# VORTEX

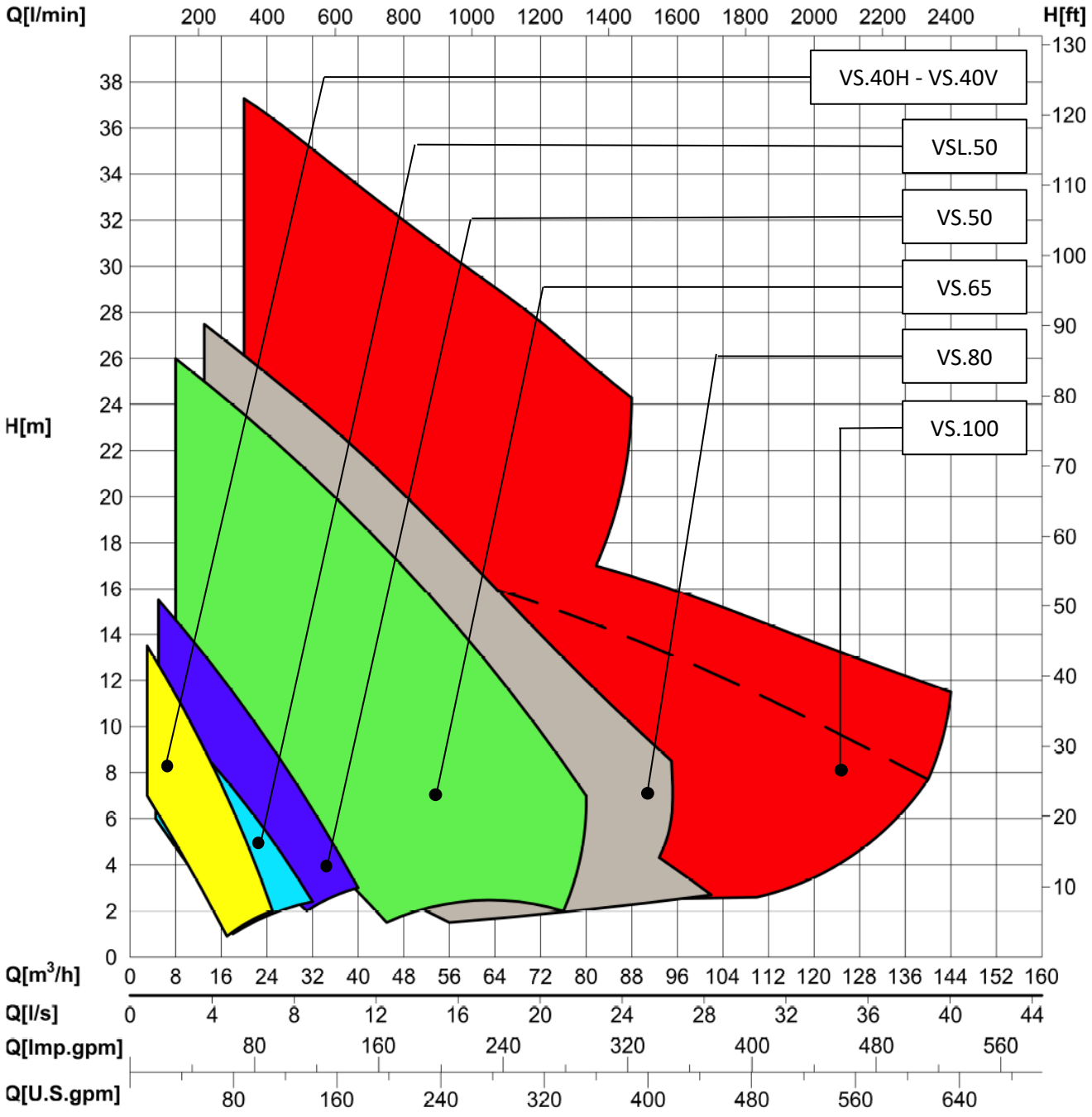
VS

## SUBMERSIBLE
## PUMPS FOR DIRTY WATERS

with vortex impeller [VS] suitable for sludge
and waste waters with suspended solids

## POMPE
## SOMMERGIBILI PER ACQUE SPORCHE

con girante vortex [VS] idonea per fanghi
e acque di scarico con solidi sospesi



# VORTEX VS

EN

Submersible pumps with a backward open impeller. Hydraulic solution that guarantees a wide free passage of solids reducing the risk of blocking and clogging of the impeller.
Very suitable to pump sewage and domestic/industrial waste waters.

IT

Elettropompe sommergibili con girante semiaperta arretrata. Soluzione idraulica che garantisce un ampio passaggio libero di corpi solidi, riducendo il pericolo di blocco della girante ed intasamento del corpo pompa.
Molto indicata per il pompaggio di reflui civili, reflui industriali ed acque luride in genere.

1 Cast Iron G25 Motor Body.
Corpo motore in ghisa GG25.

2 Stator (1 ~ or 3 ~).
Statore avvolto (1 ~ or 3 ~).

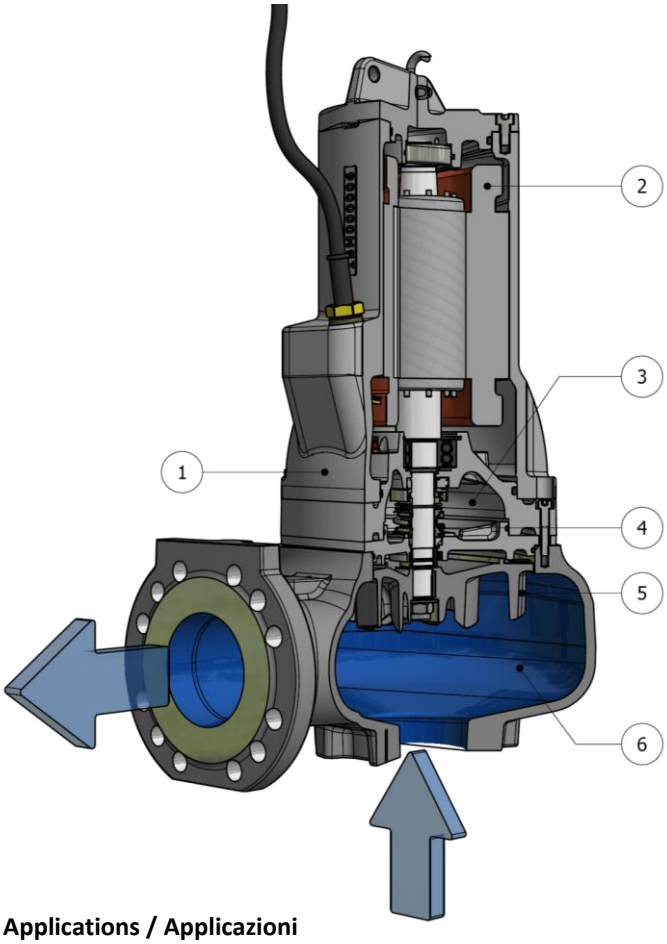
3 Oil Chamber - cooling and lubrication of the mechanical seals.

Camera olio - raffreddamento e lubrificazione delle tenute meccaniche.

4 Mechanical seals.
Tenute meccaniche.

5 Impeller.
Girante .

6 GG25 Cast iron body pump.
Corpo Pompa in ghisa GG25.




**Area of use / Settori d'impiego**

- Waste water treatment - civil / industrial plants
  Trattamento delle acque di scarico - impianti civili / industriali.

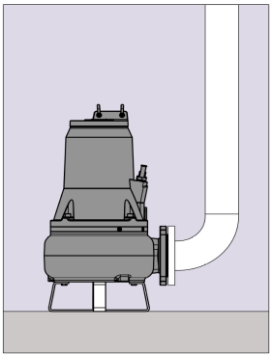
- Drainage and lifting in domestic and residential systems.
  Drenaggio e sollevamento in impianti domestici e residenziali.

**Applications / Applicazioni**

- Water and sludge from civil, industrial, domestic and agricultural waste..
  Acque e fanghi provenienti da scarichi civili, industriali, domestici ed agricoli.
- Drainage, rainwater and process water.
  Acque di drenaggio, piovane e di processo.

**Types of installation - Tipi di installazione**

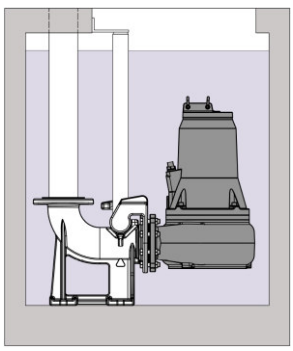
**S** Transportable underwater
Trasportabile in immersione



- Versatile solution suitable for various uses. A hose connection or connection flange is required for the rigid discharge line. The pump must be placed on a support stand.

- Soluzione versatile adatta a diversi impieghi.
E' necessario un attacco per tubo flessibile o flangia di collegamento per la tubazione premente rigida. La pompa va posizioata su un cavalletto di sostegno.

**FC** Fixed submersible with coupling device
Fissa in immersione con dispositivodi accoppiamento



- Automatic positioning system of the pump inside the tank connected to the discharge pipe. The pump is lowered or extracted with a lifting chain; the pump slides along two guide rails until it engages with the foot coupling.
- Sistema di posizionamento automatico della pompa all'interno della vasca collegato alla tubazione premente. La pompa viene calata o estratta con catena di sollevamento; scorre lungo due tubi guida fino ad agganciarsi al piede di accoppiamento.

# SUBMERSIBLE PUMPS
## POMPE SOMMERGIBILI

# VS.40H

### VS.40H_[GM.110L] series

THREE-PHASE MOTORS 3~

VS.40H_04.2T__[GM.110L] - 2 poles - 0,4 KW

SINGLE-PHASE MOTORS 1~

VS.40H_04.2M_[GM.110L] - 2 poles - 0,4 KW

VS.40H_04.2MA_[GM.110L] - 2 poles - 0,4 KW

### VS.40H_[GM.110] series

THREE-PHASE MOTORS 3~

VS.40H_06.2T_[GM.110] - 2 poles - 0,6 KW

VS.40H_06.2TA_[GM.110] - 2 poles - 0,6 KW

VS.40H_09.2T_[GM.110] - 2 poles - 0,9 KW

VS.40H_09.2TA_[GM.110] - 2 poles - 0,9 KW

VS.40H_11.2T_[GM.110] - 2 poles - 1,1 KW

VS.40H_11.2TA_[GM.110] - 2 poles - 1,1 KW

SINGLE-PHASE MOTORS 1~

VS.40H_06.2M_[GM.110] - 2 poles - 0,6 KW

VS.40H_06.2MA_[GM.110] - 2 poles - 0,6 KW

VS.40H_09.2M_[GM.110] - 2 poles - 0,9 KW

VS.40H_09.2MA_[GM.110] - 2 poles - 0,9 KW

VS.40H_11.2M_[GM.110] - 2 poles -1,1 KW

VS.40H_11.2MA_[GM.110] - 2 poles -1,1 KW



VS.40H_[GM.110L]



VS.40H_[GM.110]

- Submersible pumps with vortex impeller, compact and robust construction.
- Cast iron construction; base treatment with water-based acrylic primer and final finishing with water-based paint (30µm). Special coating with two-component epoxy resistant to abrasion on request (80µm).

- Pompe sommergibili con girante arretrata a vortice, compatte e di robusta costruzione.
- Costruzione in ghisa; trattamento di fondo con primer acrilico a base d'acqua e rifinitura finale con vernice a base d'acqua (30µm). Rivestimento speciale con bicomponente epossidico resistente all'abrasione (80µm) su richiesta.

- Pompes submersibles avec roue vortex, construction compacte et robuste.
- Construction en fonte ; traitement de base avec apprêt acrylique à base d'eau et finition finale avec peinture à base d'eau (30µ Revêtement spécial avec époxy bi-composant résistant à l'abrasion (80µm) sur demande.

- Bombas sumergibles con impulsor vortex, construcción compacta y robusta.
- Construcción de hierro fundido; tratamiento base con imprimación acrílica al agua y acabado final con barniz al agua (30µ Revestimiento especial con epoxi bicomponente (80µm) resistente a la abrasión, bajo pedido.

## **OPERATING LIMITS** - LIMITI DI UTILIZZO

- Tmax = 40 °C standard product
  Tmax = 70 °C special version
  6 ≤ PH ≤12
  Chloride content < 200 mg/l
  Abrasive solid content < 1 mg/l
  Density ~ 1 kg/dm$^3$
  Viscosity ~ 1 mm$^2$/s;

- Tmax = 40 °C prodotto standard
  Tmax = 70 °C versioni speciali
  6 ≤ PH ≤12
  Contenuto cloruri < 200 mg/l
  Contenuto solidi abrasivi < 1mg/l
  Densità ~ 1kg/dm$^3$
  Viscosità ~ 1mm$^2$/s;

- Tmax = 40 °C produit standard
  Tmax = 70 °C versions spéciales
  6 ≤ PH ≤12
  Teneur en chlorurec< 200 mg/l
  Teneur en solides abrasifs < 1mg/l
  Densité ~ 1kg/dm$^3$
  Viscosité ~ 1mm$^2$/s;

- Tmax = 40 °C producto estándar
  Tmax = 70 °C versiones especiales
  6 ≤ PH ≤12
  Contenido de cloruro< 200 mg/l
  Contenido sólidos abrasivos <1mg/l
  Densidad ~ 1kg/dm$^3$
  Viscosidad ~ 1mm$^2$/s;

# SUBMERSIBLE PUMPS
POMPE SOMMERGIBILI

# VS.40H

## TECHNICAL DATA - DATI TECNICI

### VS.40H_[GM.110L]

| MODELS - MODELLI | VS.40H_04.2M | VS.40H_04.2MA | VS.40H_04.2T |
|---|---|---|---|
| RPM/Poles - NGiri al min/Nr poli | 3000 / 2 | 3000 / 2 | 3000 / 2 |
| P2: Shaft power - Potenza all'albero [kW] | 0,4 | 0,4 | 0,4 |
| P1: Input Power - Potenza assorbita [kW] | 0,59 | 0,59 | 0,59 |
| Power Factor - Fattore di potenza [Cosφ] | 0,95 | 0,95 | 0,89 |
| Power supply/Freq - Alimentazione/Freq [V/Hz] | 1 ~ 230 / 50 | 1 ~ 230 / 50 | 3 ~ 400 / 50 |
| Single-phase - Monofase | ● | ● | |
| Three-phase - Triase | | | ● |
| Starting - Avviamento | 16 µF | 16 µF | D.O.L. |
| Rated current - Corrente nominale [A] | 3,5 | 3,5 | 1,2 |
| Starting current - Corrente di spunto [A] | 9,6 | 9,6 | 6 |
| Free Passage - Passaggio libero Ø [mm] | 32 | 32 | 32 |
| Impeller diameter - Diametro girante [mm] | 90 | 90 | 90 |
| Float level switch - Galleggiante | - | ● | - |
| Power cable type/lenght - Cavo alim. tipo/lungh. [m] | H07RN-F 3G1,5 / 5 | | H07RN-F 4G1 / 5 |
| Signal cable type/lenght - Cavo segn. tipo/lungh. [m] | - | | - |
| Nr. Starts per hour - Nr. Avviamenti / ora | 30 | 30 | 30 |
| Pump weight - Peso pompa [kg] | 15 | 15 | 15 |

### VS.40H_[GM.110]

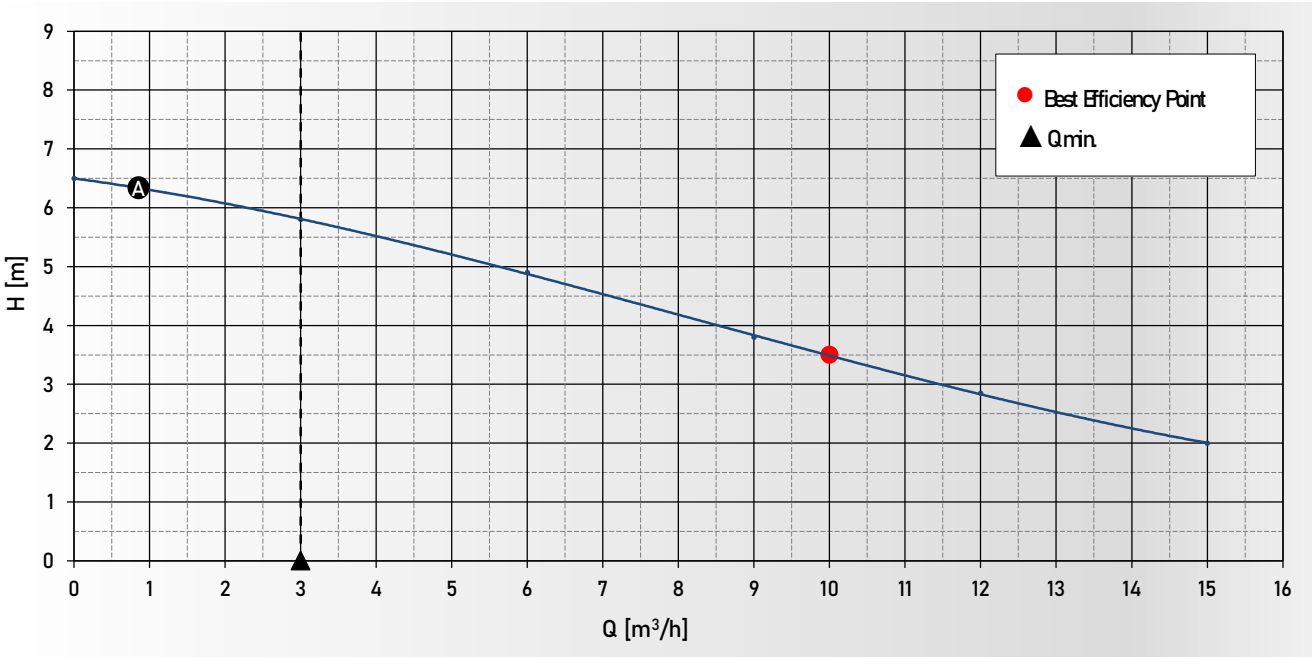
| MODELS - MODELLI | VS.40H_06.2M | VS.40H_06.2MA | VS.40H_09.2M | VS.40H_09.2MA | VS.40H_11.2M | VS.40H_11.2MA | VS.40H_06.2T | VS.40H_06.2TA | VS.40H_09.2T | VS.40H_09.2TA | VS.40H_11.2T | VS.40H_11.2TA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPM/Poles - NGiri al min/Nr poli | 3000 / 2 | | 3000 / 2 | | 3000 / 2 | | 3000 / 2 | | 3000 / 2 | | 3000 / 2 | |
| P2: Shaft power - Potenza all'albero [kW] | 0,6 | | 0,9 | | 1,1 | | 0,6 | | 0,9 | | 1,1 | |
| P1: Input Power - Potenza assorbita [kW] | 0,9 | | 1,18 | | 1,48 | | 0,9 | | 1,18 | | 1,47 | |
| Power Factor - Fattore di potenza [Cosφ] | 0,95 | | 0,95 | | 0,96 | | 0,84 | | 0,85 | | 0,85 | |
| Power supply/Freq - Alimentazione/Freq [V/Hz] | 1 ~ 230 / 50 | | 1 ~ 230 / 50 | | 1 ~ 230 / 50 | | 3 ~ 400 / 50 | | 3 ~ 400 / 50 | | 3 ~ 400 / 50 | |
| Single-phase - Monofase | ● | | ● | | ● | | | | | | | |
| Three-phase - Triase | | | | | | | ● | | ● | | ● | |
| Starting - Avviamento | 20 µF | | 25 µF | | 25 µF | | D.O.L. | | D.O.L. | | D.O.L. | |
| Rated current - Corrente nominale [A] | 4,5 | | 6,5 | | 7,7 | | 1,6 | | 2,0 | | 2,5 | |
| Starting current - Corrente di spunto [A] | 13,5 | | 21 | | 21,6 | | 8,0 | | 11 | | 14 | |
| Free Passage - Passaggio libero Ø [mm] | 40 | | 40 | | 40 | | 40 | | 40 | | 40 | |
| Impeller diameter - Diametro girante [mm] | 109 | | 124 | | 128 | | 109 | | 124 | | 128 | |
| Float level switch - Galleggiante | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● |
| Power cable type/lenght - Cavo alim. tipo/lungh. [m] | H07RN-F 3G1,5 / 10 | | | | | | H07RN-F 4G1 / 10 | | | | | |
| Signal cable type/lenght - Cavo segn. tipo/lungh. [m] | - | | | | | | - | | | | | |
| Nr. Starts per hour - Nr. Avviamenti / ora | 30 | | 30 | | 30 | | 30 | | 30 | | 30 | |
| Pump weight - Peso pompa [kg] | 23 | | 24 | | 24,5 | | 23 | | 24 | | 24,5 | |

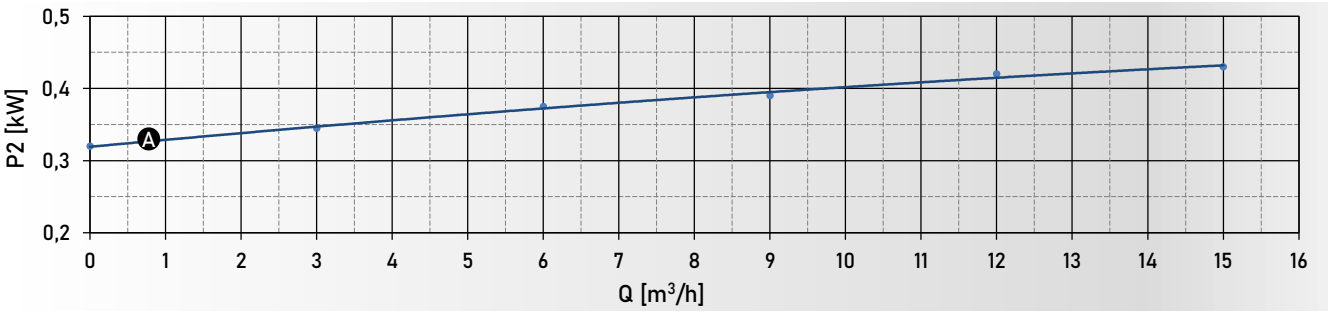
# SUBMERSIBLE PUMPS
POMPE SOMMERGIBILI

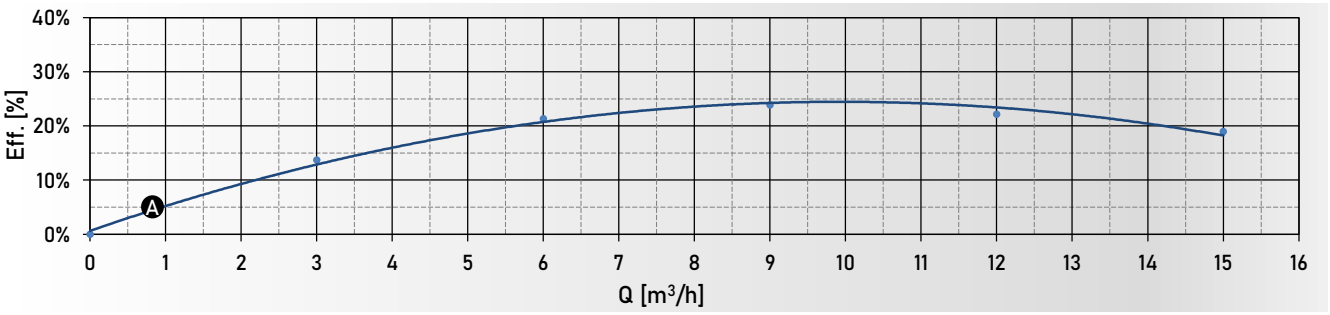
# VS.40H_[GM.110L]

Ⓐ = VS.40H_04.2T_[GM110L] / VS.40H_04.2M/MA_[GM110L]* - 0,4 KW

50 Hz Three-phase motors - 2 poles - 3000 rpm
*50 Hz Single-phase motors - 2 poles - 3000 rpm




| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Q | m³/h | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 |
| | L/min | 0 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 |
| | L/s | 0 | 0,8 | 1,7 | 2,5 | 3,3 | 4,2 | 5,0 | 5,8 | 6,7 |
| Ⓐ =VS.40H_04.2T/TA/M/MA | | 6,5 | 5,8 | 4,9 | 3,8 | 2,9 | 2,0 | | | |

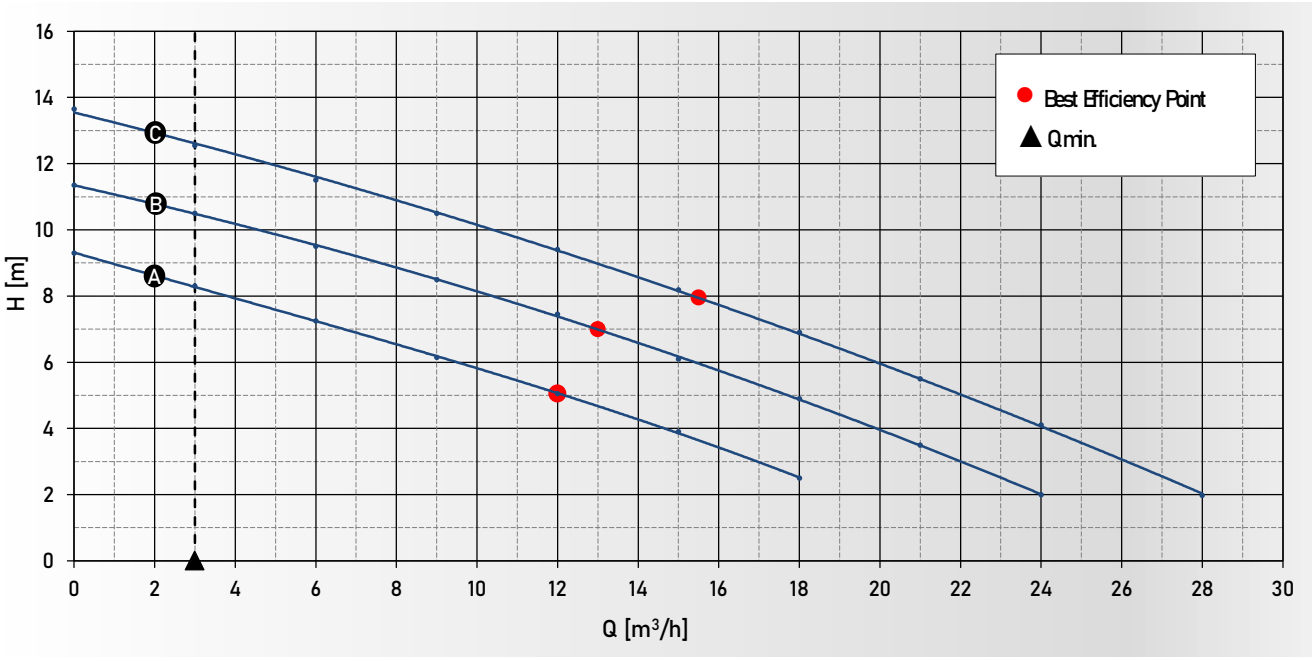
H [m]

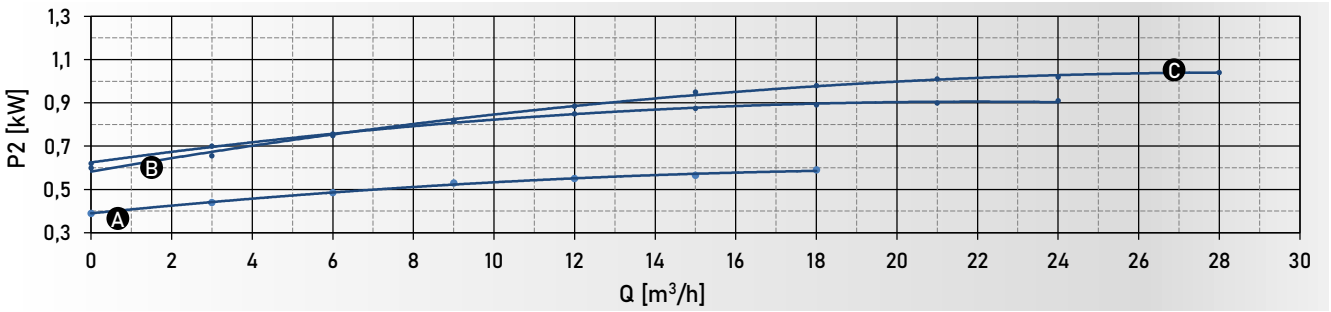
# SUBMERSIBLE PUMPS
## POMPE SOMMERGIBILI

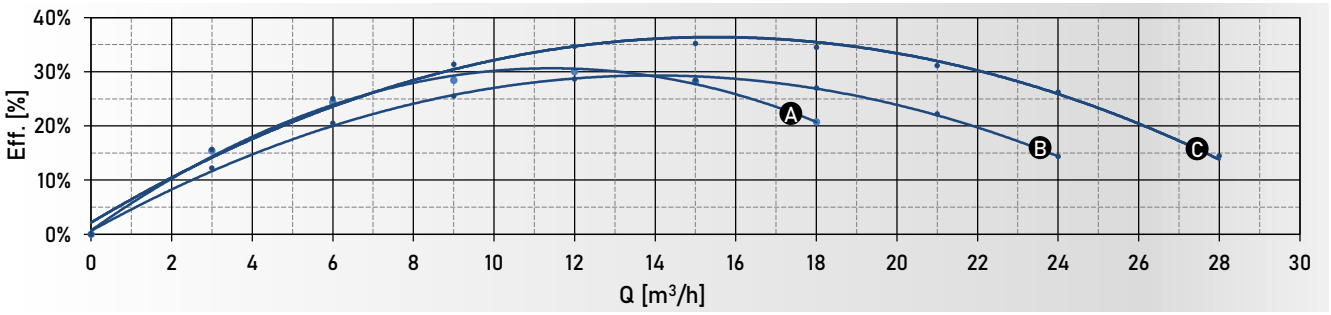
# VS.40H_[GM.110]

Ⓐ = VS.40H_06.2T / TA_[GM110] / VS.40H_06.2M / MA_[GM110]* - 0,6 KW
Ⓑ = VS.40H_09.2T / TA_[GM110] / VS.40H_09.2M / MA_[GM110]* - 0,9 KW
Ⓒ = VS.40H_11.2T / TA_[GM110] / VS.40H_11.2M / MA_[GM110]* - 1,1 KW

50 Hz Three-phase motors - 2 poles - 3000 rpm
* 50 Hz Single-phase motors - 2 poles - 3000 rpm




| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q | m³/h | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 28 |
| | L/min | 0 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 467 |
| | L/s | 0 | 0,8 | 1,7 | 2,5 | 3,3 | 4,2 | 5,0 | 5,8 | 6,7 | 7,8 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ⓐ | =VS.40H_06.2T/TA/M/MA | 9,3 | 8,3 | 7,3 | 6,2 | 5,1 | 3,9 | 2,50 | | | |
| Ⓑ | =VS.40H_09.2T/TA/M/MA | 11,4 | 10,5 | 9,5 | 8,5 | 7,45 | 6,10 | 4,90 | 3,50 | 2,00 | |
| Ⓒ | =VS.40H_11.2T/TA/ M/MA | 13,7 | 12,6 | 11,5 | 10,5 | 9,40 | 8,19 | 6,90 | 5,50 | 4,10 | 1,98 |

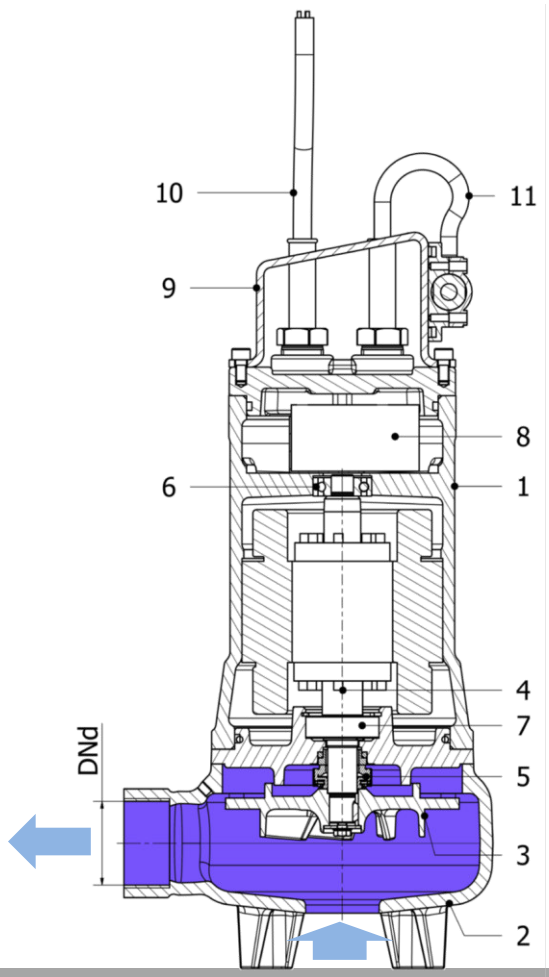
H [m]

# SUBMERSIBLE PUMPS
POMPE SOMMERGIBILI

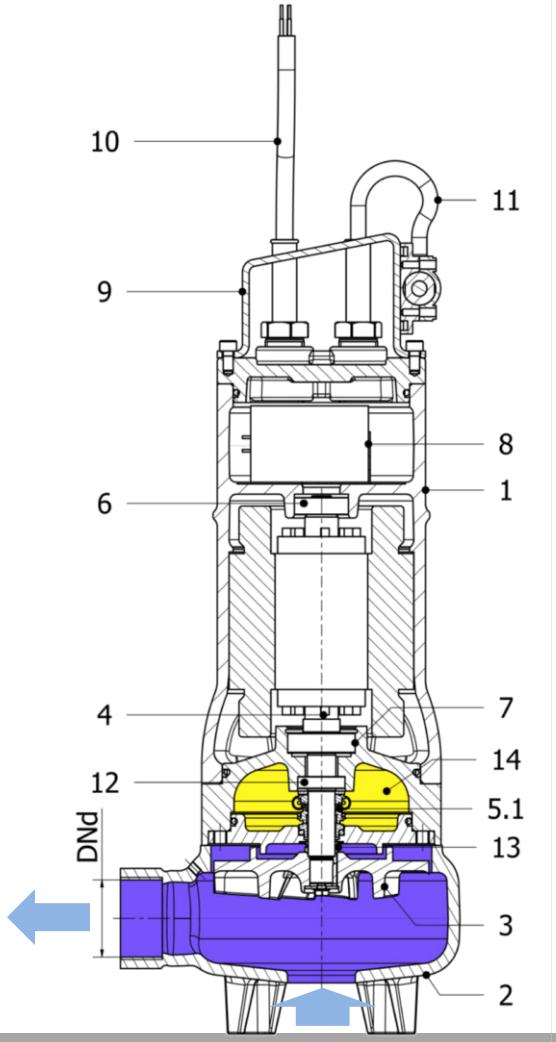
# VS.40H

## SECTIONAL VIEWS - VISTE IN SEZIONE

VS.40H_[GM.110L]




VS.40H_[GM.110]




| Pos. | Description | Descrizione | Material - Materiale |
|---|---|---|---|
| 1 | Motor body | Corpo motore | Cast Iron GG25 - Ghisa |
| 2 | Pump body | Corpo idraulico | Cast Iron GG25 - Ghisa |
| 3 | Impeller | Girante | Cast Iron GG25 - Ghisa |
| 4 | Shaft | Albero | Steel AISI 420B - Acciaio |
| 5 | Mechanical seal | Tenuta meccanica | Carbon graphite / Al-Oxide - NBR |
| 5.1 | Mechanical seal | Tenuta meccanica | Silicon carbide / Silicon Carbide |
| 6 | Upper beraing | Cuscinetto superiore | 6201 2RS1 |
| 7 | Lower bearing | Cuscinetto inferiore | 6203-2RS1 |
| 8 | Capacitor (M-MA models) | Condensatore (modelli M-MA) | |
| 9 | Handle | Maniglia | Galvanized steel - ferro zincato |
| 10 | Supply Cable | Cavo elettrico | H07RN-F |
| 11 | Float level switch (M-MA models) | Galleggiante (modelli M-MA) | |
| 12 | Radial seal | Anello tenuta radiale | NBR |
| 13 | Seal V-ring | Anello tenuta V-ring | NBR |
| 14 | Oil chamber - cooling and lubrication of mechanical seal | Camera olio - raffreddamento e lubrificazione tenuta meccanica | |
| DNd | Delivery outlet | Bocca di mandata | Feamle G 1"1/2 - femmina |
| | Screw quality grade | Grado di qualità delle viti | A2 |

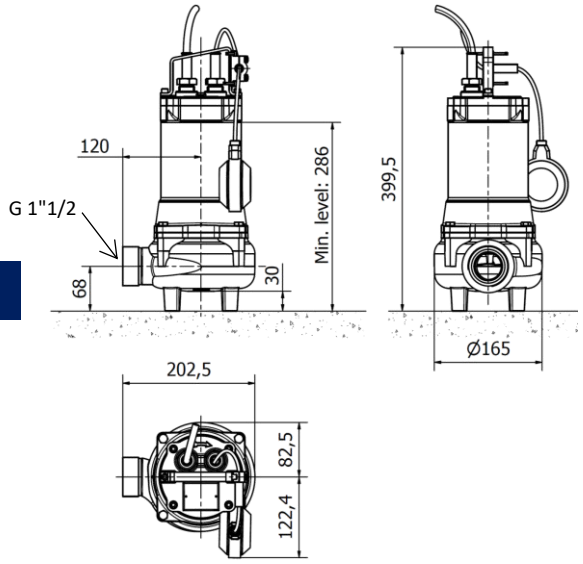
# SUBMERSIBLE PUMPS
POMPE SOMMERGIBILI

# VS.40H

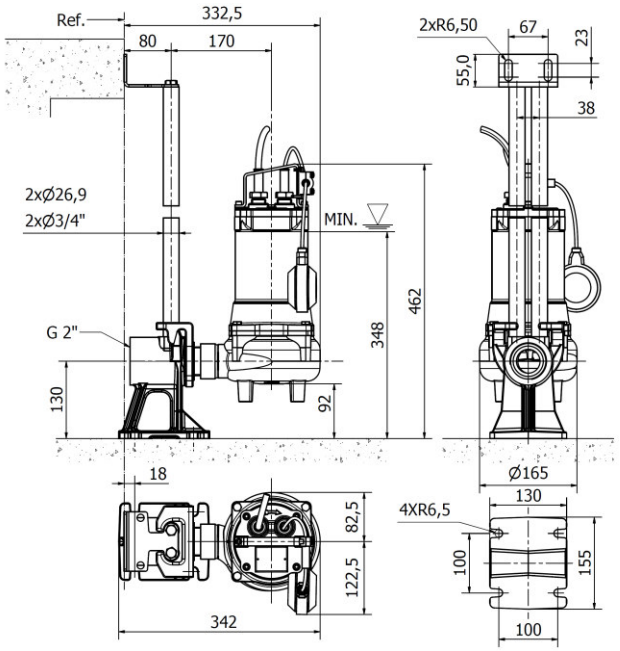
## OVERALL DIMENSIONS - DIMENSIONI D'INGOMBRO

VS.40H_[GM.110L]

**S**

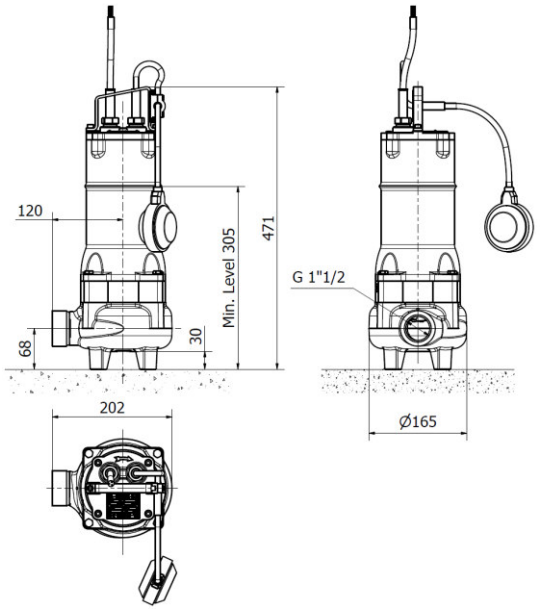



**FC**

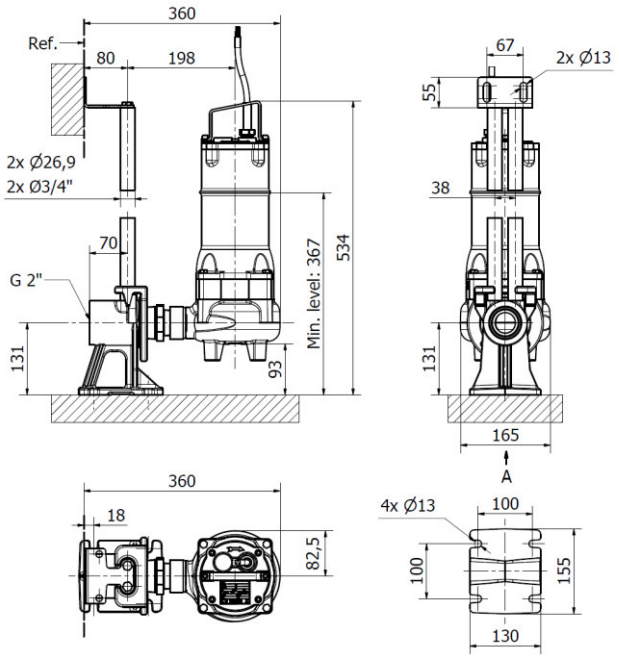



VS.40H_[GM.110]

**S**




**FC**



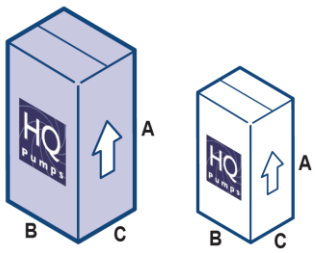

INSTALLATION MODES - MODALITA' D'INSTALLAZIONE

**S** = Transportable underwater - Trasporto in immersione

**FC** =Fixed with coupling dvice - Fissa con dispositivo di accoppiamentc

## PACKAGING DIMENSIONS - DIMENSIONI IMBALLAGGIO mm

| | A | B | C |
|---|---|---|---|
| Pump - Pompa | 570 | 250 | 215 |
| Foot coupling - Piede di accoppiamento | 260 | 175 | 195 |




Dimensions and technical data are indicative, not binding and subjected to possible modifications without notice.
Dimensioni e dati tecnici sono indicativi, non vincolanti e soggetti a eventuali modifiche senza preavviso.


WATTER
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# SUBMERSIBLE PUMPS
POMPE SOMMERGIBILI

# VS.40H

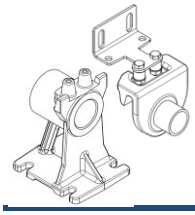
## ACCESSORIES - ACCESSORI



### TBV (1) - art. 4BV000002

### TBV (2) - art. 4BV000003

**Threaded valve (1) G 1"1/2 - (2) G 2"**
Valvola di ritegno filettata (1) G 1"1/2 - (2) G 2"



### FC - art. 8FC000001

**G 1"1/2 Foot Coupling - outlet G 2"**
Piede di accoppiamento G 1"1/2 - uscita G 2"



### SHELL - art. 3CS000021

**Counterweight for level switch**
Contrappeso per galleggiante



### TUTOR - art. 3CS000020

**Float guidance system for confined spaces**
Sistema di guida del galleggiante per spazi ristretti



### HF - art. 3CS000007

**Level switch for sewage (10 m el. cable)**
Regolatore di livello per acque reflue (cavo el. 10 m)



### CHAIN - ART. 2SC000032

**Stailess steel chain**
Catena in acciaio inox



ECH



ECL

| VS.40H_[GM.110L] | | $P_2$ [KW] | In [A] | Avv. Start. | ECH1.M-7 5EC000006 | ECH1.M-14 5EC000008 | ECH1.T-7 5EC000005 | ECH2.M-7 5EC000030 | ECH2.M-14 5EC000032 | ECH2.T-7 5EC000029 | ECL1.M-16 5EC000081 | ECL1.T-15 5EC000083 | ECL2.M-16 5EC000082 | ECL2.T-15 5EC000084 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VS.40H_04.2T__[GM.110L] | - 2 poles | 0,4 | 1,2 | DOL | | | • | | | • | | • | | • |
| VS.40H_04.2M/MA_[GM.110L] | - 2 poles | 0,4 | 3,5 | 16µF | • | | | • | | | • | | • | |
| **VS.40H_[GM.110]** | | | | | | | | | | | | | | |
| VS.40H_06.2.T/TA_[GM.110] | - 2 poles | 0,6 | 1,6 | DOL | | | • | | | • | | • | | • |
| VS.40H_09.2.T/TA_[GM.110] | - 2 poles | 0,9 | 2,2 | DOL | | | • | | | • | | • | | • |
| VS.40H_11.2.T/TA_[GM.110] | - 2 poles | 1,1 | 2,9 | DOL | | | • | | | • | | • | | • |
| VS.40H_06.2.M/MA_[GM.110] | - 2 poles | 0,6 | 4,5 | 20µF | • | | | • | | | • | | • | |
| VS.40H_09.2.M/MA_[GM.110] | - 2 poles | 0,9 | 7 | 25µF | | • | | | • | | • | | • | |
| VS.40H_11.2.M/MA_[GM.110] | - 2 poles | 1,1 | 7,7 | 25µF | | • | | | • | | • | | • | |

**ECH - ELECTROMECHANICAL**

1 Pump: ECH1.M-7 5EC000006; ECH1.M-14 5EC000008; ECH1.T-7 5EC000005
2 Pumps: ECH2.M-7 5EC000030; ECH2.M-14 5EC000032; ECH2.T-7 5EC000029

**ECL - ELECTRONIC**

1 Pump: ECL1.M-16 5EC000081; ECL1.T-15 5EC000083
2 Pumps: ECL2.M-16 5EC000082; ECH2.T-15 5EC000084