN | WEIGHT |
|-----------|--------------|-------|------|-----------------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|------|----|-----|--------|
| | | kW | SIZE | A | D | H | H1 | L | L1 | L2 | M | M1 | N | N1 | P | K | bar | kg |
| 10HM01 | SINGLE-PHASE | 1,1 | 80 | 125 | 155 | 227 | 90 | 443 | 122 | 105 | 100 | 125 | 125 | 155 | 12,5 | 10 | 10 | 16 |
| 10HM02 | | 1,5 | 80 | 125 | 155 | 227 | 90 | 443 | 122 | 105 | 100 | 125 | 125 | 155 | 12,5 | 10 | 10 | 17 |
| 10HM03 | | 2,2 | 90 | 125 | 174 | 241 | 90 | 499 | 144 | 128 | 125 | 150 | 140 | 164 | 12,5 | 10 | 10 | 26 |

| | | | | | | | | | | | | | | | | | | |
|--------|-------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----|----|----|
| 10HM01 | THREE-PHASE | 0,75 | 80 | 125 | 155 | 219 | 90 | 443 | 122 | 105 | 100 | 125 | 125 | 155 | 12,5 | 10 | 10 | 15 |
| 10HM02 | | 1,5 | 80 | 125 | 155 | 219 | 90 | 443 | 122 | 105 | 100 | 125 | 125 | 155 | 12,5 | 10 | 10 | 17 |
| 10HM03 | | 2,2 | 90 | 125 | 174 | 224 | 90 | 499 | 144 | 128 | 125 | 150 | 140 | 164 | 12,5 | 10 | 10 | 23 |
| 10HM04 | | 3 | 90 | 157 | 174 | 224 | 90 | 531 | 176 | 128 | 125 | 150 | 140 | 164 | 12,5 | 10 | 10 | 27 |
| 10HM05 | | 4 | 100 | 189 | 197 | 254 | 100 | 592 | 228 | 147 | 140 | 170 | 160 | 184 | 15 | 12 | 10 | 34 |
| 10HM06 | | 4 | 100 | 221 | 197 | 254 | 100 | 624 | 260 | 147 | 140 | 170 | 160 | 184 | 15 | 12 | 10 | 35 |
| 10HM07 | | 5,5 | 112 | 253 | 214 | 280 | 112 | 690 | 300 | 154 | 140 | 170 | 190 | 219 | 15 | 12 | 16 | 43 |
| 10HM08 | | 5,5 | 112 | 285 | 214 | 280 | 112 | 722 | 332 | 154 | 140 | 170 | 190 | 219 | 15 | 12 | 16 | 44 |

10hm-s-n-2p60_a_td

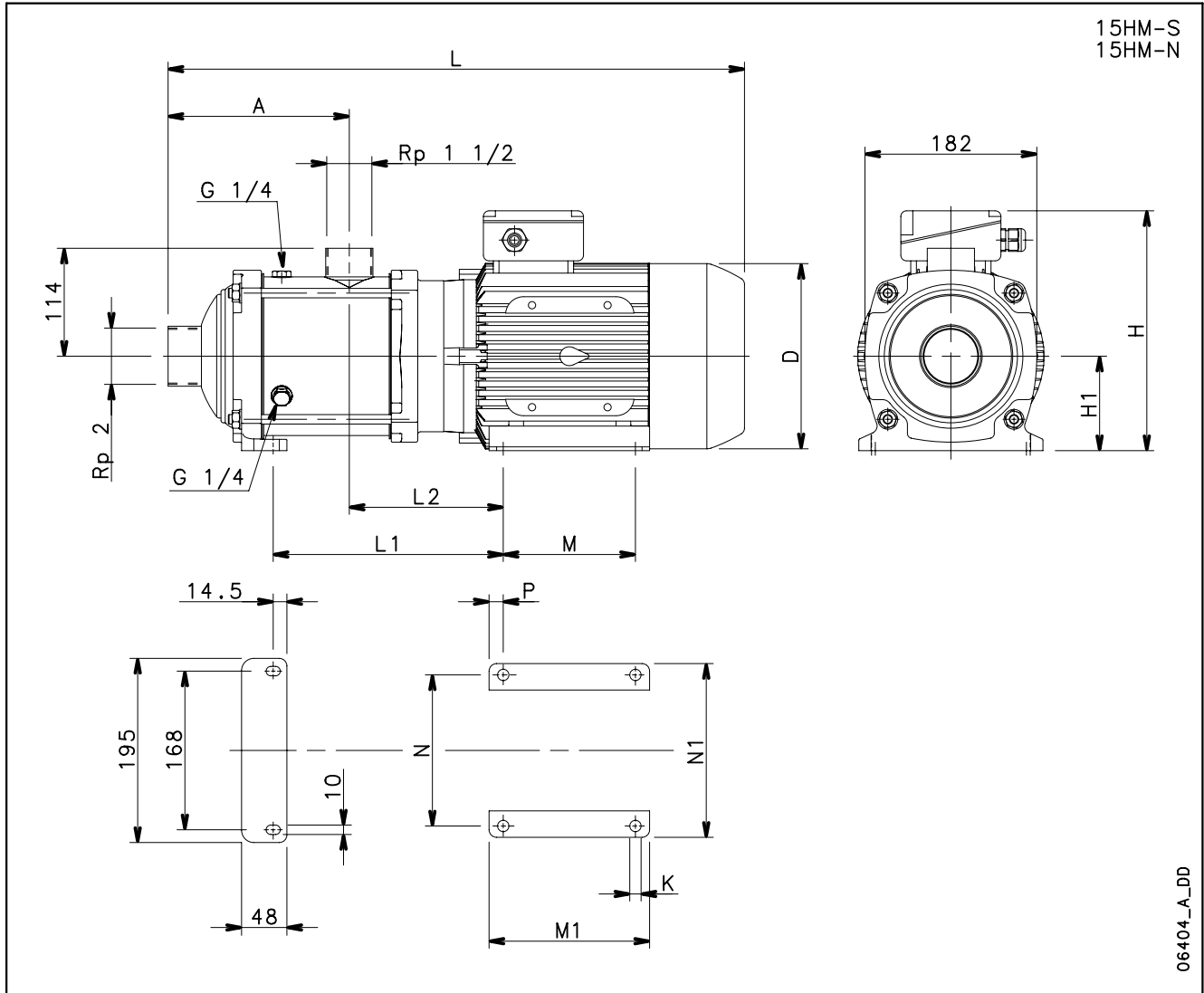
10HM..S - 10HM..N SERIES

OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

15HM..S - 15HM..N SERIES
DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES



06404_A_DD

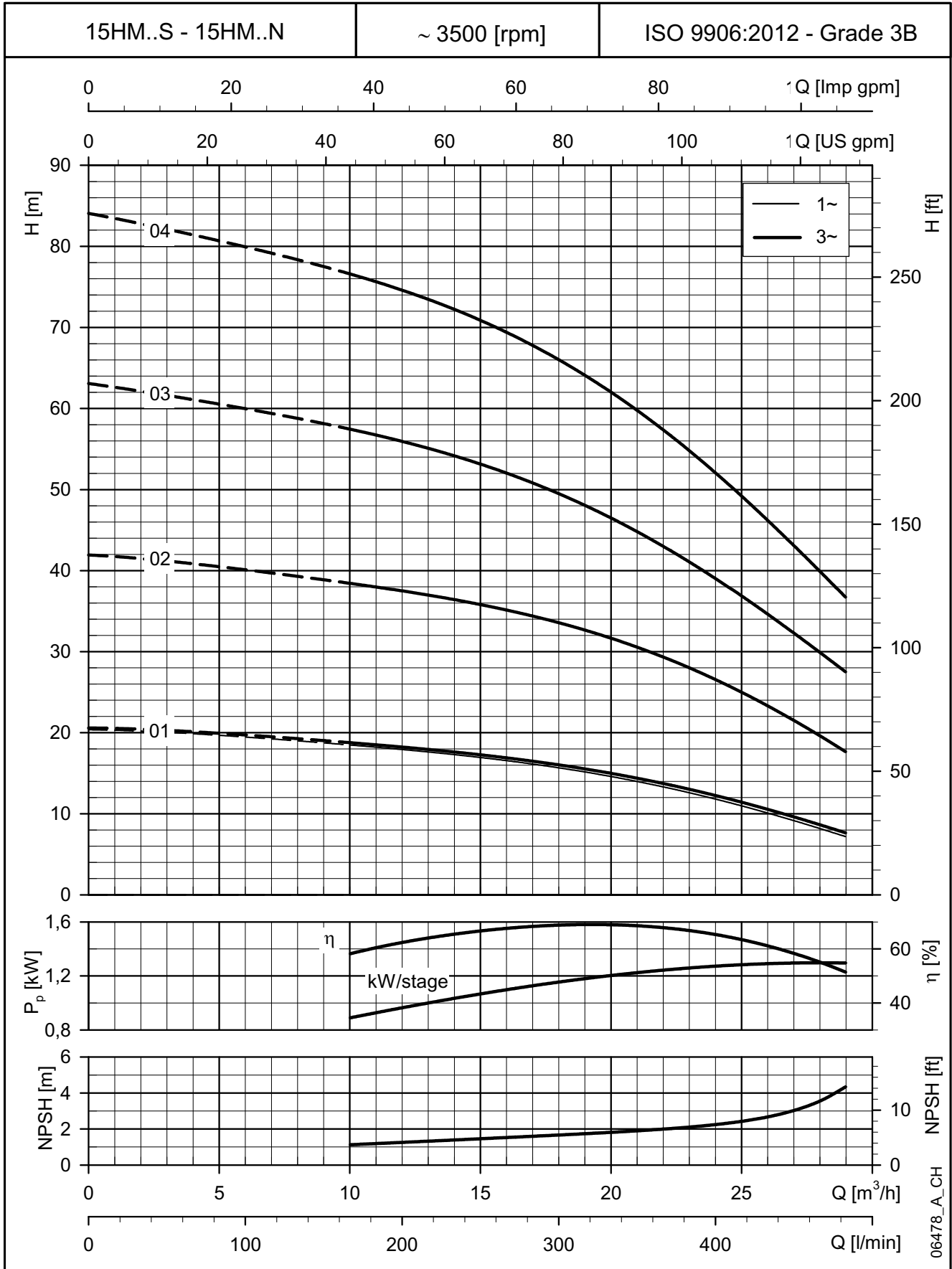
| PUMP TYPE | VERSION | MOTOR | | DIMENSIONS (mm) | | | | | | | | | | | | | PN | WEIGHT | |
|-----------|--------------|-------|------|-----------------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|------|----|-----|--------|--|
| | | kW | SIZE | A | D | H | H1 | L | L1 | L2 | M | M1 | N | N1 | P | K | bar | kg | |
| 15HM01 | SINGLE-PHASE | 1,5 | 80 | 144 | 155 | 227 | 90 | 478 | 154 | 121 | 100 | 125 | 125 | 155 | 12,5 | 10 | 10 | 17 | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----|----|----|
| 15HM01 | THREE-PHASE | 1,5 | 80 | 144 | 155 | 219 | 90 | 478 | 154 | 121 | 100 | 125 | 125 | 155 | 12,5 | 10 | 10 | 17 |
| 15HM02 | | 3 | 90 | 144 | 174 | 224 | 90 | 534 | 176 | 144 | 125 | 150 | 140 | 164 | 12,5 | 10 | 10 | 26 |
| 15HM03 | | 4 | 100 | 144 | 197 | 254 | 100 | 563 | 196 | 163 | 140 | 170 | 160 | 184 | 15 | 12 | 10 | 32 |
| 15HM04 | | 5,5 | 112 | 192 | 214 | 280 | 112 | 645 | 252 | 170 | 140 | 170 | 190 | 219 | 15 | 12 | 10 | 40 |
| | | | | | | | | | | | | | | | | | | |

15hm-s-n-2p60_a_td

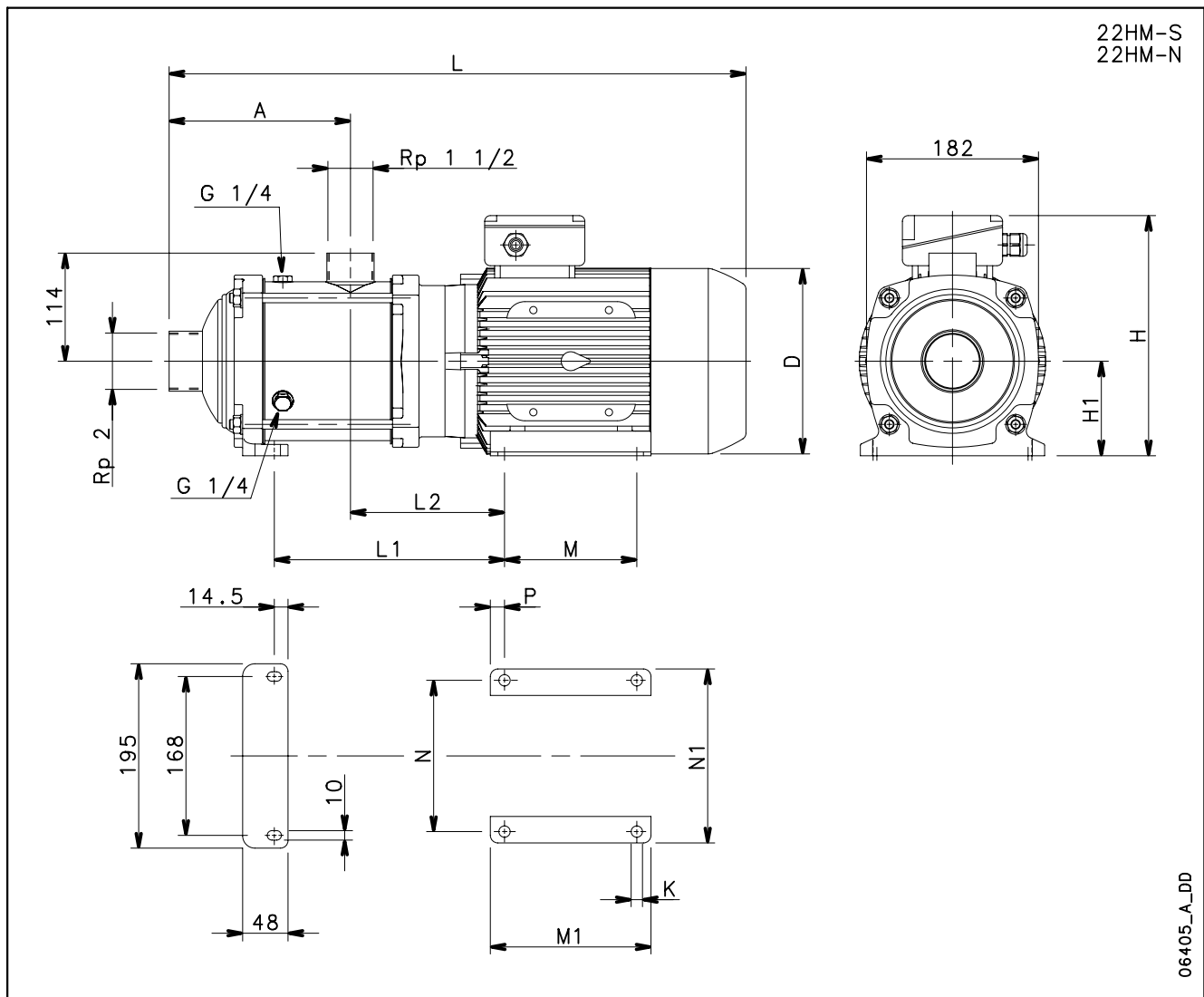
15HM..S - 15HM..N SERIES

OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

22HM..S - 22HM..N SERIES DIMENSIONS AND WEIGHTS AT 60 HZ, 2 POLES



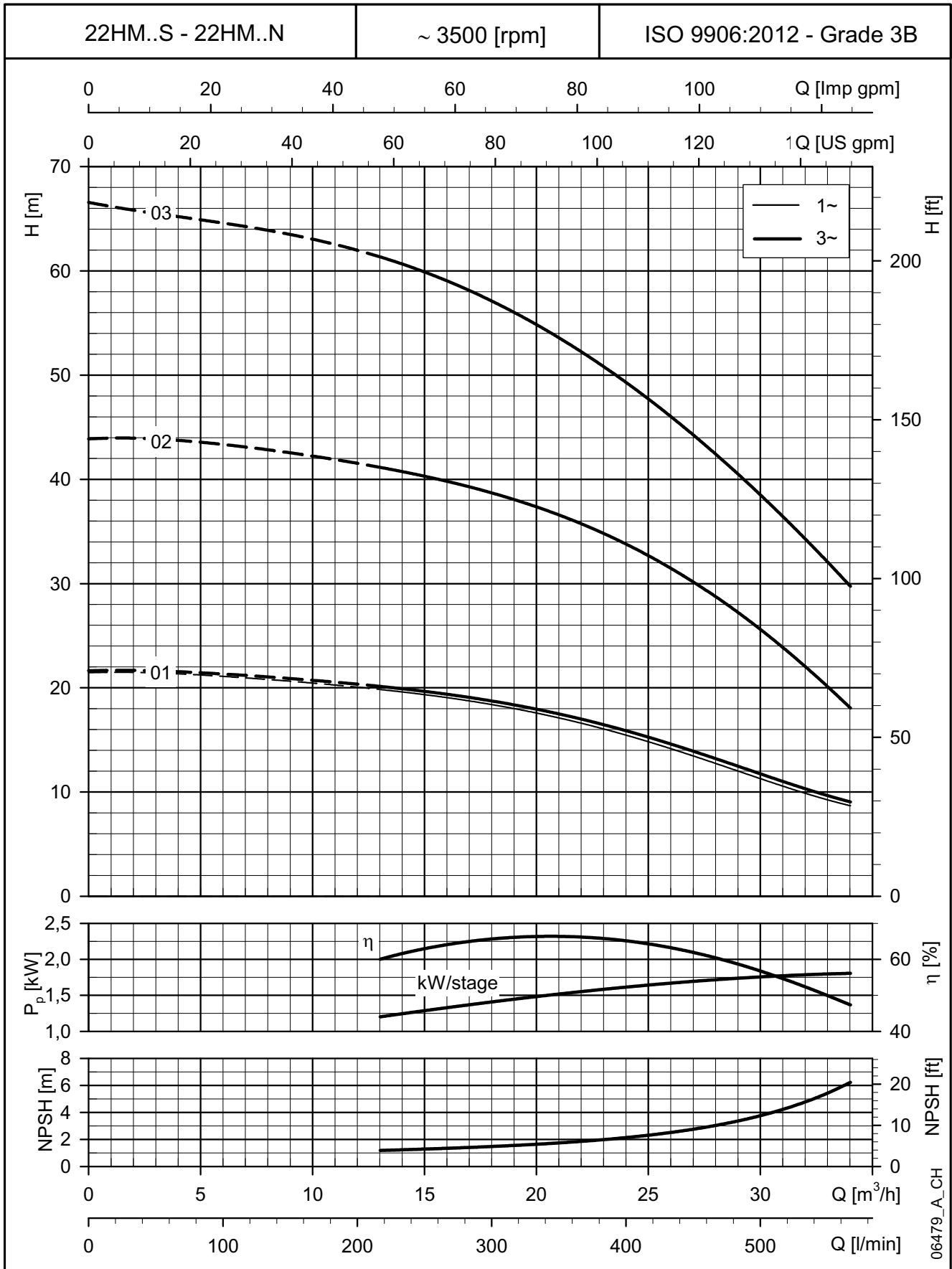
| PUMP TYPE | VERSION | MOTOR | | DIMENSIONS (mm) | | | | | | | | | | | | | PN | WEIGHT |
|-----------|--------------|-------|------|-----------------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|------|----|-----|--------|
| | | kW | SIZE | A | D | H | H1 | L | L1 | L2 | M | M1 | N | N1 | P | K | bar | kg |
| 22HM01 | SINGLE-PHASE | 2,2 | 90 | 144 | 174 | 241 | 90 | 534 | 176 | 144 | 125 | 150 | 140 | 164 | 12,5 | 10 | 10 | 25 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----|----|----|
| 22HM01 | THREE-PHASE | 2,2 | 90 | 144 | 174 | 224 | 90 | 534 | 176 | 144 | 125 | 150 | 140 | 164 | 12,5 | 10 | 10 | 22 |
| 22HM02 | | 4 | 100 | 144 | 197 | 254 | 100 | 563 | 196 | 163 | 140 | 170 | 160 | 184 | 15 | 12 | 10 | 32 |
| 22HM03 | | 5,5 | 112 | 144 | 214 | 280 | 112 | 597 | 204 | 170 | 140 | 170 | 190 | 219 | 15 | 12 | 10 | 39 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

22hm-s-n-2p60_a_td

22HM..S - 22HM..N SERIES


OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES





These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

ACCESSORIES

ACCESSORIES

| MODEL | REF. | CODE | DESCRIPTION |
|--|--------|-----------|--|
| Ball valve  | 1" | 002676438 | 1" FF PN38 WITH DRAIN, CHROME PLATED BRASS |
| | 1" | 002679402 | 1" FF PN30, CHROME PLATED BRASS |
| | 1" 1/4 | R02661422 | 1"1/4 FF PN30, CHROME PLATED BRASS |
| | 1" 1/2 | R02661427 | 1"1/2 FF PN30, CHROME PLATED BRASS |
| | 2" | R02661424 | 2" FF PN25, CHROME PLATED BRASS |
| | 1" | 002675155 | 1" MF PN40, CHROME PLATED BRASS |
| | 1" 1/4 | R02661318 | 1"1/4 MF PN30, CHROME PLATED BRASS |
| | 1" 1/2 | 002675369 | 1"1/2 MF PN25, CHROME PLATED BRASS |
| | 2" | 002679408 | 2" MF PN25, CHROME PLATED BRASS |
| | 1" | 002679403 | 1" MF WITH UNION JOINT, CHROME PLATED BRASS |
| | 1" 1/4 | 002679404 | 1"1/4 MF WITH UNION JOINT, CHROME PLATED BRASS |
| | 1" 1/2 | 002676452 | 1"1/2 MF WITH UNION JOINT, CHROME PLATED BRASS |
| | 2" | NO CODE | 2" MF WITH UNION JOINT, CHROME PLATED BRASS |
| Non-return valve  | 1" | 002675029 | 1" MF SUCTION MALE, PN 25, BRASS |
| | 1" 1/4 | 002675036 | 1"1/4 MF SUCTION MALE, PN 25, BRASS |
| | 1" 1/2 | 002675043 | 1"1/2 MF SUCTION MALE, PN 25, BRASS |
| | 2" | 002675032 | 2" MF SUCTION MALE, PN 40, BRASS |
| | 1" | 002675300 | 1" MF SUCTION MALE, PN16, STAINLESS STEEL AISI304 |
| | 1" 1/4 | 002675301 | 1"1/4 MF SUCTION MALE, PN16, STAINLESS STEEL AISI304 |
| | 1" 1/2 | 002675302 | 1"1/2 MF SUCTION MALE, PN16, STAINLESS STEEL AISI304 |
| | 2" | 002675303 | 2" MF SUCTION MALE, PN16, STAINLESS STEEL AISI304 |
| | 1" | 002675295 | 1" FF PN32, STAINLESS STEEL AISI316 |
| | 1" 1/4 | 002675296 | 1"1/4 FF PN28, STAINLESS STEEL AISI316 |
| | 1" 1/2 | 002675297 | 1"1/2 FF PN28, STAINLESS STEEL AISI316 |
| | 2" | 002675298 | 2" FF PN23, STAINLESS STEEL AISI316 |
| Union 3 Pieces MF  | 1" | R02671048 | 1" MF, GALVANISED STEEL |
| | 1" 1/4 | R02671050 | 1"1/4 MF, GALVANISED STEEL |
| | 1" 1/2 | R02671052 | 1"1/2 MF, GALVANISED STEEL |
| | 2" | R02671054 | 2" MF, GALVANISED STEEL |
| | 1" | 002672655 | 1" MF, STAINLESS STEEL AISI 316 |
| | 1" 1/4 | 002672656 | 1"1/4 MF, STAINLESS STEEL AISI 316 |
| | 1" 1/2 | 002672657 | 1"1/2 MF, STAINLESS STEEL AISI 316 |
| | 2" | 002672658 | 2" MF, STAINLESS STEEL AISI 316 |
| GENYO  | 1" | 109120160 | GENYO 8A/F12 |
| | | 109120161 | GENYO 8A/F12, WITH ELECTRICAL CABLE |
| | | 109120170 | GENYO 8A/F15 |
| | | 109120171 | GENYO 8A/F15 WITH ELECTRICAL CABLE |
| | | 109120180 | GENYO 8A/F22 |
| | | 109120181 | GENYO 8A/F22 WITH ELECTRICAL CABLE |
| | | 109120210 | GENYO 16A/R15-30 |
| | | 109120211 | GENYO 16A/R15-30 WITH ELECTRICAL CABLE |
| Diaphragm tank  | 8 lt | 106110550 | 8 LITRES-8 BAR, 1" CONNECTION, FLANGE IN GALVANISED STEEL |
| | 24 lt | 106110560 | 24 LITRES-8 BAR, 1" CONNECTION, FLANGE IN GALVANISED STEEL |
| | 24 lt | 106111180 | 24 LITRES-10 BAR, 1" CONNECTION, FLANGE IN GALVANISED STEEL |
| | 24 lt | 106111190 | 24 LITRES-16 BAR, 1" CONNECTION, FLANGE IN GALVANISED STEEL |
| | 18 lt | 106227110 | 18 LITRES-10 BAR, 1" CONNECTION, FLANGE IN STAINLESS STEEL AISI304 |
| | 24 lt | 106110660 | 24 LITRES-10 BAR, 1" CONNECTION, FLANGE IN STAINLESS STEEL AISI304 |
| | 24 lt | 106110630 | 24 LITRES-16 BAR, 1" CONNECTION, FLANGE IN STAINLESS STEEL AISI304 |

ACCESSORIES

| MODEL | REF. | CODE | DESCRIPTION |
|---|-----------|---|---|
| Flexible Hose   | 1" | 002542016 | 1" MF, L=170MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542001 | 1" MF, L=180MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542002 | 1" MF, L=230MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542018 | 1" MF, L=360MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542012 | 1" MF, L=400MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542007 | 1" MF, L=430MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542003 | 1" MF, L=450MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542010 | 1" MF, L=500MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542000 | 1" MF L=550MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542014 | 1" MF L=600MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542004 | 1" MF, L=700MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542019 | 1" MF, L=800MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | 002542022 | 1" MF, L=1000MM PN16, REINFORCING BRADING IN GALVANISED STEEL | |
| | 1" 1/4 | 002542040 | 1"1/4 MF L=700MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542041 | 1"1/4 MF L=800MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542042 | 1"1/4 MF L=900MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542044 | 1"1/4 MF L=1000MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | 1"1/2 | 002542050 | 1"1/2 MF L=500MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | | 002542054 | 1"1/2 MF L=800MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| | 2" | 002542069 | 2" MF L=500MM PN16, REINFORCING BRADING IN GALVANISED STEEL |
| 002542070 | | 2" MF L=600MM PN16, REINFORCING BRADING IN GALVANISED STEEL | |
| 1" + Elbow | 002542006 | 1" MF 440+ELBOW PN16, REINFORCING BRADING IN GALVANISED STEEL | |
| | 002542008 | 1" MF 480+ELBOW PN16, REINFORCING BRADING IN GALVANISED STEEL | |
| | 002542013 | 1" MF 500+ELBOW PN16, REINFORCING BRADING IN GALVANISED STEEL | |
| | 002542011 | 1" MF 550+ELBOW PN16, REINFORCING BRADING IN GALVANISED STEEL | |
| | 002542043 | 1" MF800+ELBOW PN16, REINFORCING BRADING IN GALVANISED STEEL | |
| Pressure Switch | 1/4" | 002161101 | SQUARE-D FSG2(1,4-4,6), Rp1/4" CONNECTION GALVANISED STEEL |
| | | 002161200 | SQUARE-D FYG22(2,8-7), Rp1/4" CONNECTION GALVANISED STEEL |
| | | 002161201 | SQUARE-D FYG32(5,6-10,5), Rp1/4" CONNECTION GALVANISED STEEL |
| | | 002161336 | ITALTECNICA PM/5(1-5), Rp1/4" CONNECTION GALVANISED STEEL |
| | | 002161337 | ITALTECNICA PM/12(2,5-12), Rp1/4" CONNECTION GALVANISED STEEL |
| | | 002161338 | ITALTECNICA PM/12S(1-8,5), Rp1/4" CONNECTION GALVANISED STEEL |
| Pressure gauge with radial connection | 1/4" | 002110201 | 0-6 BAR, DRY TYPE, ABS CASE, 1/4" BRASS CONNECTION, D=50MM |
| | | 002110242 | 0-10 BAR, DRY TYPE, ABS CASE, 1/4" BRASS CONNECTION, D=63MM |
| | | 002110243 | 0-16 BAR, DRY TYPE, ABS CASE, 1/4" BRASS CONNECTION, D=63MM |
| | | 002110251 | 0-10 BAR, DRY TYPE, AISI304 CASE, 1/4" AISI316 CONNECTION, D=63MM |
| | | 002110252 | 0-16 BAR, DRY TYPE, AISI304 CASE, 1/4" AISI316 CONNECTION, D=63MM |
| Hexagon Nipple | 1" | 002671855 | 1", GALVANISED STEEL |
| | 1" 1/4 | 002671856 | 1"1/4, GALVANISED STEEL |
| | 1" 1/2 | 002671857 | 1"1/2, GALVANISED STEEL |
| | 2" | 002671858 | 2", GALVANISED STEEL |
| | 1" | 002671820 | 1", STAINLESS STEEL AISI 316 |
| | 1" 1/4 | 002671821 | 1"1/4, STAINLESS STEEL AISI316 |
| | 1" 1/2 | 002671822 | 1"1/2, STAINLESS STEEL AISI316 |
| | 2" | 002671823 | 2", STAINLESS STEEL AISI 316 |
| 90° Elbow | 1" | 002670655 | 1" MF, GALVANISED STEEL |
| | 1" 1/4 | 002670656 | 1"1/4 MF, GALVANISED STEEL |
| | 1" 1/2 | 002670657 | 1"1/2 MF, GALVANISED STEEL |
| | 2" | 002670658 | 2" MF, GALVANISED STEEL |

ACCESSORIES

| MODEL | REF. | CODE | DESCRIPTION |
|---|-----------|---|---|
|  | 1" | 002670505 | 1" FF, GALVANISED STEEL |
| | 1" 1/4 | R02671434 | 1"1/4 FF, GALVANISED STEEL |
| | 1" 1/2 | 002670557 | 1"1/2 FF, GALVANISED STEEL |
| | 2" | 002670558 | 2" FF, GALVANISED STEEL |
| | 1" | 002670633 | 1" MF, STAINLESS STEEL AISI 316 |
| | 1" 1/4 | 002670634 | 1"1/4 MF, STAINLESS STEEL AISI 316 |
| | 1" 1/2 | 002670635 | 1"1/2 MF, STAINLESS STEEL AISI 316 |
| | 2" | 002670636 | 2" MF, STAINLESS STEEL AISI 316 |
| | 1" | 002670594 | 1" FF, STAINLESS STEEL AISI 316 |
| | 1" 1/4 | 002670595 | 1"1/4 FF, STAINLESS STEEL AISI 316 |
| | 1" 1/2 | 002670596 | 1"1/2 FF, STAINLESS STEEL AISI 316 |
| | 2" | 002670597 | 2" FF, STAINLESS STEEL AISI 316 |
| Fittings  | 1/4" | R02671244 | CROSS 1/4" 3F1M, CHROME PLATED BRASS |
| | | 002670881 | CROSS 1/4" 4F, STAINLESS STEEL AISI 316 |
| | | R02671020 | 90° ELBOW 90° 1/4" FF, CHROME PLATED BRASS |
| | | R02671018 | 90° ELBOW 90° 1/4" MF, CHROME PLATED BRASS |
| | | 002670590 | 90° ELBOW 90° 1/4" FF, STAINLESS STEEL AISI 316 |
| | | 002670629 | 90° ELBOW 90° 1/4" MF, STAINLESS STEEL AISI 316 |
| | | 002670777 | TEE 1/4" FFF, STAINLESS STEEL AISI 316 |
| | | R02672030 | TEE 1/4" FFF, CHROME PLATED BRASS |
| | | 002679216 | TEE 1/4" FFM, CHROME PLATED BRASS |
| | | 002679215 | TEE 1/4" FMF, CHROME PLATED BRASS |
| | | 002679225 | TEE 1/4" MFM, CHROME PLATED BRASS |
| | | 002679221 | TEE 1/4" MMF, CHROME PLATED BRASS |
| | | 002679217 | TEE 1/4" MMM, CHROME PLATED BRASS |
| | | R02661811 | BALL VALVE 1/4" FF PN15, CHROME PLATED BRASS |
| | 002675311 | BALL VALVE 1/4" FF PN60, STAINLESS STEEL AISI 316 | |
| | 002675345 | BALL VALVE 1/4" MF PN15, CHROME PLATED BRASS | |
| | 002675351 | BALL VALVE 1/4" MF PN63, STAINLESS STEEL AISI 316 | |
| | 1/2" | 002679264 | CROSS 1/2" 4F, CHROME PLATED BRASS |
| | | 002670883 | CROSS 1/2" 4F, STAINLESS STEEL AISI 316 |
| | | R02671420 | 90° ELBOW 90° 1/2" FF, GALVANISED STEEL |
| | | 002670592 | 90° ELBOW 90° 1/2" FF, STAINLESS STEEL AISI 316 |
| | | 002670631 | 90° ELBOW 90° 1/2" MF, STAINLESS STEEL AISI 316 |
| | | 002670779 | TEE 1/2" FFF, STAINLESS STEEL AISI 316 |
| | | R02672034 | TEE 1/2" FFF, CHROME PLATED BRASS |
| | | 002679222 | TEE 1/2" MMF, CHROME PLATED BRASS |
| | | 002679223 | TEE 1/2" MMM, CHROME PLATED BRASS |
| | | 002679226 | TEE 1/2" MFM, CHROME PLATED BRASS |
| | | 002679230 | TEE 1/2" FFM, CHROME PLATED BRASS |
| | | 002675313 | BALL VALVE 1/2" FF PN60, STAINLESS STEEL AISI 316 |
| | | R02661820 | BALL VALVE 1/2" MF PN15, CHROME PLATED BRASS |
| | | 002675352 | BALL VALVE 1/2" MF PN63, STAINLESS STEEL AISI 316 |
| | 002675327 | BALL VALVE 1/2" FF PN15, CHROME PLATED BRASS | |
| 1" | 002670755 | TEE 1" FFF, GALVANISED STEEL | |
| | 002670781 | TEE 1" FFF, STAINLESS STEEL AISI 316 | |
| 5 Ways Fitting  | 1" | 167320240 | R1", BRASS |

REPORTS AND DECLARATIONS

REPORTS AND DECLARATIONS

i) Test reports

- a) **Factory Test Report** (Lowara identity code: 1A)
(not available for all pump types; contact Customer Service in advance)
- Test report compiled at the end of the assembly line, including flow-head performance test (ISO 9906:2012 – Grade 3B) and tightness test.
- b) **Audit Test Report** (Lowara identity code: 1B)
- Test report for electric pumps compiled in the test room, comprising flow-head-pump input-pump efficiency performance test (ISO 9906:2012 – Grade 3B)
- c) **NPSH Test Report** (Lowara identity code: 1A / CTF-NP)
(unavailable for submerged or submergible pumps)
- Test report for electric pumps compiled in the test room, comprising flow-NPSH performance test (ISO 9906:2012 – Grade 3B)
- d) **Noise Test Report** (Lowara identity code: 1A / CTF-RM)
(unavailable for submerged pumps)
- Report indicating sound pressure and power measurements (EN ISO 20361, EN ISO 11203, EN ISO 4871) using the
• intensimetric (EN ISO 9614-1, EN ISO 9614-2), or
• phonometric method.
- e) **Vibration Test Report**
(unavailable for submerged or submergible pumps)
- Report indicating vibration measurements (ISO 10816-1)

ii) Declaration of product conformity with the technical requirements indicated in the order

- a) **EN 10204:2004 - type 2.1** (Lowara identity code: CTF-21)
- does not include test results on supplied or similar products.
- b) **EN 10204:2004 - type 2.2** (Lowara identity code: CTF-22)
- includes test results (materials certificates) on similar products.
- c) **EN 10204:2004 - type 3.1** (Lowara identity code: 1A / CTF-31 or 1B / CTF-31)
- includes test report (*Factory Test Report* or *Audit Test Report*), list of materials, EC Declaration of Conformity (in addition to the one accompanying the product), certificates / declarations concerning materials in contact with water.

iii) Issue of a further EC Declaration of Conformity,

- in addition to the one accompanying the product, it comprises references to European law and the main technical standards (e.g.: MD 2006/42/EC, EMCD 2004/108/EC, ErP 2009/125/EC).

N.B.: if the request is made after receipt of the product, communicate the code (name) and serial number (date + progressive number).

iv) Manufacturer's declaration of conformity

- relative to one of more types of products without indicating specific codes and serial numbers.

v) Other certificates and/or documentation on request

- subject to availability or feasibility.

vi) Duplication of certificates and/or documentation on request

- subject to availability or feasibility.

TECHNICAL APPENDIX

NPSH

The minimum operating values that can be reached at the pump suction end are limited by the onset of cavitation.

Cavitation is the formation of vapour-filled cavities within liquids where the pressure is locally reduced to a critical value, or where the local pressure is equal to, or just below the vapour pressure of the liquid.

The vapour-filled cavities flow with the current and when they reach a higher pressure area the vapour contained in the cavities condenses. The cavities collide, generating pressure waves that are transmitted to the walls. These, being subjected to stress cycles, gradually become deformed and yield due to fatigue. This phenomenon, characterized by a metallic noise produced by the hammering on the pipe walls, is called incipient cavitation.

The damage caused by cavitation may be magnified by electrochemical corrosion and a local rise in temperature due to the plastic deformation of the walls. The materials that offer the highest resistance to heat and corrosion are alloy steels, especially austenitic steel. The conditions that trigger cavitation may be assessed by calculating the total net suction head, referred to in technical literature with the acronym NPSH (Net Positive Suction Head).

The NPSH represents the total energy (expressed in m.) of the liquid measured at suction under conditions of incipient cavitation, excluding the vapour pressure (expressed in m.) that the liquid has at the pump inlet.

To find the static height h_z at which to install the machine under safe conditions, the following formula must be verified:

$$h_p + h_z \geq (NPSH_r + 0.5) + h_f + h_{pv} \quad \textcircled{1}$$

where:

- h_p** is the absolute pressure applied to the free liquid surface in the suction tank, expressed in m. of liquid; h_p is the quotient between the barometric pressure and the specific weight of the liquid.
- h_z** is the suction lift between the pump axis and the free liquid surface in the suction tank, expressed in m.; h_z is negative when the liquid level is lower than the pump axis.
- h_f** is the flow resistance in the suction line and its accessories, such as: fittings, foot valve, gate valve, elbows, etc.
- h_{pv}** is the vapour pressure of the liquid at the operating temperature, expressed in m. of liquid. h_{pv} is the quotient between the P_v vapour pressure and the liquid's specific weight.
- 0,5** is the safety factor.

The maximum possible suction head for installation depends on the value of the atmospheric pressure (i.e. the elevation above sea level at which the pump is installed) and the temperature of the liquid.

To help the user, with reference to water temperature (4° C) and to the elevation above sea level, the following tables show the drop in hydraulic pressure head in relation to the elevation above sea level, and the suction loss in relation to temperature.

| Water temperature (°C) | 20 | 40 | 60 | 80 | 90 | 110 | 120 |
|------------------------|-----|-----|-----|-----|-----|------|------|
| Suction loss (m) | 0,2 | 0,7 | 2,0 | 5,0 | 7,4 | 15,4 | 21,5 |

| Elevation above sea level (m) | 500 | 1000 | 1500 | 2000 | 2500 | 3000 |
|-------------------------------|------|------|------|------|------|------|
| Suction loss (m) | 0,55 | 1,1 | 1,65 | 2,2 | 2,75 | 3,3 |

Friction loss is shown in the tables at pages 60-61 of this catalogue. To reduce it to a minimum, especially in cases of high suction head (over 4-5 m.) or within the operating limits with high flow rates, we recommend using a suction line having a larger diameter than that of the pump's suction port. It is always a good idea to position the pump as close as possible to the liquid to be pumped.

Make the following calculation:

Liquid: water at ~15°C $\gamma = 1 \text{ kg/dm}^3$

Flow rate required: 25 m³/h

Head for required delivery: 70 m.

Suction lift: 3,5 m.

The selection is an 33SV3G075T pump whose NPSH required value is, at 25 m³/h, of 2 m.

For water at 15 °C

$$h_p = P_a / \gamma = 10,33\text{m}, h_{pv} = P_v / \gamma = 0,174\text{m} (0,01701 \text{ bar})$$

The H_f flow resistance in the suction line with foot valves is ~ 1,2 m.

By substituting the parameters in formula $\textcircled{1}$ with the numeric values above, we have:

$$10,33 + (-3,5) \geq (2 + 0,5) + 1,2 + 0,17$$

from which we have: 6,8 > 3,9

The relation is therefore verified.

VAPOUR PRESSURE
VAPOUR PRESSURE p_s AND ρ DENSITY OF WATER TABLE

| t °C | T K | p_s bar | ρ kg/dm ³ | t °C | T K | p_s bar | ρ kg/dm ³ | t °C | T K | p_s bar | ρ kg/dm ³ |
|---------|--------|--------------|------------------------------|---------|--------|--------------|------------------------------|---------|--------|--------------|------------------------------|
| 0 | 273,15 | 0,00611 | 0,9998 | 55 | 328,15 | 0,15741 | 0,9857 | 120 | 393,15 | 1,9854 | 0,9429 |
| 1 | 274,15 | 0,00657 | 0,9999 | 56 | 329,15 | 0,16511 | 0,9852 | 122 | 395,15 | 2,1145 | 0,9412 |
| 2 | 275,15 | 0,00706 | 0,9999 | 57 | 330,15 | 0,17313 | 0,9846 | 124 | 397,15 | 2,2504 | 0,9396 |
| 3 | 276,15 | 0,00758 | 0,9999 | 58 | 331,15 | 0,18147 | 0,9842 | 126 | 399,15 | 2,3933 | 0,9379 |
| 4 | 277,15 | 0,00813 | 1,0000 | 59 | 332,15 | 0,19016 | 0,9837 | 128 | 401,15 | 2,5435 | 0,9362 |
| 5 | 278,15 | 0,00872 | 1,0000 | 60 | 333,15 | 0,1992 | 0,9832 | 130 | 403,15 | 2,7013 | 0,9346 |
| 6 | 279,15 | 0,00935 | 1,0000 | 61 | 334,15 | 0,2086 | 0,9826 | 132 | 405,15 | 2,867 | 0,9328 |
| 7 | 280,15 | 0,01001 | 0,9999 | 62 | 335,15 | 0,2184 | 0,9821 | 134 | 407,15 | 3,041 | 0,9311 |
| 8 | 281,15 | 0,01072 | 0,9999 | 63 | 336,15 | 0,2286 | 0,9816 | 136 | 409,15 | 3,223 | 0,9294 |
| 9 | 282,15 | 0,01147 | 0,9998 | 64 | 337,15 | 0,2391 | 0,9811 | 138 | 411,15 | 3,414 | 0,9276 |
| 10 | 283,15 | 0,01227 | 0,9997 | 65 | 338,15 | 0,2501 | 0,9805 | 140 | 413,15 | 3,614 | 0,9258 |
| 11 | 284,15 | 0,01312 | 0,9997 | 66 | 339,15 | 0,2615 | 0,9799 | 145 | 418,15 | 4,155 | 0,9214 |
| 12 | 285,15 | 0,01401 | 0,9996 | 67 | 340,15 | 0,2733 | 0,9793 | 155 | 428,15 | 5,433 | 0,9121 |
| 13 | 286,15 | 0,01497 | 0,9994 | 68 | 341,15 | 0,2856 | 0,9788 | 160 | 433,15 | 6,181 | 0,9073 |
| 14 | 287,15 | 0,01597 | 0,9993 | 69 | 342,15 | 0,2984 | 0,9782 | 165 | 438,15 | 7,008 | 0,9024 |
| 15 | 288,15 | 0,01704 | 0,9992 | 70 | 343,15 | 0,3116 | 0,9777 | 170 | 443,15 | 7,920 | 0,8973 |
| 16 | 289,15 | 0,01817 | 0,9990 | 71 | 344,15 | 0,3253 | 0,9770 | 175 | 448,15 | 8,924 | 0,8921 |
| 17 | 290,15 | 0,01936 | 0,9988 | 72 | 345,15 | 0,3396 | 0,9765 | 180 | 453,15 | 10,027 | 0,8869 |
| 18 | 291,15 | 0,02062 | 0,9987 | 73 | 346,15 | 0,3543 | 0,9760 | 185 | 458,15 | 11,233 | 0,8815 |
| 19 | 292,15 | 0,02196 | 0,9985 | 74 | 347,15 | 0,3696 | 0,9753 | 190 | 463,15 | 12,551 | 0,8760 |
| 20 | 293,15 | 0,02337 | 0,9983 | 75 | 348,15 | 0,3855 | 0,9748 | 195 | 468,15 | 13,987 | 0,8704 |
| 21 | 294,15 | 0,24850 | 0,9981 | 76 | 349,15 | 0,4019 | 0,9741 | 200 | 473,15 | 15,550 | 0,8647 |
| 22 | 295,15 | 0,02642 | 0,9978 | 77 | 350,15 | 0,4189 | 0,9735 | 205 | 478,15 | 17,243 | 0,8588 |
| 23 | 296,15 | 0,02808 | 0,9976 | 78 | 351,15 | 0,4365 | 0,9729 | 210 | 483,15 | 19,077 | 0,8528 |
| 24 | 297,15 | 0,02982 | 0,9974 | 79 | 352,15 | 0,4547 | 0,9723 | 215 | 488,15 | 21,060 | 0,8467 |
| 25 | 298,15 | 0,03166 | 0,9971 | 80 | 353,15 | 0,4736 | 0,9716 | 220 | 493,15 | 23,198 | 0,8403 |
| 26 | 299,15 | 0,03360 | 0,9968 | 81 | 354,15 | 0,4931 | 0,9710 | 225 | 498,15 | 25,501 | 0,8339 |
| 27 | 300,15 | 0,03564 | 0,9966 | 82 | 355,15 | 0,5133 | 0,9704 | 230 | 503,15 | 27,976 | 0,8273 |
| 28 | 301,15 | 0,03778 | 0,9963 | 83 | 356,15 | 0,5342 | 0,9697 | 235 | 508,15 | 30,632 | 0,8205 |
| 29 | 302,15 | 0,04004 | 0,9960 | 84 | 357,15 | 0,5557 | 0,9691 | 240 | 513,15 | 33,478 | 0,8136 |
| 30 | 303,15 | 0,04241 | 0,9957 | 85 | 358,15 | 0,5780 | 0,9684 | 245 | 518,15 | 36,523 | 0,8065 |
| 31 | 304,15 | 0,04491 | 0,9954 | 86 | 359,15 | 0,6011 | 0,9678 | 250 | 523,15 | 39,776 | 0,7992 |
| 32 | 305,15 | 0,04753 | 0,9951 | 87 | 360,15 | 0,6249 | 0,9671 | 255 | 528,15 | 43,246 | 0,7916 |
| 33 | 306,15 | 0,05029 | 0,9947 | 88 | 361,15 | 0,6495 | 0,9665 | 260 | 533,15 | 46,943 | 0,7839 |
| 34 | 307,15 | 0,05318 | 0,9944 | 89 | 362,15 | 0,6749 | 0,9658 | 265 | 538,15 | 50,877 | 0,7759 |
| 35 | 308,15 | 0,05622 | 0,9940 | 90 | 363,15 | 0,7011 | 0,9652 | 270 | 543,15 | 55,058 | 0,7678 |
| 36 | 309,15 | 0,05940 | 0,9937 | 91 | 364,15 | 0,7281 | 0,9644 | 275 | 548,15 | 59,496 | 0,7593 |
| 37 | 310,15 | 0,06274 | 0,9933 | 92 | 365,15 | 0,7561 | 0,9638 | 280 | 553,15 | 64,202 | 0,7505 |
| 38 | 311,15 | 0,06624 | 0,9930 | 93 | 366,15 | 0,7849 | 0,9630 | 285 | 558,15 | 69,186 | 0,7415 |
| 39 | 312,15 | 0,06991 | 0,9927 | 94 | 367,15 | 0,8146 | 0,9624 | 290 | 563,15 | 74,461 | 0,7321 |
| 40 | 313,15 | 0,07375 | 0,9923 | 95 | 368,15 | 0,8453 | 0,9616 | 295 | 568,15 | 80,037 | 0,7223 |
| 41 | 314,15 | 0,07777 | 0,9919 | 96 | 369,15 | 0,8769 | 0,9610 | 300 | 573,15 | 85,927 | 0,7122 |
| 42 | 315,15 | 0,08198 | 0,9915 | 97 | 370,15 | 0,9094 | 0,9602 | 305 | 578,15 | 92,144 | 0,7017 |
| 43 | 316,15 | 0,09639 | 0,9911 | 98 | 371,15 | 0,9430 | 0,9596 | 310 | 583,15 | 98,70 | 0,6906 |
| 44 | 317,15 | 0,09100 | 0,9907 | 99 | 372,15 | 0,9776 | 0,9586 | 315 | 588,15 | 105,61 | 0,6791 |
| 45 | 318,15 | 0,09582 | 0,9902 | 100 | 373,15 | 1,0133 | 0,9581 | 320 | 593,15 | 112,89 | 0,6669 |
| 46 | 319,15 | 0,10086 | 0,9898 | 102 | 375,15 | 1,0878 | 0,9567 | 325 | 598,15 | 120,56 | 0,6541 |
| 47 | 320,15 | 0,10612 | 0,9894 | 104 | 377,15 | 1,1668 | 0,9552 | 330 | 603,15 | 128,63 | 0,6404 |
| 48 | 321,15 | 0,11162 | 0,9889 | 106 | 379,15 | 1,2504 | 0,9537 | 340 | 613,15 | 146,05 | 0,6102 |
| 49 | 322,15 | 0,11736 | 0,9884 | 108 | 381,15 | 1,3390 | 0,9522 | 350 | 623,15 | 165,35 | 0,5743 |
| 50 | 323,15 | 0,12335 | 0,9880 | 110 | 383,15 | 1,4327 | 0,9507 | 360 | 633,15 | 186,75 | 0,5275 |
| 51 | 324,15 | 0,12961 | 0,9876 | 112 | 385,15 | 1,5316 | 0,9491 | 370 | 643,15 | 210,54 | 0,4518 |
| 52 | 325,15 | 0,13613 | 0,9871 | 114 | 387,15 | 1,6362 | 0,9476 | 374,15 | 647,30 | 221,20 | 0,3154 |
| 53 | 326,15 | 0,14293 | 0,9862 | 116 | 389,15 | 1,7465 | 0,9460 | | | | |
| 54 | 327,15 | 0,15002 | 0,9862 | 118 | 391,15 | 1,8628 | 0,9445 | | | | |

G-at_npsb_sc

FLOW RESISTANCE TABLE OF FLOW RESISTANCE IN BENDS, VALVES AND GATES

The flow resistance is calculated using the equivalent pipeline length method according to the table below:

| ACCESSORY TYPE | DN | | | | | | | | | | | |
|--------------------|--------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
| | Equivalent pipeline length (m) | | | | | | | | | | | |
| 45° bend | 0,2 | 0,2 | 0,4 | 0,4 | 0,6 | 0,6 | 0,9 | 1,1 | 1,5 | 1,9 | 2,4 | 2,8 |
| 90° bend | 0,4 | 0,6 | 0,9 | 1,1 | 1,3 | 1,5 | 2,1 | 2,6 | 3,0 | 3,9 | 4,7 | 5,8 |
| 90° smooth bend | 0,4 | 0,4 | 0,4 | 0,6 | 0,9 | 1,1 | 1,3 | 1,7 | 1,9 | 2,8 | 3,4 | 3,9 |
| Union tee or cross | 1,1 | 1,3 | 1,7 | 2,1 | 2,6 | 3,2 | 4,3 | 5,3 | 6,4 | 7,5 | 10,7 | 12,8 |
| Gate | - | - | - | 0,2 | 0,2 | 0,2 | 0,4 | 0,4 | 0,6 | 0,9 | 1,1 | 1,3 |
| Non return valve | 1,1 | 1,5 | 1,9 | 2,4 | 3,0 | 3,4 | 4,7 | 5,9 | 7,4 | 9,6 | 11,8 | 13,9 |

G-a-pcv-en_a_th

The table is valid for the Hazen Williams coefficient $C=100$ (cast iron pipework);

for steel pipework, multiply the values by 1,41;

for stainless steel, copper and coated cast iron pipework, multiply the values by 1,85;

When the **equivalent pipeline length** has been determined, the flow resistance is obtained from the table of flow resistance.

The values given are guideline values which are bound to vary slightly according to the model, especially for gate valves and non-return valves, for which it is a good idea to check the values supplied by manufacturers.

VOLUMETRIC CAPACITY

| Litres per minute l/min | Cubic metres per hour m ³ /h | Cubic feet per hour ft ³ /h | Cubic feet per minute ft ³ /min | Imp. gal. per minute Imp. gal./min | US gal. per minute Us gal./min |
|-------------------------------|---|--|--|--|--------------------------------------|
| 1,000 | 0,0600 | 2,1189 | 0,0353 | 0,2200 | 0,2642 |
| 16,6667 | 1,000 | 35,3147 | 0,5886 | 3,6662 | 4,4029 |
| 0,4719 | 0,0283 | 1,000 | 0,0167 | 0,1038 | 0,1247 |
| 28,3168 | 1,6990 | 60,0000 | 1,000 | 6,2288 | 7,4805 |
| 4,5461 | 0,2728 | 9,6326 | 0,1605 | 1,000 | 1,2009 |
| 3,7854 | 0,2271 | 8,0208 | 0,1337 | 0,8327 | 1,000 |

PRESSURE AND HEAD

| Newton per square metre N/m ² | kilo Pascal kPa | bar bar | Pound force per square inch psi | metre of water m H ₂ O | millimetre of mercury mm Hg |
|--|--------------------|----------------------|---------------------------------------|---|-----------------------------------|
| 1,000 | 0,0010 | 1 x 10 ⁻⁵ | 1.45 x 10 ⁻⁴ | 1.02 x 10 ⁻⁴ | 0,0075 |
| 1000,0000 | 1,000 | 0,0100 | 0,1450 | 0,1020 | 7,5006 |
| 1 x 10 ⁵ | 100,0000 | 1,000 | 14,5038 | 10,1972 | 750,0638 |
| 6894,7570 | 6,8948 | 0,0689 | 1,000 | 0,7031 | 51,7151 |
| 9806,6500 | 9,8067 | 0,0981 | 1,4223 | 1,000 | 73,5561 |
| 133,3220 | 0,1333 | 0,0013 | 0,0193 | 0,0136 | 1,000 |

LENGTH

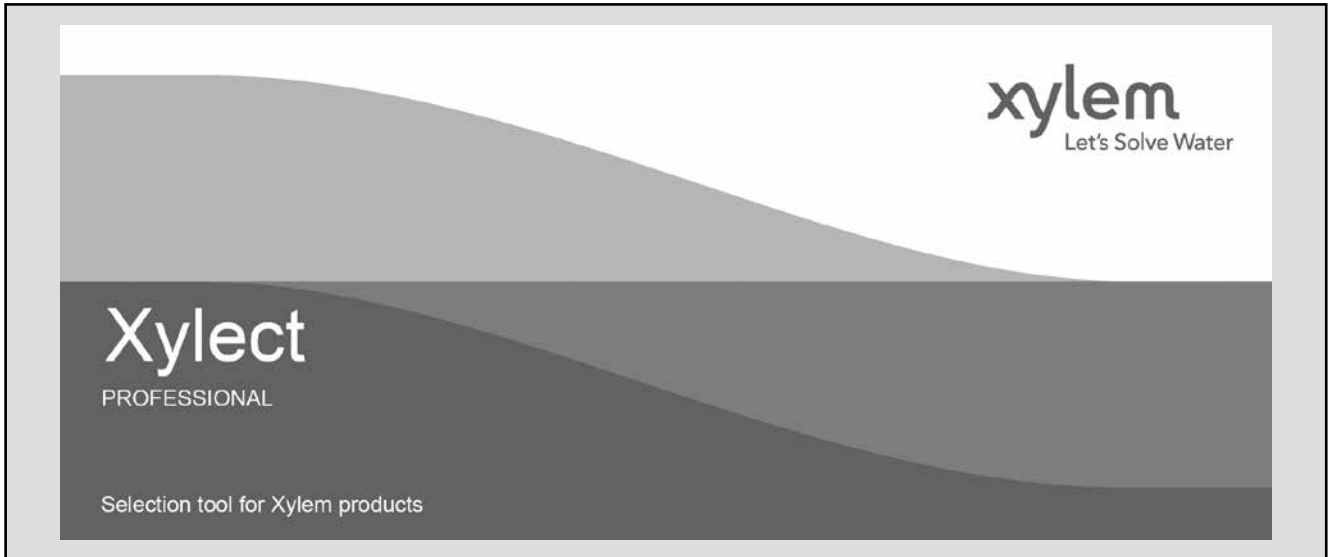
| millimetre mm | centimetre cm | metre m | inch in | foot ft | yard yd |
|------------------|------------------|--------------|--------------|--------------|--------------|
| 1,000 | 0,1000 | 0,0010 | 0,0394 | 0,0033 | 0,0011 |
| 10,0000 | 1,000 | 0,0100 | 0,3937 | 0,0328 | 0,0109 |
| 1000,0000 | 100,0000 | 1,000 | 39,3701 | 3,2808 | 1,0936 |
| 25,4000 | 2,5400 | 0,0254 | 1,000 | 0,0833 | 0,0278 |
| 304,8000 | 30,4800 | 0,3048 | 12,0000 | 1,000 | 0,3333 |
| 914,4000 | 91,4400 | 0,9144 | 36,0000 | 3,0000 | 1,000 |

VOLUME

| cubic metre m ³ | litre litro | millilitre ml | imp. Gallon imp. gal. | US gallon US gal. | cubic foot ft ³ |
|-------------------------------|----------------|---------------------|--------------------------|--------------------------|-------------------------------|
| 1,000 | 1000,0000 | 1 x 10 ⁶ | 219,9694 | 264,1720 | 35,3147 |
| 0,0010 | 1,000 | 1000,0000 | 0,2200 | 0,2642 | 0,0353 |
| 1 x 10 ⁻⁶ | 0,0010 | 1,000 | 2.2 x 10 ⁻⁴ | 2.642 x 10 ⁻⁴ | 3.53 x 10 ⁻⁵ |
| 0,0045 | 4,5461 | 4546,0870 | 1,000 | 1,2009 | 0,1605 |
| 0,0038 | 3,7854 | 3785,4120 | 0,8327 | 1,000 | 0,1337 |
| 0,0283 | 28,3168 | 28316,8466 | 6,2288 | 7,4805 | 1,000 |

G-at_pp-en_a_sc

FURTHER PRODUCT SELECTION AND DOCUMENTATION Xylect™



Xylect™ is pump solution selection software with an extensive online database of product information across the entire Lowara, and Vogel range of pumps and related products, with multiple search options and helpful project management facilities. The system holds up-to-date product information on thousands of products and accessories.

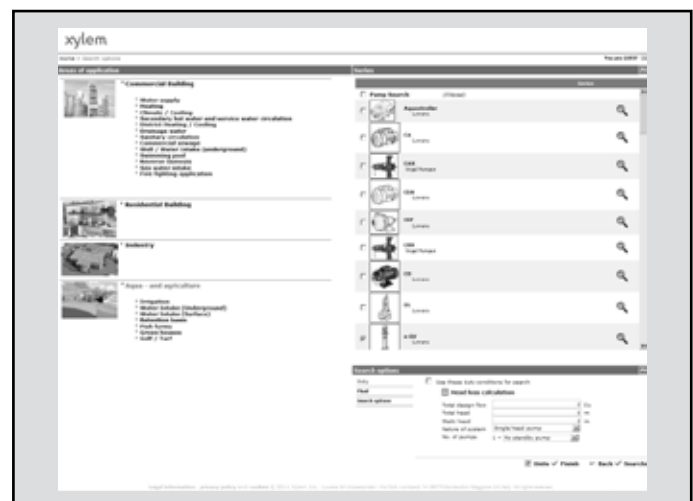
The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Lowara and Vogel products.

The search can be made by:

- Application
- Product type
- Duty point

Xylect™ gives a detailed output:

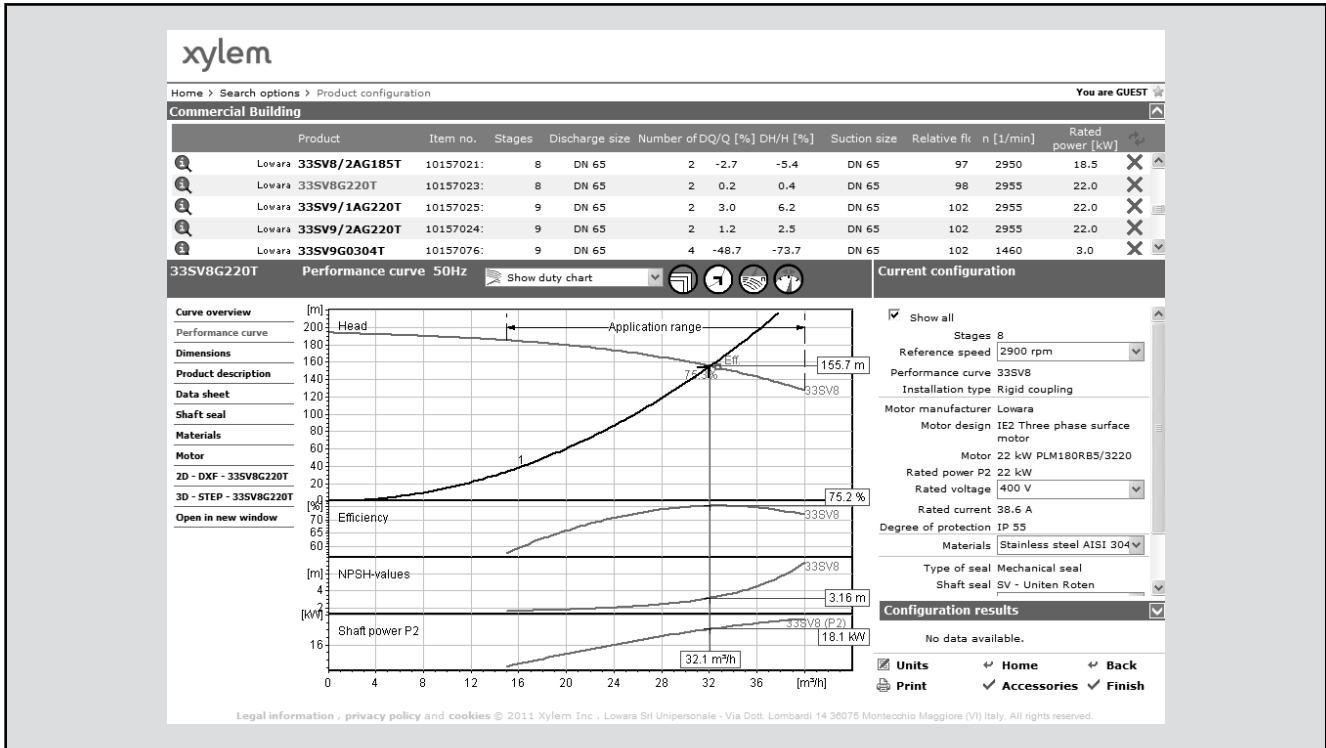
- List with search results
- Performance curves (flow, head, power, efficiency, NPSH)
- Motor data
- Dimensional drawings
- Options
- Data sheet printouts
- Document downloads incl dxf files



The search by application guides users not familiar with the product range to the right choice.

FURTHER PRODUCT SELECTION AND DOCUMENTATION

Xylect™



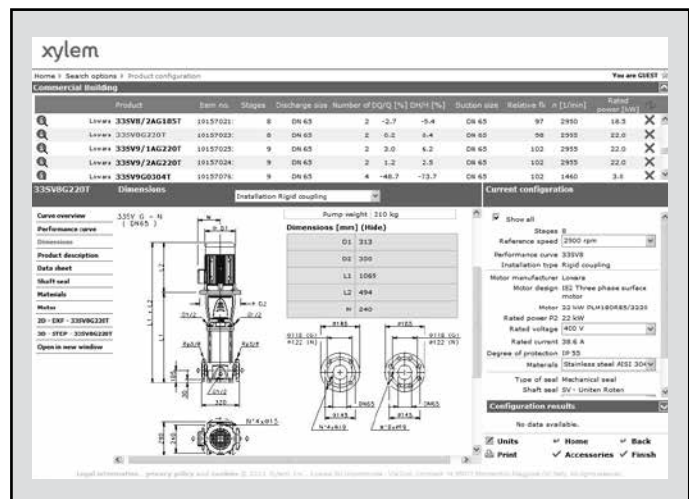
The detailed output makes it easy to select the optimal pump from the given alternatives.

The best way to work with Xylect™ is to create a personal account. This makes it possible to:

- Set own standard units
- Create and save projects
- Share projects with other Xylect™ users

Every user has a My Xylect space, where all projects are saved.

For more information about Xylect™ please contact our sales network or visit www.xylect.com.



Dimensional drawings appear on the screen and can be downloaded in dxf format.

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're approximately 12,900 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to xylem.com.



Legal head office
Xylem Water Solutions Italia Srl

Via Gioacchino Rossini 1/A
20020 - Lainate (MI) - Italy
Tel. (+39) 02 90358.1
Fax (+39) 02 9019990
www.xylemwatersolutions.com

For information and technical support
Xylem Service Italia Srl

Via Dottor Vittorio Lombardi 14
36075 - Montecchio Maggiore (VI) - Italy
Tel. (+39) 0444 707111
Fax (+39) 0444 491043
www.lowara.com

Xylem Water Solutions Italia Srl reserves the right to make modification without prior notice.
Lowara, Xylem are trademarks of Xylem Inc. or one of its subsidiaries
© 2014 Xylem, Inc.