

## TYPICAL APPLICATIONS

1.1

TYPICAL APPLICATIONS

| INDUSTRY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | BUILDING SERVICE                                                                                                                                                                                                                                                                                                                                                                                                                  | WATER SUPPLY                                                                                                                                                                                                                                                                                                                                                                                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• <b>Water treatment</b><br/>reverse osmosis<br/>ultra-filtration<br/>water purification<br/>micro-filtration<br/>softening, ionizing and demineralising systems<br/>swimming pools<br/>separators</li> <li>• <b>Boiler feeding</b><br/>steam systems<br/>condensate systems</li> <li>• <b>Wash and clean</b><br/>vehicle washing systems<br/>industrial part washing<br/>laundry systems<br/>supply of liquids with acids and bases<br/>supply of chemical liquids</li> <li>• <b>Chilling</b><br/>handling of refrigerants for cooling<br/>thermal control systems<br/>industrial cooling<br/>laser cooling</li> <li>• <b>Machine tooling</b><br/>cooling lubricant supply for tooling machines</li> <li>• <b>Pressure boosting</b><br/>pressure boosting for industrial use</li> <li>• <b>Food &amp; Beverage</b><br/>food washing systems<br/>bottle wash systems</li> <li>• <b>Pharmaceutical industries</b></li> <li>• <b>Marine applications</b><br/>freshwater, deckwash, high fog and fire fighting on ships</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Pressure boosting</b><br/>pressure boosting for buildings<br/>pressure boosting for high rise buildings/hotels</li> <li>• <b>Sprinkler systems</b></li> <li>• <b>Fire fighting systems</b><br/>jockey pump</li> <li>• <b>District heating</b></li> <li>• <b>Heat exchangers / fan heaters</b></li> <li>• <b>Air conditioning systems</b></li> <li>• <b>Heating systems</b></li> </ul> | <ul style="list-style-type: none"> <li>• <b>Water treatment</b><br/>water treatment plants filtration<br/>water treatment plants transfer</li> <li>• <b>Pressure boosting</b><br/>transfer from water treatment plants (mains)</li> <li>• <b>Irrigation</b><br/>golf course / sport fields irrigation</li> <li>• <b>Agriculture</b><br/>sprinkler irrigation<br/>drip irrigation</li> </ul> |

50 Hz

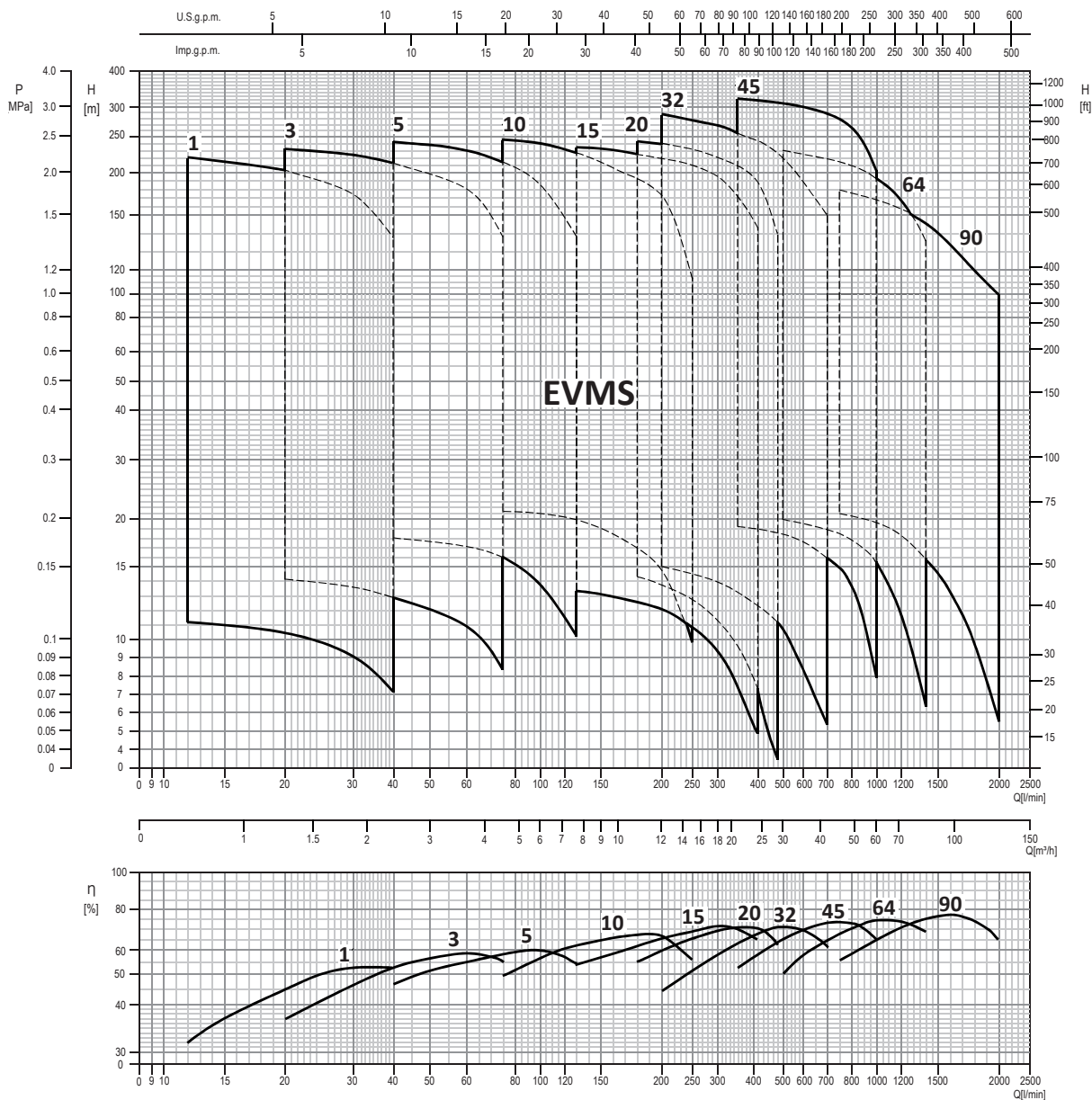
# VERTICAL MULTISTAGE PUMPS

EVMS

1.2

PERFORMANCE RANGE

## PERFORMANCE RANGE EVMS(.)1-3-5-10-15-20-32-45-64-90



### PRODUCT FEATURES

2.1

PRODUCT FEATURES

#### [General]

##### 1. Pump Type

The **EVMS** is Non-self-priming, vertical multistage in line, centrifugal pumps.

##### 2. Model range

The EVMS comes in **1,3,5,10,15,20,32,45,64 and 90 m³/h** flow sizes for the majority market needs.

##### 3. Maximum operating pressure

The EVMS can be operated at **16, 25, 30 bar or 35 bar as maximum**.

##### 4. Operating liquid temperature range

The EVMS can be operated **from - 30°C to + 140°C** as the maximum.  
(please contact EBARA in case of -30°C to -15°C, or 120-140°C)

##### 5. Material options

**AISI 304, AISI 316L and Cast iron** versions are available.

##### 6. Motor

The EVMS can be coupled with **the commercial motors** that are acquired in the markets.

The EVMS is provide as the electric pumps with IE3 motors for the over 0.75 kW.

**PTC sensor** pre-installed for motors of 1.5 kW and above.

Unlosable screw and sealing from 0.75 kW to 45 kW are standard for terminal box fixing.

##### 7. Certifications

|                        | Drinking water approval                                                                          |                                                                                           |                                                                                              |                                                                                             |                                                                                             | Atmospheres explosibles approval                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|                        | DM174/2004<br> | ACS<br> | DVGW *<br> | WRAS<br> | PZH<br> | ATEX 2014/34/UE<br> |
| <u>Mechanical seal</u> | SiC/Carbon_ EPDM                                                                                 | SiC/Carbon_ EPDM                                                                          | All variations with EPDM on page 6-7                                                         | SiC/Carbon_ EPDM                                                                            | All variations with EPDM on page 6-7                                                        | All variations on page 6-7                                                                              |
| EVMSG                  | ●                                                                                                | -                                                                                         | -                                                                                            | -                                                                                           | ●                                                                                           | ●                                                                                                       |
| EVMS                   | **                                                                                               | ●                                                                                         | ●                                                                                            | ●                                                                                           | ●                                                                                           | ●                                                                                                       |
| EVMSL                  | **                                                                                               | ●                                                                                         | ●                                                                                            | ●                                                                                           | ●                                                                                           | ●                                                                                                       |

Note: \* DVGW W270 is certified for elastomers. Reg. Nr. DW-5253CR0217

KTW is certified for organic components.

\*\* only for EVMS(.)1-20

● Available

##### 8. Conform to the provisions of the European directives



#### [Main Product Features]

##### 1. Innovative hydraulic solutions

- The **Commercial motors** can be fitted to all of the pump models without any modifications thanks to low pump axial thrust load.
- The low axial thrust load impellers can ensure **long life of the motor bearings**.
- High pump efficiency** classified in MEI > 0.7 for all models.

##### 2. Energy saving

- The **high efficiency IE3 motors** starting from 0.75 kW complied with the EuP 2005/32/EC and ErP 2009/125/EC directives.
- The **VFD (Variable frequency drive)** and **the commercial sensor** can be directly mounted on EVMS to **maintain physical constant operations** such as pumping pressure depending on the conditions of use.

##### 3. Piping connection options

- The various pipe connections are available depending on the application requirements **Oval flange / Round flange / Loose flange / Victaulic® connection / Clamp connection**.
- The external dimensions can be adjusted to the replacement of the existing pump in the wide majority.

##### 4. Shaft seal solutions

- Silicon carbide inclusions with graphite can be used as **dry lubricant to reduce friction**.
- It's conforming to EN 12756 (ex DIN 24960)

##### 5. Easy maintenance

- The **cartridge mechanical seal** enables **the plug in replacement** of the shaft seal without disassembling the motor bracket.
- The **spacer coupling** allows easy maintenance without having to remove heavy motors over 5.5 kW

##### 6. Smart plug solutions

Air ventilation plug / Water filling & sensor plug / Commercial sensor fitting / Measurements for suction and discharge pressure / drain.

50 Hz

## VERTICAL MULTISTAGE PUMPS

EVMS

2.2

PRODUCT SPECIFICATIONS  
EVMS(.).1-3-5-10-15-20

PRODUCT SPECIFICATIONS

| PUMP                    |                           |                                                                                  |                                                               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
|-------------------------|---------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------|---|----|----|--------------------|----------------------|---|---|----|----|----|-----------------------------|---|---|----|----|----|---|
| Version                 |                           | EVMSG                                                                            |                                                               |   |    |    |                    | EVMS                 |   |   |    |    |    | EVMSL                       |   |   |    |    |    |   |
| Operating range         | Nominal flow rate (m³/h ) | 1                                                                                | 3                                                             | 5 | 10 | 15 | 20                 | 1                    | 3 | 5 | 10 | 15 | 20 | 1                           | 3 | 5 | 10 | 15 | 20 |   |
|                         | Maximum working pressure  | 1.6 / 2.5 MPa (16 / 25 bar)                                                      |                                                               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
|                         | Liquid temperature range  | -30°C to 140°C<br>(please contact EBARA in case of -30°C to -15°C, or 120-140°C) |                                                               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
| Key Components Material | Impeller                  | EN 1.4301 (AISI 304)                                                             |                                                               |   |    |    |                    |                      |   |   |    |    |    | EN 1.4404 (AISI 316L)       |   |   |    |    |    |   |
|                         | Intermediate casing       | EN 1.4301 (AISI 304)                                                             |                                                               |   |    |    |                    |                      |   |   |    |    |    | EN 1.4404 (AISI 316L)       |   |   |    |    |    |   |
|                         | Liner ring                | EN 1.4301 (AISI 304) + PPS                                                       |                                                               |   |    |    |                    |                      |   |   |    |    |    | EN 1.4404 (AISI 316L) + PPS |   |   |    |    |    |   |
|                         | Bottom casing             | Cast Iron                                                                        |                                                               |   |    |    |                    | EN 1.4301 (AISI 304) |   |   |    |    |    | EN 1.4404 (AISI 316L)       |   |   |    |    |    |   |
|                         | Casing cover              | EN 1.4301 (AISI 304)                                                             |                                                               |   |    |    |                    |                      |   |   |    |    |    | EN 1.4404 (AISI 316L)       |   |   |    |    |    |   |
|                         | Shaft                     | EN 1.4301 (AISI 304)                                                             | EVMSG / EVMS 1-3-10 , EVMSG / EVMS 5-15-20 (depend on models) |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
|                         |                           | EN 1.4404 (AISI 316L)                                                            | EVMSL 1-3-10 , EVMSL 5-15-20 (depend on models)               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
|                         |                           | EN 1.4462 (AISI 329A)                                                            | EVMSG / EVMS / EVMSL 5-15-20 (depend on models)               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
|                         | Shaft sleeve bearing      | Tungsten carbide                                                                 |                                                               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
|                         | Shaft Seal                | See the shaft seal options                                                       |                                                               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
|                         | O-ring                    | EPDM                                                                             | ●                                                             | ● | ●  | ●  | ●                  | ●                    | ● | ● | ●  | ●  | ●  | ●                           | ● | ● | ●  | ●  | ●  | ● |
|                         |                           | FPM                                                                              | ●                                                             | ● | ●  | ●  | ●                  | ●                    | ● | ● | ●  | ●  | ●  | ●                           | ● | ● | ●  | ●  | ●  | ● |
|                         | Outer casing              | EN 1.4301 (AISI 304)                                                             |                                                               |   |    |    |                    |                      |   |   |    |    |    | EN 1.4404 (AISI 316L)       |   |   |    |    |    |   |
|                         | Motor Bracket             | Cast Iron                                                                        |                                                               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
|                         | Tie rod                   | EN 1.4057 (AISI 431)                                                             |                                                               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
|                         | Coupling                  | up to 4.0 kW                                                                     | Die cast aluminium                                            |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
| from 5.5 kW             |                           | Cast Iron                                                                        |                                                               |   |    |    |                    |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
| Base                    | Cast Iron                 |                                                                                  |                                                               |   |    |    | Die cast aluminium |                      |   |   |    |    |    |                             |   |   |    |    |    |   |
| Pipe connection         | Oval flange               | up to 16 bar                                                                     | ●                                                             | ● | ●  | ●  | ●                  | ●                    | ● | ● | ●  | ●  | ●  | ●                           | ● | ● | ●  | ●  | ●  |   |
|                         | Round flange (DIN)        | up to 16 bar                                                                     | ●                                                             | ● | ●  | ●  | ●                  | ●                    | ● | ● | ●  | ●  | ●  | ●                           | ● | ● | ●  | ●  | ●  |   |
|                         |                           | from 16 bar to 25 bar                                                            | ●                                                             | ● | ●  | ●  | ●                  | ●                    | ● | ● | ●  | ●  | ●  | ●                           | ● | ● | ●  | ●  | ●  |   |
|                         | Loose round flange (DIN)  | up to 16 bar                                                                     |                                                               |   |    |    |                    |                      | ● | ● | ●  | ●  | ●  | ●                           | ● | ● | ●  | ●  | ●  |   |
|                         |                           | from 16 bar to 25 bar                                                            |                                                               |   |    |    |                    |                      | ● | ● | ●  | ●  | ●  | ●                           | ● | ● | ●  | ●  | ●  |   |
| Victaulic®              | up to 16/25 bar           |                                                                                  |                                                               |   |    |    |                    | ●                    | ● | ● | ●  | ●  | ●  | ●                           | ● | ● | ●  | ●  | ●  |   |
| Clamp                   | up to 16/25 bar           |                                                                                  |                                                               |   |    |    |                    | ●                    | ● | ● | ●  | ●  | ●  | ●                           | ● | ● | ●  | ●  | ●  |   |

● Available

| MOTOR        |                          |                                               |                                                                  |
|--------------|--------------------------|-----------------------------------------------|------------------------------------------------------------------|
| Power Source | Frequency                | 50 Hz                                         |                                                                  |
|              | Phase                    | Single Phase                                  | Three Phase                                                      |
|              | Power rating             | 0.37 + 2.2 kW<br>0.5 + 3.0 HP                 | 0.37 + 18.5 kW<br>0.5 + 25 HP                                    |
|              | Voltage                  | 230 ± 10% V                                   | 230/400 ± 10% V (up to 4.0 kW)<br>400/690 ± 10% V (above 5.5 kW) |
| Type         | Type                     | IC411 - TEFC                                  |                                                                  |
|              | Efficiency Level         | from 0.37 kW up to 2.2 kW                     | - : from 0.37 kW up to 0.55 kW<br>IE3 : above 0.75 kW            |
|              | No° of poles             | 2                                             |                                                                  |
|              | Protection degree        | IP55 : up to 11 kW<br>IP56 : above 15 kW      |                                                                  |
|              | Insulation Class         | F (temperature rise class B)                  |                                                                  |
| Others       | Thermal Protection       | -                                             | PTC sensor pre-installed for motors of 1.5 kW and above          |
|              | Casing Material          | Aluminium                                     |                                                                  |
|              | Flange mount (IEC motor) | IM B14 : up to 4.0 kW<br>IM B5 : above 5.5 kW |                                                                  |
|              | Terminal Box fixing      | -                                             | Unlosable screw and sealing from 0.75 kW to 18.5 kW              |

### PRODUCT SPECIFICATIONS EVMS(.)32-45-64-90

2.2

PRODUCT SPECIFICATIONS

| PUMP                      |                           |                                                                                                                                               |    |    |    |                                             |    |    |    |                                          |    |    |    |
|---------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|---------------------------------------------|----|----|----|------------------------------------------|----|----|----|
| Version                   |                           | EVMSG                                                                                                                                         |    |    |    | EVMS                                        |    |    |    | EVMSL                                    |    |    |    |
| Operating range           | Nominal flow rate (m³/h ) | 32                                                                                                                                            | 45 | 64 | 90 | 32                                          | 45 | 64 | 90 | 32                                       | 45 | 64 | 90 |
|                           | Maximum working pressure  | 1.6 / 2.5 / 3.0 / 3.5 MPa (16 / 25 / 30 / 35 bar)                                                                                             |    |    |    |                                             |    |    |    |                                          |    |    |    |
|                           | Liquid temperature range  | -30°C to 140°C<br>(please contact EBARA in case of -30°C to -15°C, or 120-140°C)                                                              |    |    |    |                                             |    |    |    |                                          |    |    |    |
| Key Components Material * | Impeller                  | EN 1.4301 (AISI 304)                                                                                                                          |    |    |    | EN 1.4301 (AISI 304)                        |    |    |    | EN 1.4404 (AISI 316L)                    |    |    |    |
|                           | Intermediate casing       | EN 1.4301 (AISI 304)                                                                                                                          |    |    |    | EN 1.4301 (AISI 304)                        |    |    |    | EN 1.4404 (AISI 316L)                    |    |    |    |
|                           | Liner ring                | EN 1.4301 (AISI 304) + PPS                                                                                                                    |    |    |    | EN 1.4301 (AISI 304) + PPS                  |    |    |    | EN 1.4404 (AISI 316L) + PPS              |    |    |    |
|                           | Bottom casing             | Cast Iron EN GJL-250 EN 1561<br>(for EVMSG32 and EVMSG45-90 up to 16 bar)<br>Cast Iron EN GJS 400-15 EN 1563<br>(for EVMSG45-90 above 25 bar) |    |    |    | EN 1.4308 (ASTM CF8)                        |    |    |    | EN 1.4408 (ASTM CF8M)                    |    |    |    |
|                           | Casing cover              | EN 1.4301 (AISI 304)                                                                                                                          |    |    |    | EN 1.4301 (AISI 304)                        |    |    |    | EN 1.4404 (AISI 316L)                    |    |    |    |
|                           | Shaft                     | EN 1.4301 (AISI 304)                                                                                                                          |    |    |    | EVMSG / EVMS 32-45-64-90 (depend on models) |    |    |    | EVMSL 32-45-64 (depend on models)        |    |    |    |
|                           | Shaft sleeve bearing      | EN 1.4404 (AISI 316L)                                                                                                                         |    |    |    | EN 1.4404 (AISI 316L)                       |    |    |    | EVMSL 45-64-90 (depend on models)        |    |    |    |
|                           | Shaft Seal                | EN 1.4462 (AISI 329A)                                                                                                                         |    |    |    | EN 1.4462 (AISI 329A)                       |    |    |    | EN 1.4462 (AISI 329A)                    |    |    |    |
|                           | O-ring                    | EPDM                                                                                                                                          |    |    |    | EPDM                                        |    |    |    | EPDM                                     |    |    |    |
|                           | O-ring                    | FPM                                                                                                                                           |    |    |    | FPM                                         |    |    |    | FPM                                      |    |    |    |
|                           | Outer casing              | EN 1.4301 (AISI 304)                                                                                                                          |    |    |    | EN 1.4301 (AISI 304)                        |    |    |    | EN 1.4404 (AISI 316L)                    |    |    |    |
|                           | Motor Bracket             | Cast Iron EN GJS 400-15 EN 1563                                                                                                               |    |    |    | Cast Iron EN GJS 400-15 EN 1563             |    |    |    | Cast Iron EN GJS 400-15 EN 1563          |    |    |    |
|                           | Tie rod                   | EN 1.4057 (AISI 431)                                                                                                                          |    |    |    | EN 1.4057 (AISI 431)                        |    |    |    | EN 1.4057 (AISI 431)                     |    |    |    |
|                           | Coupling                  | up to 4.0 kW                                                                                                                                  |    |    |    | Die cast Aluminium EN AB-AISI11 Cu2 (Fe)    |    |    |    | Die cast Aluminium EN AB-AISI11 Cu2 (Fe) |    |    |    |
|                           | Coupling                  | from 5.5 kW to 30 kW                                                                                                                          |    |    |    | Cast Iron EN GJL250 EN 1561                 |    |    |    | Cast Iron EN GJL250 EN 1561              |    |    |    |
|                           | Coupling                  | above 37 kW                                                                                                                                   |    |    |    | Carbon Steel                                |    |    |    | Carbon Steel                             |    |    |    |
| Pipe connection           | Base                      | Cast Iron EN GJL200 EN 1561                                                                                                                   |    |    |    | Cast Iron EN GJL200 EN 1561                 |    |    |    | Cast Iron EN GJL200 EN 1561              |    |    |    |
|                           | Round flange (DIN)        | ●                                                                                                                                             | ●  | ●  | ●  | ●                                           | ●  | ●  | ●  | ●                                        | ●  | ●  | ●  |
| Pipe connection           | Louse round flange (DIN)  | ●                                                                                                                                             | ●  | ●  | ●  | ●                                           | ●  | ●  | ●  | ●                                        | ●  | ●  | ●  |

● Available

| MOTOR        |                          |                                                                  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|--------------------------|------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Power Source | Frequency                | 50 Hz                                                            |  |  |  |  |  |  |  |  |  |  |  |
|              | Phase                    | Three Phase                                                      |  |  |  |  |  |  |  |  |  |  |  |
|              | Power rating             | 1.5 ÷ 45 kW<br>2.0 ÷ 60 HP                                       |  |  |  |  |  |  |  |  |  |  |  |
|              | Voltage                  | 230/400 ± 10% V (up to 4.0 kW)<br>400/690 ± 10% V (above 5.5 kW) |  |  |  |  |  |  |  |  |  |  |  |
| Type         | Type                     | IC411 - TEFC                                                     |  |  |  |  |  |  |  |  |  |  |  |
|              | Efficiency Level         | IE3                                                              |  |  |  |  |  |  |  |  |  |  |  |
|              | No° of poles             | 2                                                                |  |  |  |  |  |  |  |  |  |  |  |
|              | Protection degree        | IP55 : up to 11 kW<br>IP56 : above 15 kW                         |  |  |  |  |  |  |  |  |  |  |  |
|              | Insulation Class         | F (temperature rise class B)                                     |  |  |  |  |  |  |  |  |  |  |  |
| Others       | Thermal Protection       | PTC                                                              |  |  |  |  |  |  |  |  |  |  |  |
|              | Casing Material          | Aluminium : up to 30 KW<br>Cast Iron : above 37 KW               |  |  |  |  |  |  |  |  |  |  |  |
|              | Flange mount (IEC motor) | IM B14 : up to 4.0 kW<br>IM B5 : above 5.5 kW                    |  |  |  |  |  |  |  |  |  |  |  |
|              | Terminal Box fixing      | Unlosable screw and sealing from 1.5 kW to 45 kW                 |  |  |  |  |  |  |  |  |  |  |  |