

# VTH Pumpen mit Freistromlaufrad (Vortex)

Pumpen mit Freistromlaufrad eignen sich für Abwasser mit Schwebstoffen (Fördermedien mit suspendierten Festkörpern) aus dem Haushalt, der Industrie und der Landwirtschaft (Viehhaltung).

## Technische Daten

- Fördermenge: bis 150 m<sup>3</sup>/h
- Förderhöhe: bis 68 m
- Stromversorgung: Drehstrom 50 Hz
- Leistung: 12 kW bis 40 kW
- Druckstutzen: Horizontal DN80, DN100

## Anwendungen

- Schmutzwasser, Kläranlagen, Hebeanlagen
- Sanitärinstallationen: Druckerhöhungsanlagen, Kühlanlagen, Heizungsanlagen, Eisanlagen
- allg. Industrietechnik, Apparatebau, industrielle Waschanlagen

# VTH

## SUBMERSIBLE PUMPS



### Hauptsitz

Gloor Pumpenbau AG  
Thunstrasse 25  
CH-3113 Rubigen  
Tel. +41 (0)58 255 43 34  
info@gloor-pumpen.ch  
www.gloor-pumpen.ch

### Filiale Mittelland

Gloor Pumpenbau AG  
Industriestrasse 25  
CH-5036 Oberentfelden



### Filiale Suisse Romande

Gloor Pumpenbau SA  
Rue du Collège 3 | Case postale  
CH-1410 Thierrens  
Tél. +41 (0)58 255 43 34  
info@gloor-pompes.ch  
www.gloor-pompes.ch



## Elettropompe sommergibili con girante Vortex

### Submersible electropumps with Vortex impeller

Potenze / Power:	<b>12÷40 kW</b>
Mandate / Delivery	<b>DN80 - 100</b>



#### Impieghi

La serie VTH 2 poli trova impiego nel pompaggio di liquidi fognari con pezzi solidi in sospensione. Le alte prestazioni le rendono efficaci in varie applicazioni: depuratori, canalizzazioni industriali, zootecnia, fognature.

#### Caratteristiche

Tutti i componenti principali sono realizzati in Ghisa GG25. Due tenute meccaniche separate (lato motore a bagno olio, lato girante a contatto con il liquido) e componentistica di prima qualità, ne garantiscono il perfetto funzionamento.

#### Motori

- Motori asincroni 2 poli con rotore a gabbia di scoiattolo
- Protezione termica T1 e T2 incorporato nel motore da collegare ad un apposito quadro di comando
- Isolamento statore classe F (155°C)
- Grado protezione IP 68

#### Raffreddamento

Raffreddamento effettuato dal liquido nel quale la pompa è immersa.

#### Limiti di impiego

- Temperatura massima del liquido: 40°C con unità completamente sommersa
- Disponibili versioni speciali (escluso ATEX) fino alla temperatura liquido di 60°C con unità completamente sommersa, non a servizio continuo (S1)
- Massima profondità di immersione: 20m
- Valori pH ammessi: 6-10
- Caratteristiche idrauliche valide per liquidi di densità <1,1 kg/dm<sup>3</sup>
- Tensioni ammesse: 230/400V o 400/690V ±5% a seconda del modello
- Frequenza ammessa: 50Hz ±2%

#### Application

The VTH 2 poles Series is used for pumping sewage with suspended solids. High performance renders it useful in a variety of applications including water treatment plants, industrial plants, farming and sewage.

#### Characteristic

All main components are made of grey cast iron GG25. Two individual mechanical seals (motor side in the oil chamber, impeller side in contact with the liquid) and high quality parts, ensure the perfect functioning and reliability of the product.

#### Motor range

- Squirrel cage motor 2 poles
- Thermal protection T1 and T2 embedded in the motor winding (to be wired to the three pole contactor in the control panel)
- Class F insulation (155°C)
- IP 68 protection

#### Motor cooling

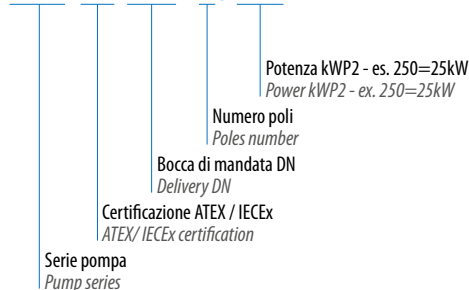
The cooling of the motor is ensured by the liquid where the pump is submerged.

#### Limits of use

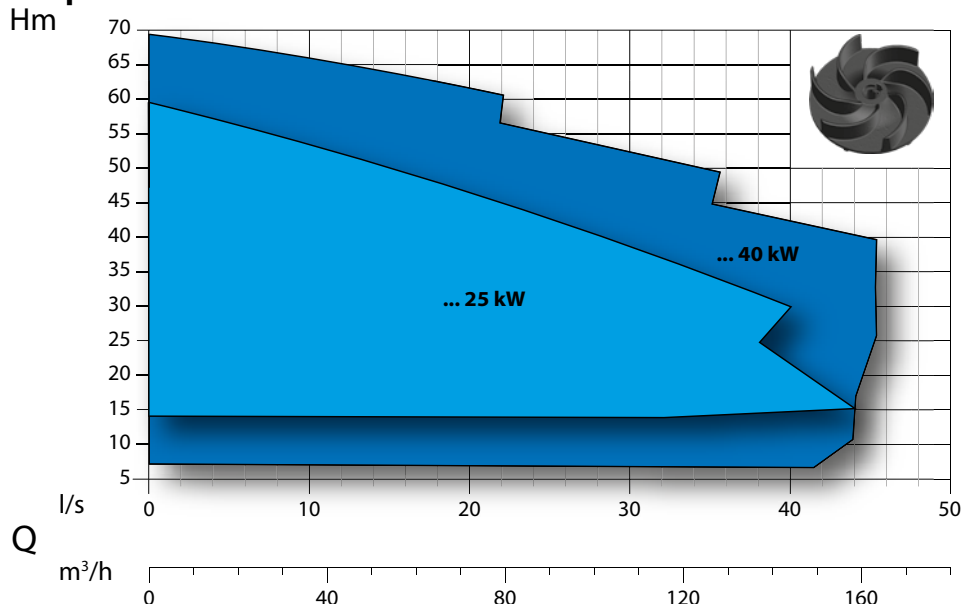
- Max. permissible liquid temperature: 40°C with pump fully submerged
- On request, special version (excluded ATEX) to withstand liquid temperature up to 60°C with pump fully submerged, no S1 service
- Maximum depth of immersion: 20 m
- Permissible pH value: 6-10
- Hydraulic features suitable for liquids with density <1,1 kg/dm<sup>3</sup>
- Allowed voltage: 230/400V or 400/690V ±5% depending on the pump
- Allowed frequency: 50Hz ±2%

### Designazione / Designation

**VTH EX 100 - 2 / 250**



### Campo di Prestazione / Performance Overview



### Identificazione Curve / Curves Identification

- DN80
- DN100

### Normative

#### Norms

Curve secondo ISO 9906:2012 3B2  
According to ISO 9906:2012 3B2

## Distinta dei componenti e materiali List of components and materials

VTH

Golfare - Hook

Acciaio inox AISI 416 - Stainless steel AISI 416

Porta cuscinetto superiore - Upper bearing support

Ghisa GG25 - Cast iron GG25

Cassa motore - Motor casing

Ghisa GG25 - Cast iron GG25

Cuscinetto superiore - Upper bearing

Albero motore - Motor shaft

Acciaio inox AISI 420 - Stainless steel AISI 420

Motore elettrico - Electric motor

Rotore - Rotor

Cuscinetto inferiore - Lower bearing

Porta motore - Motor holder

Ghisa GG25 - Cast iron GG25

Tenuta meccanica - Mechanical seal

Carburo di silicio - Silicon/Carbide (SiC/SiC/Viton)

Disco di chiusura - Closing plate

Ghisa GG25 - Cast iron GG25

Tenuta meccanica - Mechanical seal

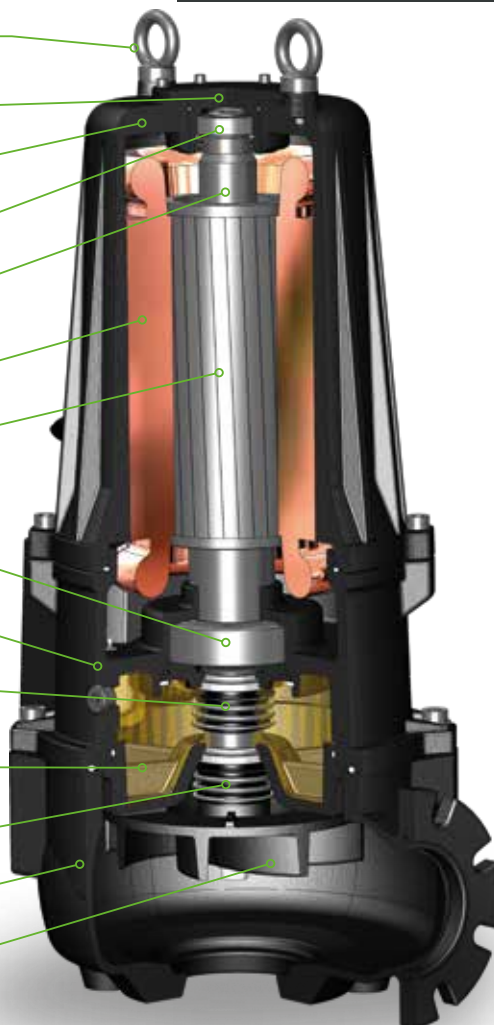
Carburo di silicio - Silicon/Carbide (SiC/SiC/Viton)

Corpo pompa - Body pump

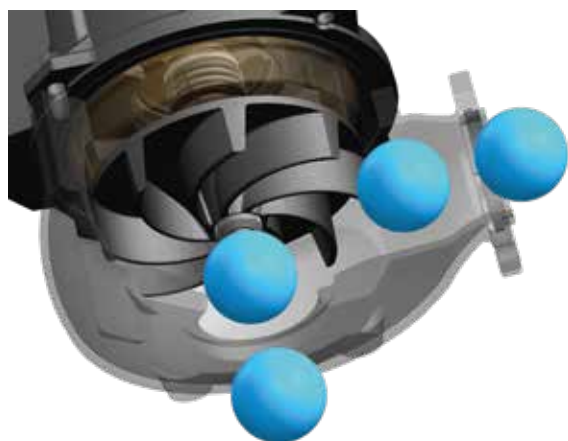
Ghisa GG25 - Cast iron GG25

Girante - Impeller

Ghisa GG25 - Cast iron GG25



## Tecnologie e Soluzioni Technology and Features



### Giranti

I giranti sono stati sviluppati per offrire sempre ottime prestazioni, senza rinunciare ad ampi passaggi di corpi solidi.

### Impellers

Impellers have been studied to grant excellent performances and ample solid handling.



### Pompe antideflagranti / Explosion proof pumps

CE 0477



Ex db IIB T4 Gb  
Ex h IIB T4 Gb  
0° ≤ Ta ≤ 40°

EPT 17 ATEX 2703 X

I presenti certificati garantiscono la sicurezza contro le esplosioni, in assoluta conformità con le stringenti direttive europee ed internazionali ATEX/IECEx.

*These certificates grant for the safe use of the product in hazardous area in line with the stringent European and International standards ATEX/IECEx.*



### Sensore d'umidità

Sensore conforme alle norme sulla sicurezza integrata contro le esplosioni EN 60079-0, EN 60079-1 tramite barriera di protezione. Di serie su tutta la gamma (non applicabile con IECEx).

### Seal leak detector

*The seal leak detector is certified according to the norm EN 60079-0, EN 60079-1 (through safety barrier) and fitted standard on all series (not applicable with IECEx).*

### Cuscinetti

La serie monta il cuscinetto superiore a rulli cilindrici, atto ad assorbire e resistere ad eventuali sollecitazioni trasmesse dall'albero motore.



### Bearings

*The series is fitted with a cylindrical roller bearing (upper bearing) to absorb the thrust and vibration generated by the pump shaft.*

### Mandata Orizzontale DN80 PN16 - RPM 2850 1/min 2 poli

Horizontal Outlet DN80 PN16 - RPM 2850 1/min 2 poles

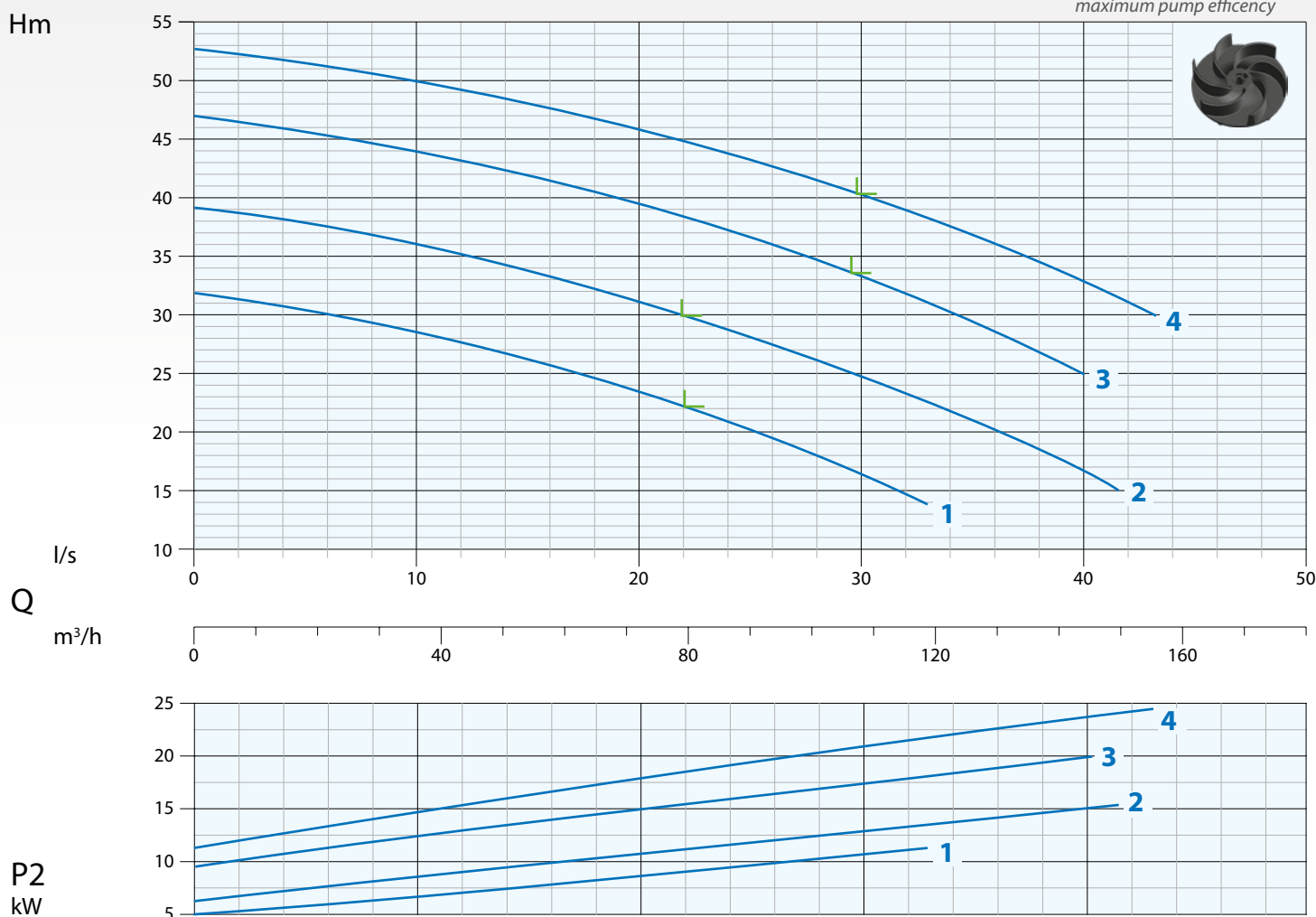
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### Curva di Prestazione

Performance Curve

L = rendimento massimo pompa  
maximum pump efficiency



N°	Tipo Type	Flow Rate (Q)										
		l/s	4	8	10	14	20	24	30	34	40	42
		l/m	240	480	600	840	1200	1440	1800	2040	2400	2520
		m³/h	14,4	28,8	36	50,4	72	86,4	108	122,4	144	151,2
1	VTH 80-2/120	mt	31	29	28,5	27	23,5	21	16,5			
2	VTH 80-2/150		38	37	36	34	31	29	25	22	17	
3	VTH 80-2/200		46	45	44	42	39,5	37	33	30	25	
4	VTH 80-2/250		52	51	50	48,5	46	44	40	37,5	33	31

N°	Tipo Type	EX	Mandata Delivery	Passaggio Free Passage	kW			R.P.M. 1/min	A 3 Phase - 400V	Hz
					P1	P2	HP			
1	VTH 80-2/120	•	DN80 PN16	70 mm	13,4	12	16	2850	22	50
2	VTH 80-2/150	•			17,2	15	20		29,5	
3	VTH 80-2/200	•			23,7	20	27		41	
4	VTH 80-2/250	•			28,2	25	33		47,5	

• Pompa antideflagrante disponibile con certificazioni:  
Available explosion proof pump with certifications:

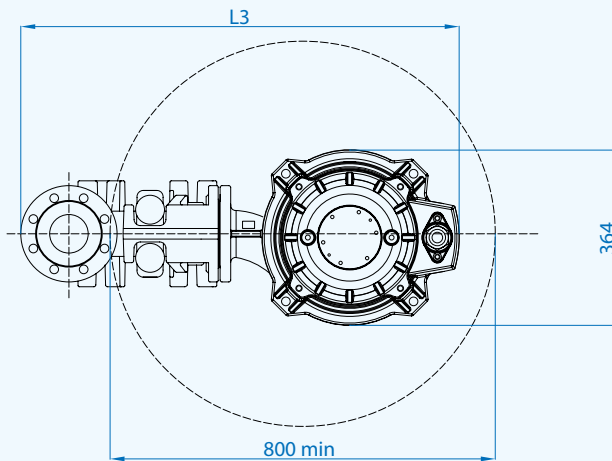
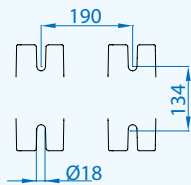
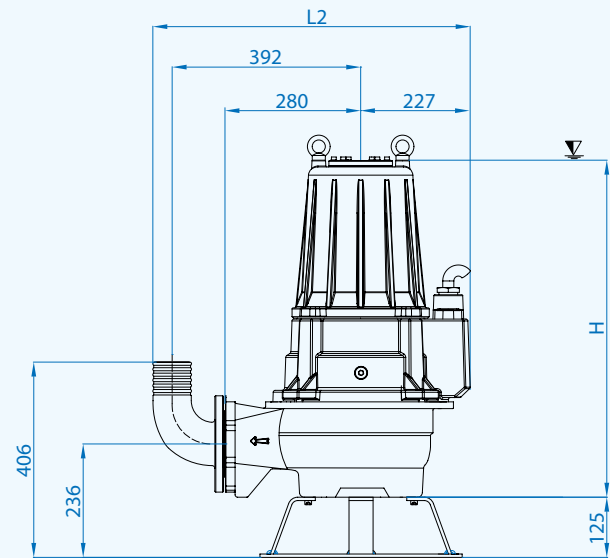
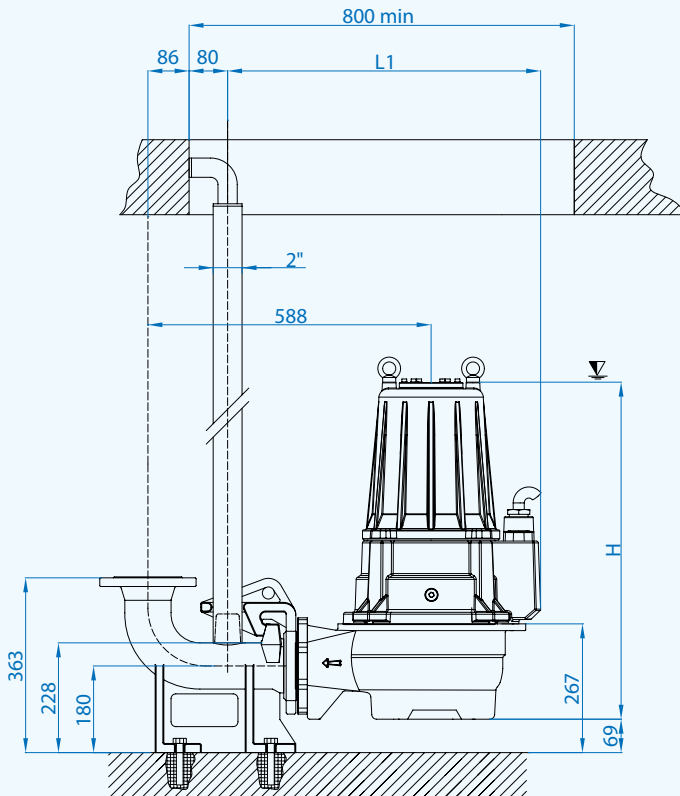


EPT 17 ATEX 2703 X

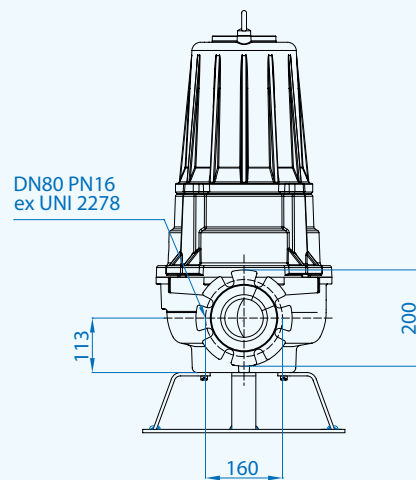


Ex db IIB T4 Gb  
Ex h IIB T4 Gb  
0° ≤ Ta ≤ 40°

∇ Sommergenza minima  
Minimum submersion



	H	L1	L2	L3
VTH 80-2/120-150	700	650	655	911
VTH 80-2/200-250	741	678	683	934



Quote in mm  
Dimensions in mm

## Cavi / Cables

Pompe Pumps	Versione Version	Fasi Phases	Cavo Cable	Sezione cavo mm <sup>2</sup> Cable cross section mm <sup>2</sup>	mt
80-2/120-150	Standard	3 ~ 400V	H07RN8F	10x2,5 Ø23*	10
	ATEX	Y-Δ	NSSHÖU-J	7x2,5+3x0,50 Ø20*	10
80-2/200-250	Standard	3 ~ 400V	H07RN8F	7x4+3x1 Ø20,5*	10
	ATEX	Y-Δ	NSSHÖU-J	7x6+3x1 Ø24*	10

\* Terminali liberi - Free terminals

## Dimensioni imballo / Packaging dimension

Tipo - Type	X mm	Y mm	Z mm	Kg
VTH 80-2/120				186
VTH 80-2/150				195
VTH 80-2/200	510	860	420	242
VTH 80-2/250				244

Technische Änderungen vorbehalten.  
Subject to technical changes.

## Accessori - Optional



Piede di accoppiamento  
Tipo: DUTY 80 e B5  
Automatic coupling foot  
Type: DUTY 80 and B5



Curva flangiata con portagomma N2  
Base di sostegno P7  
Flanged hose connection N2  
Foot support P7

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Date\_06/02/20

## Mandata Orizzontale DN100 PN16 - RPM 2850 1/min 2 poli

Horizontal Outlet DN100 PN16 - RPM 2850 1/min 2 poles

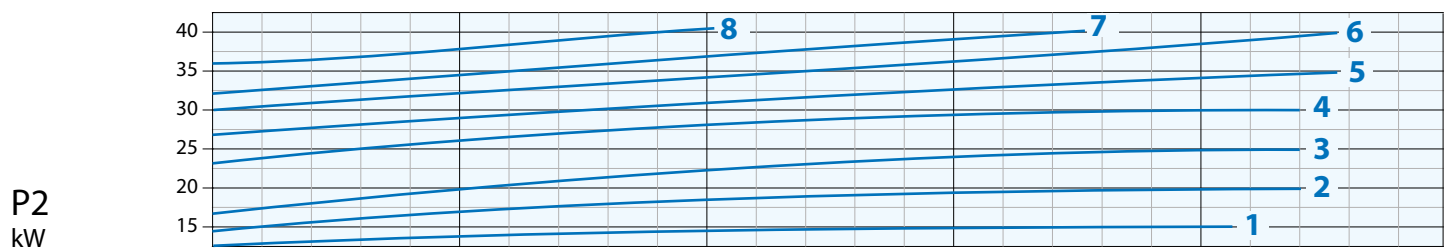
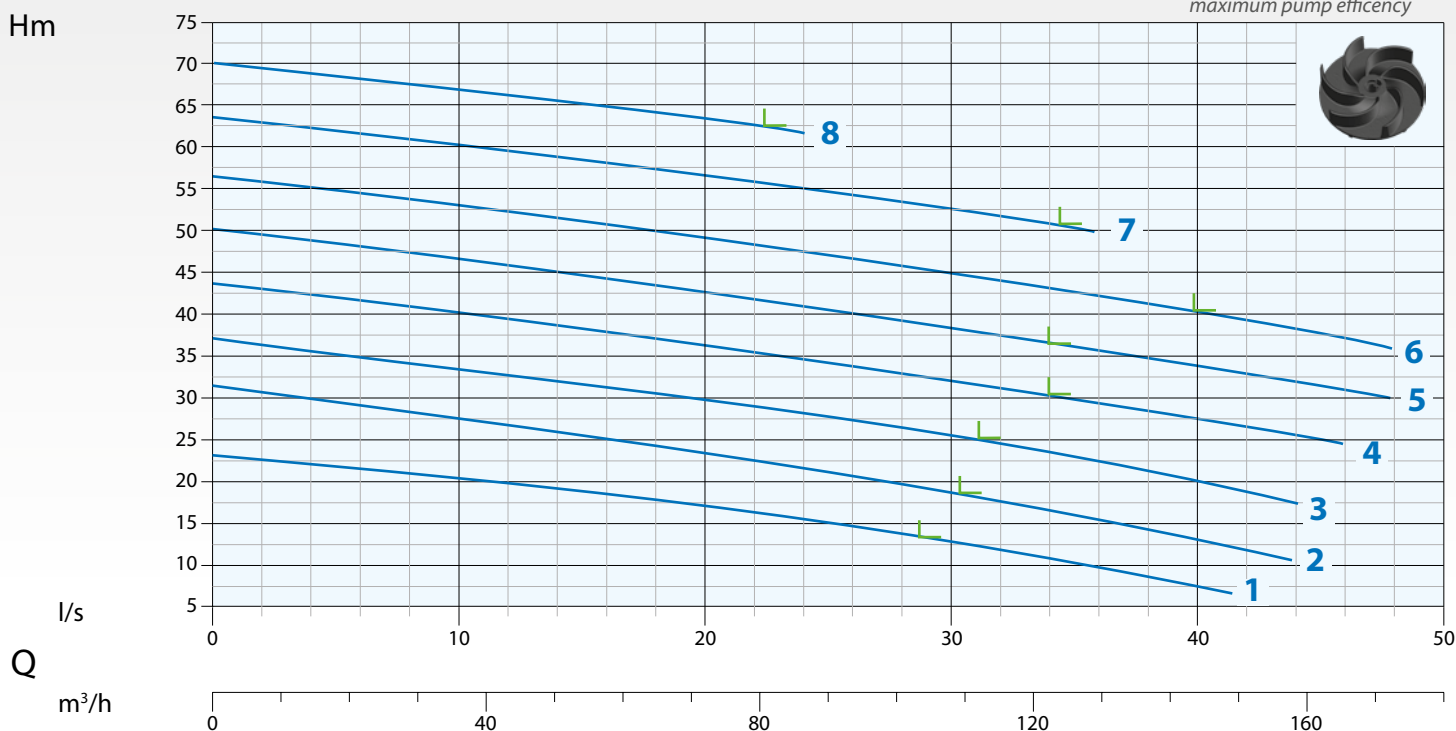
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L = rendimento massimo pompa  
maximum pump efficiency

### Curva di Prestazione

### Performance Curve



N°	Tipo Type	l/s l/m m³/h	4	8	10	14	20	24	30	34	40	42
			14,4	28,8	36	50,4	72	86,4	108	122,4	144	151,2
1	VTH 100-2/150	mt	22,5	21	20,5	18	17	15	12,5	11	7,5	
2	VTH 100-2/200		30	28	27,5	26	23,5	22	18,5	16,5	12,5	12
3	VTH 100-2/250		35,5	34,5	33	32,5	30	28	26,5	23,5	20	18
4	VTH 100-2/300		42,5	40,5	40	38,5	36	35	32	31	27,5	27
5	VTH 100-2/350		48,5	47	46	45	42,5	41	38	37	34	32,5
6	VTH 100-2/400		55,5	54	53	52	49	47,5	45	43	40	39
7	VTH 100-2/400-1		62,5	61	60	58,5	57	55	52,5	51		
8	VTH 100-2/400-2		68	67,5	66,5	65	63	62				

N°	Tipo Type	EX	Mandata Delivery	Passaggio Free Passage	kW			R.P.M. 1/min	A 3 Phase - 400V	Hz
					P1	P2	HP			
1	VTH 100-2/150	•	DN100 PN16	100 mm	17,2	15	20	2850	30,2	50
2	VTH 100-2/200	•			23,7	20	27		40,4	
3	VTH 100-2/250	•			28,2	25	34		47,4	
4	VTH 100-2/300	•			37,4	30	41		59,7	
5	VTH 100-2/350	•			40,6	35	47,5		65,1	
6	VTH 100-2/400	•			48,2	40	54		76,2	
7	VTH 100-2/400-1	•			48,2	40	54		76,2	
8	VTH 100-2/400-2	•			48,6	40	54		76,5	

• Pompa antideflagrante disponibile con certificazioni:  
Available explosion proof pump with certifications:



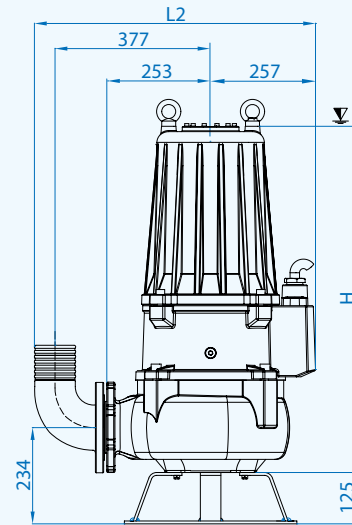
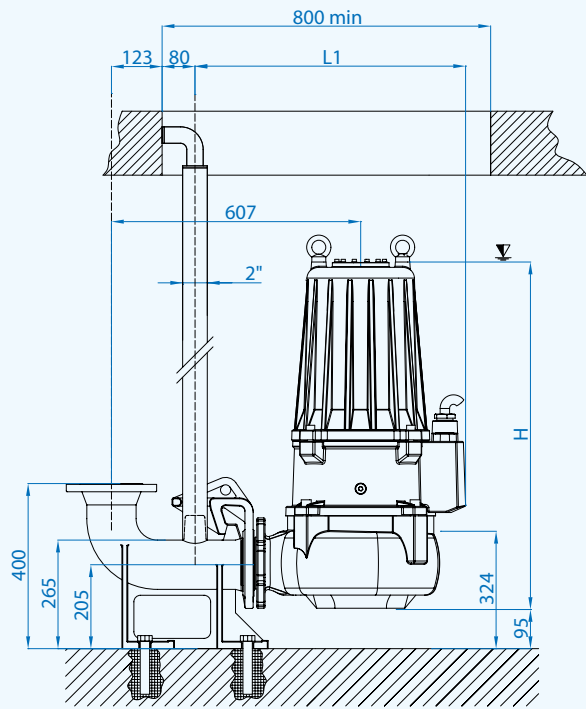
EPT 17 ATEX 2703 X



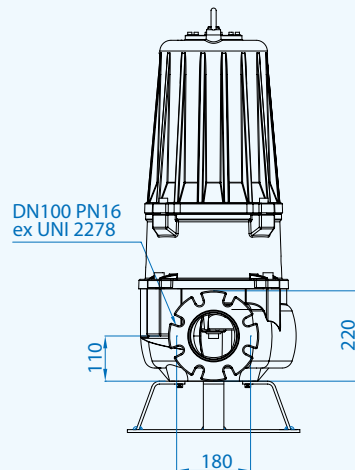
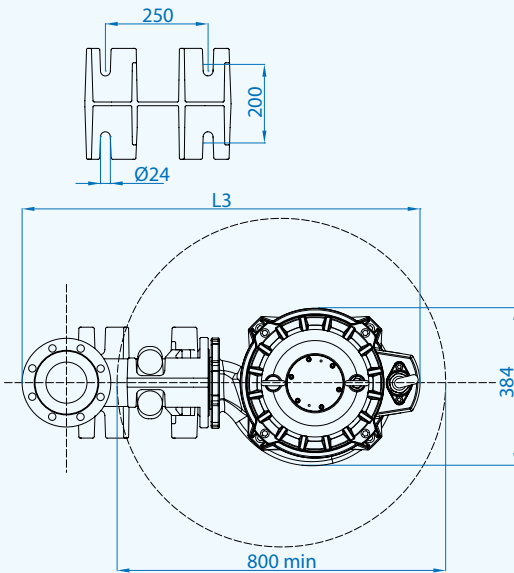
Ex db IIB T4 Gb  
Ex h IIB T4 Gb  
0° ≤ Ta ≤ 40°



▽ Sommergenza minima  
Minimum submersion



	H	L1	L2	L3
<b>VTH 100-2/150</b>	728	650	659	911
<b>VTH 100-2/200-250</b>	769	659	684	969
<b>VTH 100-2/300-350-400</b>	843	659	684	969



Quote in mm  
Dimensions in mm

## Cavi / Cables

Pompe Pumps	Versione Version	Fasi Phases	Cavo Cable	Sezione cavo mm <sup>2</sup> Cable cross section mm <sup>2</sup>	mt
<b>100-2/150</b>	Standard	3 ~ 400V	H07RN8F	10x2,5 Ø23*	10
	ATEX	Y-Δ	NSSHÖU-J	7x2,5+3x0,50 Ø20*	10
<b>100-2/200-250</b>	Standard	3 ~ 400V	H07RN8F	7x4+3x1 Ø20,5*	10
	ATEX	Y-Δ	NSSHÖU-J	7x6+3x1 Ø24*	10
<b>100-2/300-350-400</b>	Standard	3 ~ 400V	NSSHÖU-J	7x6+3x1 Ø24*	10
	ATEX	Y-Δ	NSSHÖU-J	7x6+3x1 Ø24*	10

\* Terminali liberi - Free terminals

## Dimensioni imballo / Packaging dimension

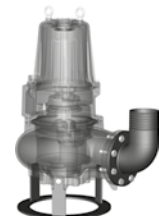
Tipo - Type	X mm	Y mm	Z mm	Kg
<b>VTH 100-2/150</b>	510	860	420	210
<b>VTH 100-2/200</b>				252
<b>VTH 100-2/250</b>				254
<b>VTH 100-2/300</b>				310
<b>VTH 100-2/350</b>				340
<b>VTH 100-2/400</b>				380
<b>VTH 100-2/400-1</b>				382
<b>VTH 100-2/400-2</b>				385



## Accessori - Optional



Piede di accoppiamento  
Tipo: DUTY 100 e B6  
Automatic coupling foot  
Type: DUTY 100 and B6



Curva flangiata con portagomma N3  
Base di sostegno P7  
Flanged hose connection N3  
Foot support P7