

DNA

SUBMERSIBLE PUMPS



BTS
ENGINEERING

<https://prom-nasos.pro>

<https://bts.net.ua>

<https://prom-nasos.com.ua>

+38 095 656-37-57,

+38 067 360-71-01,

+38 063 362-12-31,

info@prom-nasos.pro



Погружные электронасосы с вихревым рабочим колесом

Submersible electropumps with Vortex impeller

Potenze / Power:	0.56÷2.2 kW
Mandate / Delivery:	DN50 - 65 - 80



Применение

Серия DNA используется для очистки сточных вод и сточных вод. Его широкий канал обеспечивает свободное прохождение твердых частиц, что делает его особенно полезным на водоочистных сооружениях, в быту, коммунальном хозяйстве и сельском хозяйстве. 4-полюсная версия может использоваться в приложениях, где требуется непрерывное обслуживание S1, и характеризуется бесшумной работой.

Характеристики

Основные компоненты изготовлены из чугуна GG20. Двойное механическое уплотнение в конфигурации "спина к спине", расположенное в масляной камере, гарантирует длительный срок службы изделия.

Диапазон двигателей

- Двигатель с короткозамкнутым ротором в исполнении с 2 и 4 полюсами
- Тепловая защита, встроенная в обмотку (в моделях DNA ...-2/220 и DNA ...-4/090 проводники тепловой защиты T1 и T2 должны быть подключены к панели управления)
- Класс изоляции F 155°C
- Степень защиты двигателя IP 68

Охлаждение двигателя

Охлаждение двигателя обеспечивается жидкостью, в которую погружен насос.

Пределы использования

- Максимально допустимая температура жидкости: 40°C при полностью погруженном насосе
- Максимальная глубина погружения: 20 м.
- Допустимое значение pH: 6-10
- Гидравлические характеристики подходят для жидкостей плотностью <1,1 кг/дм³
- Допустимое напряжение: 230 В/400 В ±5%
- Допустимая частота: 50 Гц ±2%

Application

The DNA Series is used for sewage and waste water. Its wide channel permits the free passage of solids rendering it particularly useful in water treatment plants, domestic, municipal and farming applications. The 4 pole version can be used in applications where continuous S1 service is needed and are characterised by their quiet operation.

Characteristic

The main components are fabricated in cast iron GG20. The Double mechanical seal in a back to back configuration located in the oil chamber guarantee long durability to the product.

Motor range

- Squirrel cage motor in 2 and 4 pole version
- Thermal protection embedded in the winding (In the DNA ...-2/220 and DNA ...-4/090 model the thermal protection T1 and T2 conductor to be wired to the control panel)
- Insulation class F 155°C
- Motor protection IP 68

Motor cooling

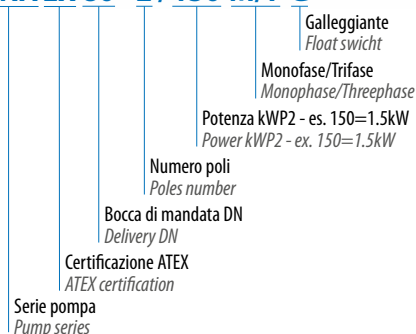
The cooling of the motor is ensured by the liquid where the pump is submerged.

Limits of use

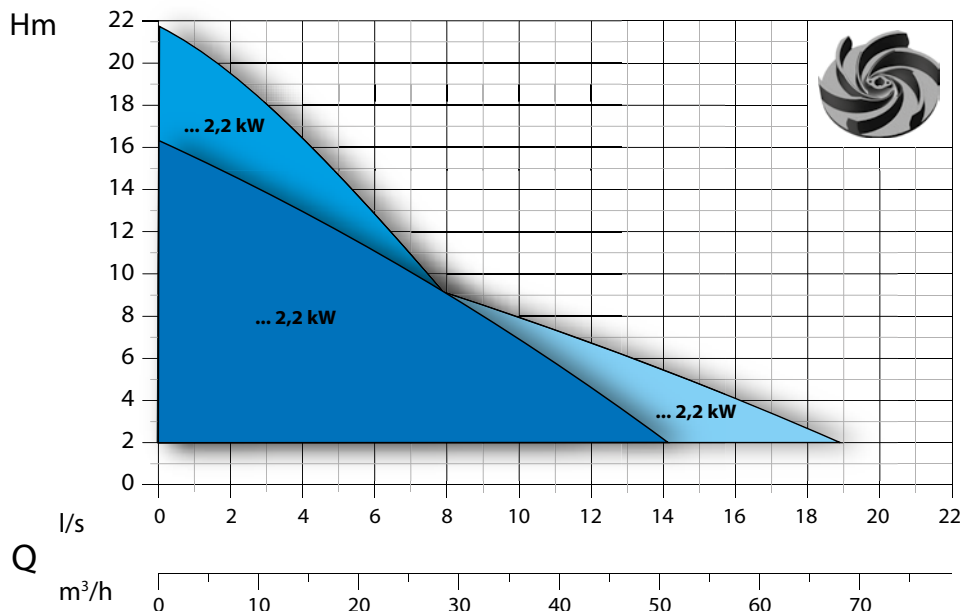
- Max. permissible liquid temperature: 40°C with pump fully submerged
- Maximum depth of immersion: 20 mt.
- Permissible pH value: 6-10
- Hydraulic features suitable for liquids with density <1,1 kg/dm³
- Allowed voltage: 230V/400V ±5%
- Allowed frequency: 50Hz ±2%

Обозначение / Designation

DNA EX 80 - 2 / 150 M/T G



Производительность / Performance Overview



Identificazione Curve

Curves Identification

- DN50
- DN65
- DN80

Normative

Norms

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

Список компонентов и материалов List of components and materials

DNA

Manico - Handle

Acciaio Inox - Stainless steel

Coperchio Motore - Motor Cover

Ghisa GG20 - Cast Iron GG20

Cassa Motore - Motor Casing

Ghisa GG20 - Cast Iron GG20

Albero Motore - Motor Shaft

Acciaio Inox AISI 420 - Stainless steel AISI 420

Motore elettrico - Electric Motor

Flangia Porta cuscinetto - Flange Bearing Support

Ghisa GG20 - Cast Iron GG20

Doppia Tenuta Meccanica - Double Mechanical Seal

Lato motore carbone/ceramica - Motor side: Carbon/Ceramic (CA/CE/Viton)

Lato girante carburo di silicio - Impeller side: Silicon carbide (SIC/SIC/Viton)

Configurazione ATEX - ATEX Configuration

Lato motore : tenuta a labbro - Motor side: Lip seal

Lato girante carburo di silicio - Impeller side: Silicon carbide (SIC/SIC/Viton)

Girante - Impeller

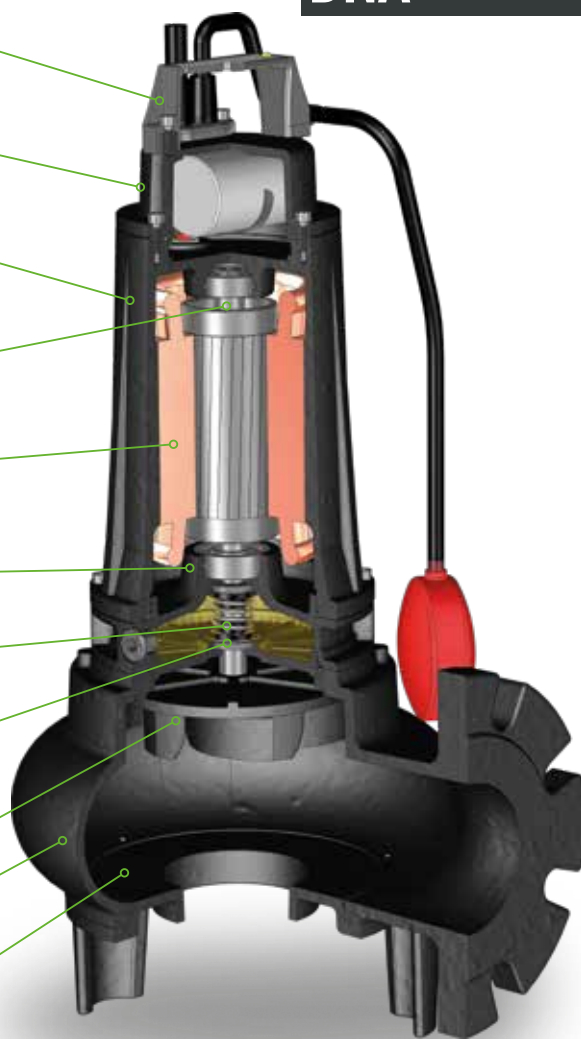
Ghisa GG20 - Cast Iron GG20

Corpo Pompa - Body Pump

Ghisa GG20 - Cast Iron GG20

Coperchio Chiusura - Wearing Plate

Ghisa GG20 - Cast Iron GG20



Tecnologie e Soluzioni Technology and Features



Pompe antideflagranti

La serie è disponibile con certificato ATEX su richiesta dove indicato

Explosion proof pumps

Pumps with explosion proof available on request.



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EPT 17 ATEX 2701 X



II 2G Ex db IIB T4 Gb
Ex h IIB T4 Gb
0° ≤ Ta ≤ 40°



Relé di Comando

Per il funzionamento del galleggiante su motori trifase fino a 1,5 kW 2 poli. ATEX escluso.

Relay

For the correct operating of the float switch on the three-phase version, up to 1,5 kW 2 poles. ATEX excluded.



Passaggio Solidi

Passaggio integrale di corpi solidi.

Solids Handling

Full free passage of solids.



Camera Olio

Totale Lubrificazione tenute garantita anche nelle condizioni più estreme. La camera olio è ispezionabile.

Oil Chamber

Excellent lubrication of the mechanical seals even in the harshest pumping conditions. Inspectional oil chamber.

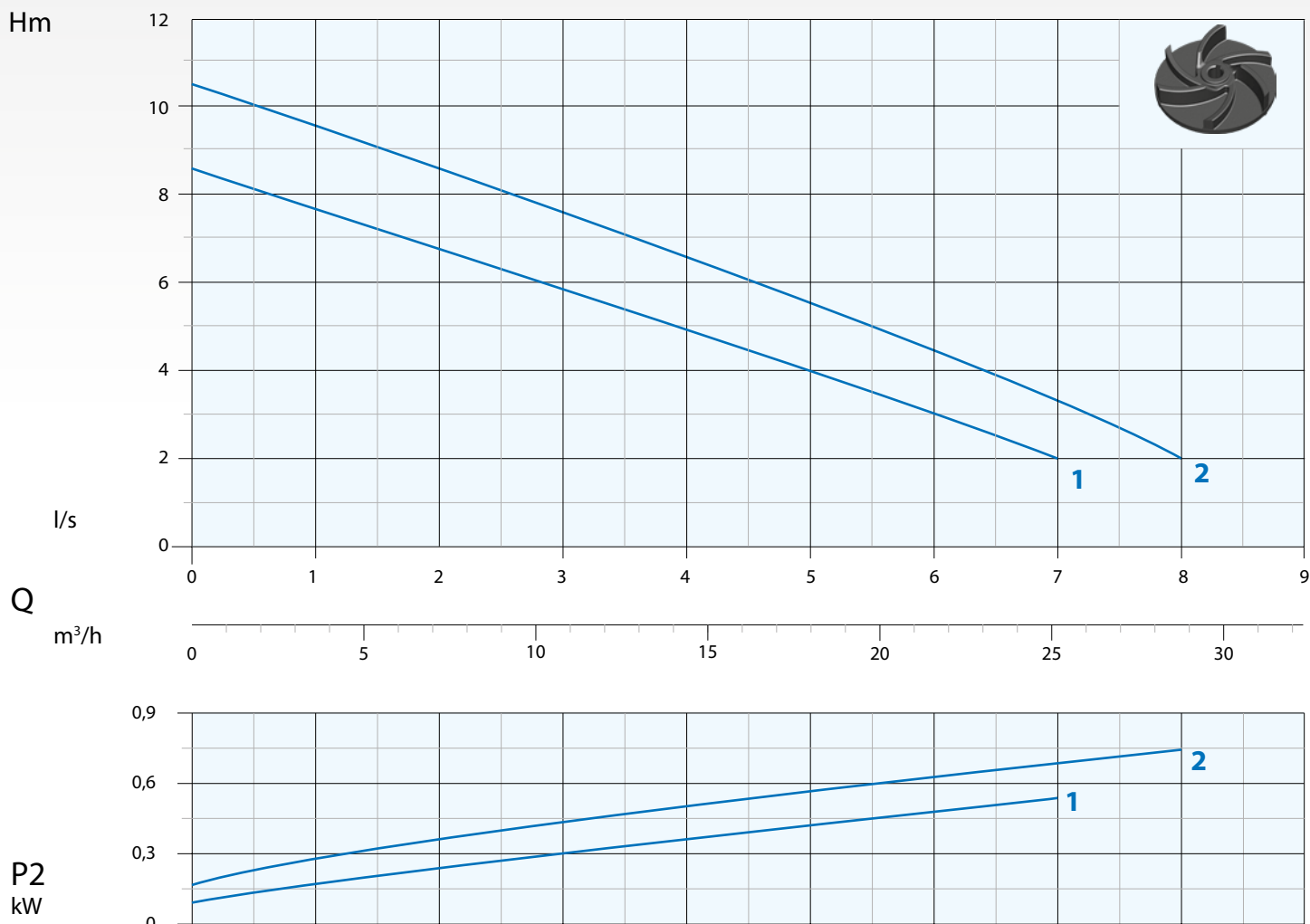
Mandata Orizzontale DN50 PN10 - G 2" - RPM 2850 1/min 2 poli

Horizontal Outlet DN50 PN10 - G 2" - RPM 2850 1/min 2 poles

Immagine a solo scopo illustrativo
Picture for illustration purposes only

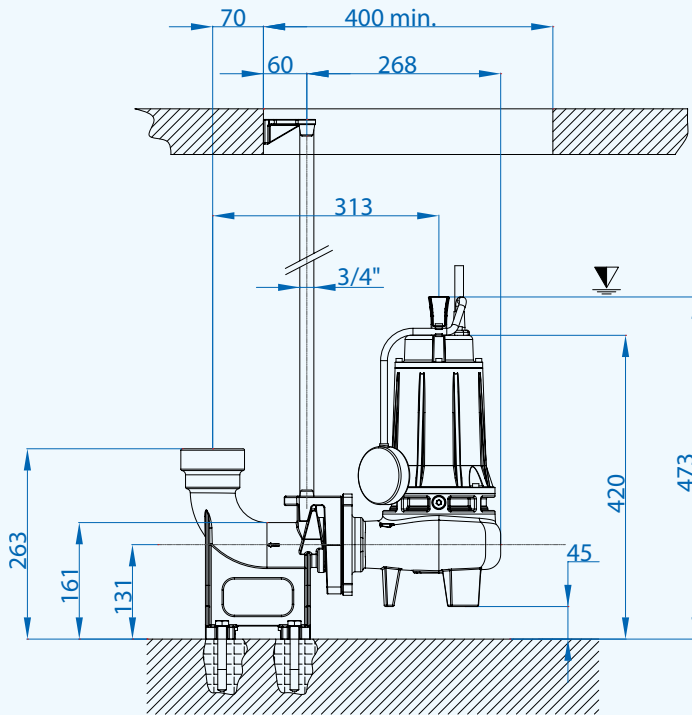


Curva di Prestazione Performance Curve

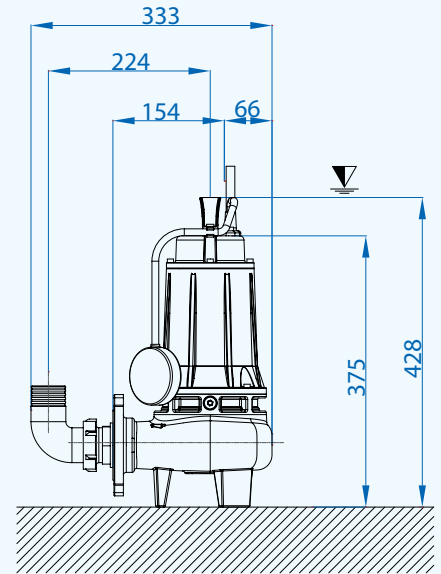


N°	Tipo Type	l/s	1	2	3	4	5	6	7	8	9
			l/m	60	120	180	240	300	360	420	480
		m³/h	3,6	7,2	10,8	14,4	18	21,6	25,2	28,8	32,4
1	DNA 50-2/056 M/T	mt	7,5	6,8	5,8	5	4	2,5	2		
2	DNA 50-2/075 M/T		9,5	8,5	7,5	6,5	5,5	4,5	3,3	2	

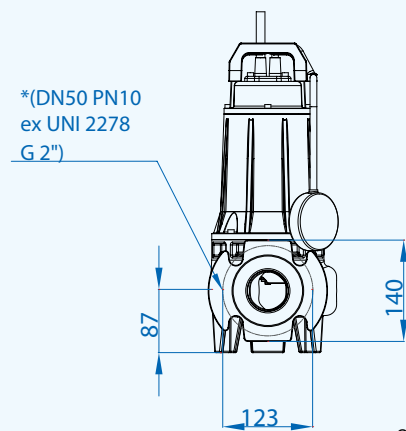
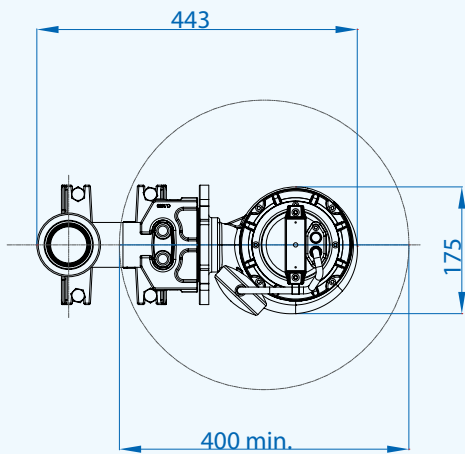
N°	Tipo Type	Mandata Delivery	Passaggio Free Passage	kW		HP	R.P.M. 1/min	A		Hz
				P1	P2			1 Phase - 230V	3 Phase - 400V	
1	DNA 50-2/056 M/T	DN 50 - G 2"	45 mm	0,79	0,56	0,75	2850	3,6	16	1,8
2	DNA 50-2/075 M/T			1,0	0,75	1		5,2	20	2,0



∇ Sommergenza minima
Minimum submersion



∇ Sommergenza minima
Minimum submersion



Quote in mm
Dimensions in mm

Cavi / Cables

Monofase - Single phase 230V
H07RN8F 3x1 Ø9 con Spina Schuko - Schuko plug
Lunghezza - Length 10 mt

Trifase - Threephase 400V
H07RN8F 4x1 Ø10 con terminali liberi - Free terminals
Lunghezza - Length 10 mt

Accessori - Optional



Pompe monofasi: Control-box per funzionamento con condensatore esterno
For single phase pumps: Control-box with external main capacitor



Piede di accoppiamento rapido
Tipo: DUTY 50, Easy 3.2 o E3.1
Automatic coupling foot
Type: DUTY 50 Easy 3.2 or E3.1

Curva filettata con portagomma 2"
Thread hose connection 2"

Dimensioni imballo / Packaging dimension

Tipo - Type	X mm	Y mm	Z mm	Kg
DNA 50-2/056 M/T	230	450	270	19
DNA 50-2/075 M/T	230	450	270	19,5

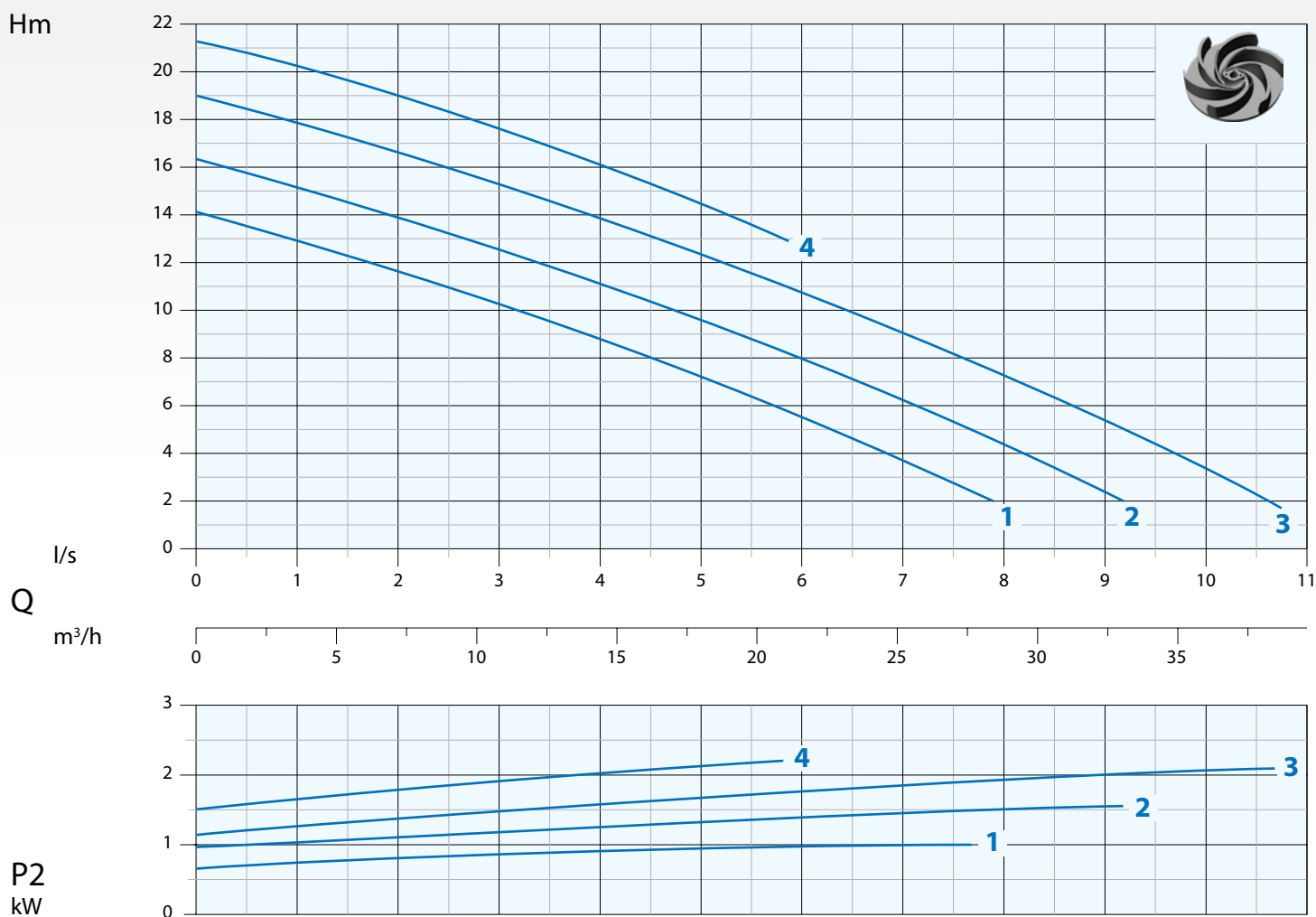
Mandata Orizzontale DN50 PN10 - G 2" - RPM 2850 1/min 2 poli

Horizontal Outlet DN50 PN10 - G 2" - RPM 2850 1/min 2 poles

Immagine a solo scopo illustrativo
Picture for illustration purposes only



Curva di Prestazione Performance Curve



N°	Tipo Type	Flow Rate (Q)											
		l/s	0,5	1	2	3	4	5	6	7	8	9	10
		l/m	30	60	120	180	240	300	360	420	480	540	600
		m³/h	1,8	3,6	7,2	10,8	14,4	18	21,6	25,2	28,8	32,4	36
1	DNA 50-2/110 M/T	mt	13,5	13	11,5	10,5	8,8	7	5,5	3,5	2		
2	DNA 50-2/150 M/T		15,8	15	14	12,5	11	9,5	8	6,5	4,5	2,5	
3	DNA 50-2/220 T		18,5	18	16,5	15,2	14	12,5	10,8	9	7,2	5,5	3,5
4	DNA 50-2/220-1 T		20,8	20	19	17,5	16	14,5					

N°	Tipo Type	EX	Mandata Delivery	Passaggio Free Passage	kW		HP	R.P.M. 1/min	A			Hz
					P1	P2			1 Phase - 230V	µf	3 Phase - 400V	
1	DNA 50-2/110 M/T	•	DN50 PN10 - G 2"	50 mm	1,6	1,1	1,5	2850	7,8	30	2,9	50
2	DNA 50-2/150 M/T	•			2,1	1,5	2		9,9	32	3,6	
3	DNA 50-2/220 T	•			3,0	2,2	3				5,3	
4	DNA 50-2/220-1 T	•			3,0	2,2	3				5,3	

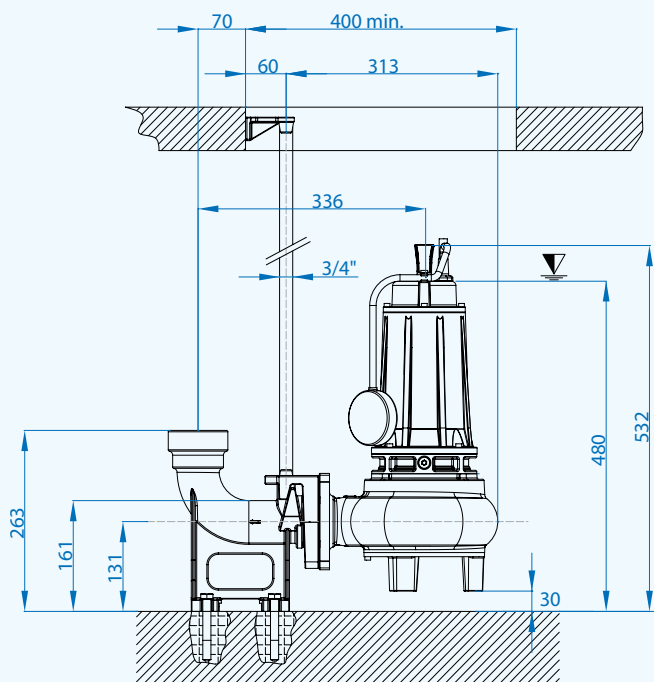
• Pompa antideflagrante disponibile con certificazione
Available explosion proof pump



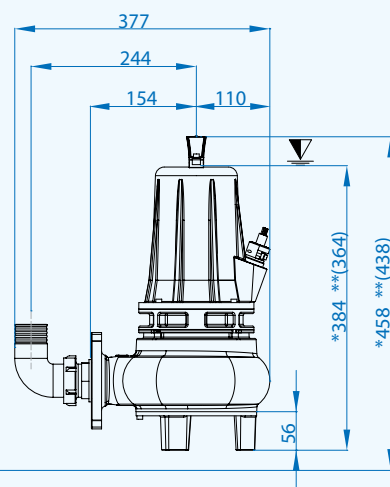
EPT 17 ATEX 2701 X



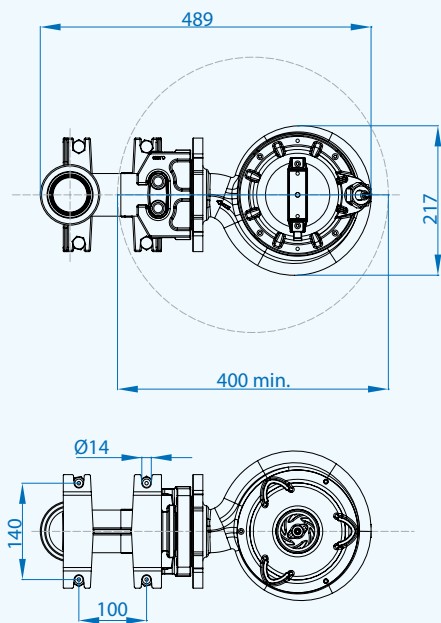
Ex db IIB T4 Gb
Ex h IIB T4 Gb
0° ≤ Ta ≤ 40°



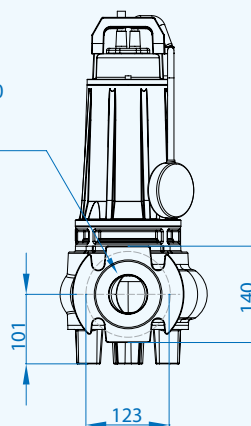
*DNA(EX) 50-2/220 - *DNA(EX) 50-2/220-1
 **VERSIONI ATEX fino a 1,5kW - **ATEX VERSION up to 1,5kW



∇ Sommergenza minima
 Minimum submersion



*(DN50 PN10
 ex UNI 2278
 G 2")



Quote in mm
 Dimensions in mm

Cavi / Cables

Pompe Pumps	Fasi Phases	Cavo Cable	Sezione cavo mm ² Cable cross section mm ²	mt
DNA 50-2/110-150	1 ~ 230V	H07RN8F	3x1 Ø9*	10
	3 ~ 400V		4x1 Ø10**	10
DNA 50-2/220-220-1	3 ~ 400V	H07RN8F	4x1,5+2x0,50 Ø12**	10
Versioni /Versions ATEX	1 ~ 230V	NSSHÖU-J	4x1,5+2x0,50 Ø12***	10
	3 ~ 400V		4x1,5+2x0,50 Ø12**	10

* Spina Schuko - Schuko plug

** Terminali liberi - Free terminals *** Di serie con control-box - Standard with control-box

Dimensioni imballo / Packaging dimension

Tipo - Type	X mm	Y mm	Z mm	Kg
DNA 50-2/110 M/T	260	585	315	28
DNA 50-2/150 M/T				29
DNA 50-2/220 T				30
DNA 50-2/220-1 T				30



Accessori - Optional



Quadri ATEX disponibili su richiesta
 Explosion proof control box available
 on request



Pompe monofasi:
 Control-box per
 funzionamento con
 condensatore esterno
 For single phase pumps:
 Control-box with external
 main capacitor



Piede di accoppiamento rapido
 Tipo: DUTY 50, Easy 3.2 o E3.1
 Automatic coupling foot
 Type: DUTY 50 Easy 3.2 or E3.1



Curva filettata
 portagomma 2"
 Thread hose
 connection 2"

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Date_06/02/20

Mandata Orizzontale DN50 PN10 - G 2" - RPM 1450 1/min 4 poli

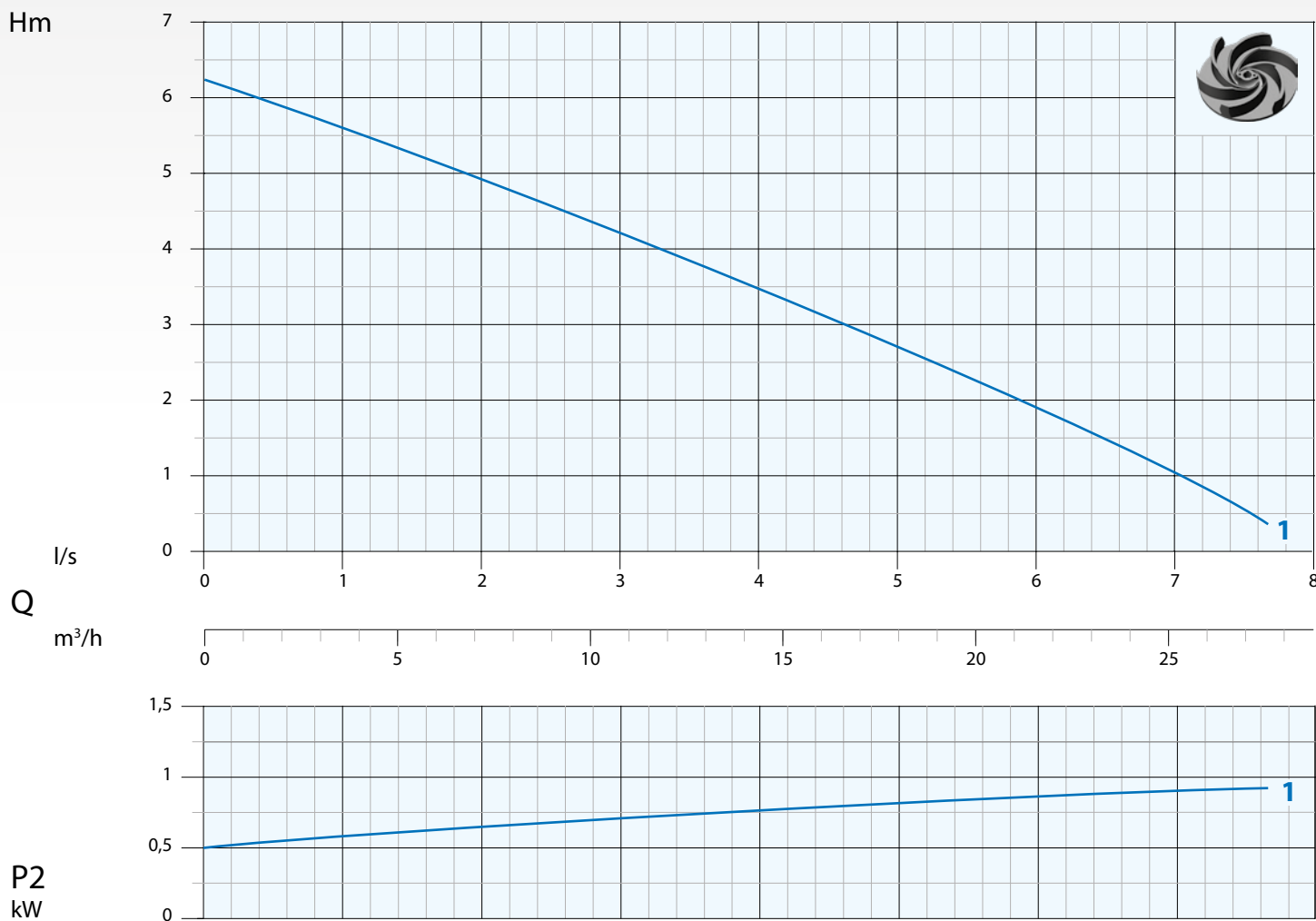
Horizontal Outlet DN50 PN10 - G 2" - RPM 1450 1/min 4 poles

Immagine a solo scopo illustrativo
Picture for illustration purposes only



Curva di Prestazione

Performance Curve



N°	Tipo Type	Flow (Q)									
		l/s	0,5	1	2	3	4	5	6	7	7,5
		l/m	30	60	120	180	240	300	360	420	450
1	DNA 50-4/090 M/T	m³/h	1,8	3,6	7,2	10,8	14,4	18	21,6	25,2	27
		mt	5,8	5,2	4,8	4,5	3,5	2,7	1,8	1	0,5

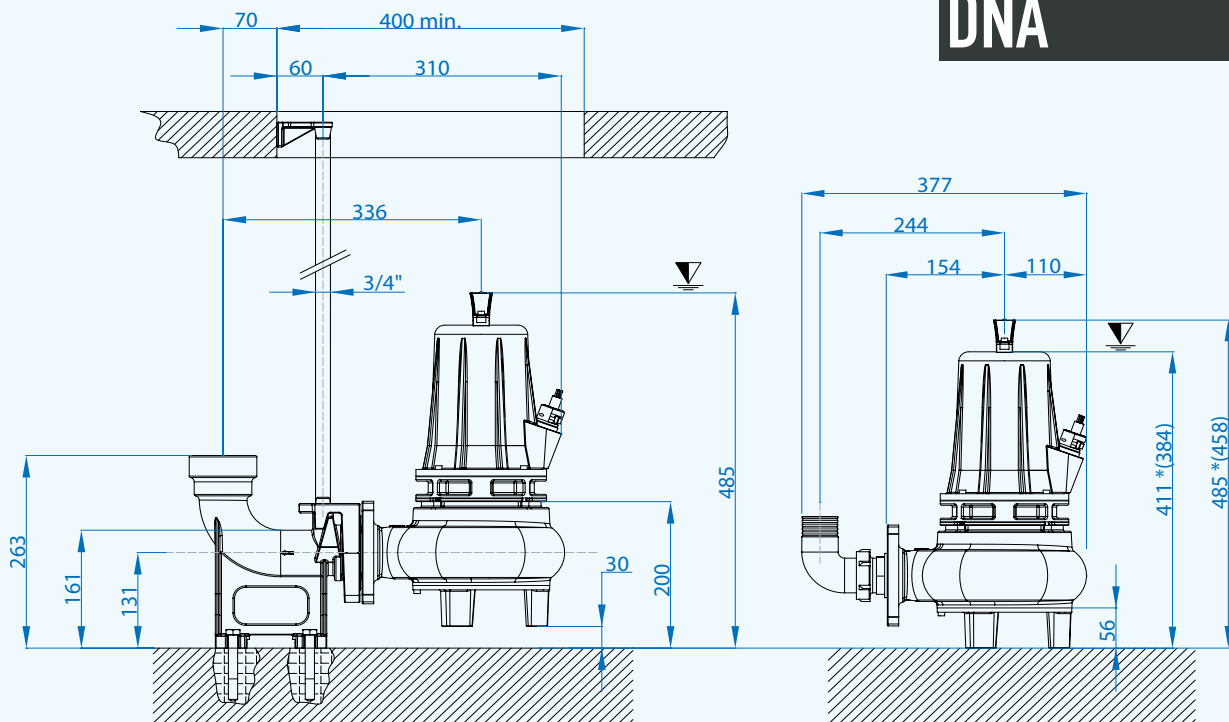
N°	Tipo Type	EX	Mandata Delivery	Passaggio Free Passage	kW		HP	R.P.M. 1/min	A			Hz
					P1	P2			1 Phase - 230V	µf	3 Phase - 400V	
1	DNA 50-4/090 M/T	•	DN50 PN10 - G 2"	50 mm	1,1	0,9	1,2	1450	4,7	20	2,5	50

• Pompa antideflagrante disponibile con certificazione
Available explosion proof pump



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

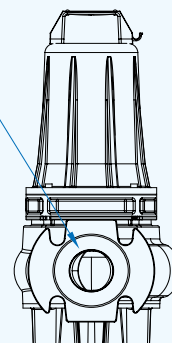
EPT 17 ATEX 2701 X



* VERSIONI ATEX - ATEX VERSION

∇ Sommergenza minima
Minimum submersion

(DN50 PN10
ex UNI 2278
G 2")



Quote in mm
Dimensions in mm

Cavi / Cables

	Fasi Phases	Cavo Cable	Sezione cavo mm ² Cable cross section mm ²	mt
Standard	1 ~ 230V	H07RN8F	4x1,5+2x0,50 Ø12*	10
	3 ~ 400V		4x1,5+2x0,50 Ø12**	10
Versioni - Versions ATEX	1 ~ 230V	NSSHÖU-J	4x1,5+2x0,50 Ø12*	10
	3 ~ 400V		4x1,5+2x0,50 Ø12**	10

* Di serie con Control Box - Standard with Control Box

** Terminali liberi - Free terminals

Dimensioni imballo / Packaging dimension

Tipo - Type	X mm	Y mm	Z mm	Kg
DNA 50-4/090 M/T	260	585	315	30



Accessori - Optional



Quadri ATEX disponibili su richiesta
Explosion proof control box available
on request



Piede di accoppiamento rapido
Tipo: DUTY 50, Easy 3.2 o Easy 3.1
Automatic coupling foot
Type: DUTY 50 Easy 3.2 or Easy 3.1



Curva filettata portagomma 2"
Thread hose connection 2"

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Date_06/02/20

Mandata Orizzontale DN65 PN10 - RPM 2850 1/min 2 poli

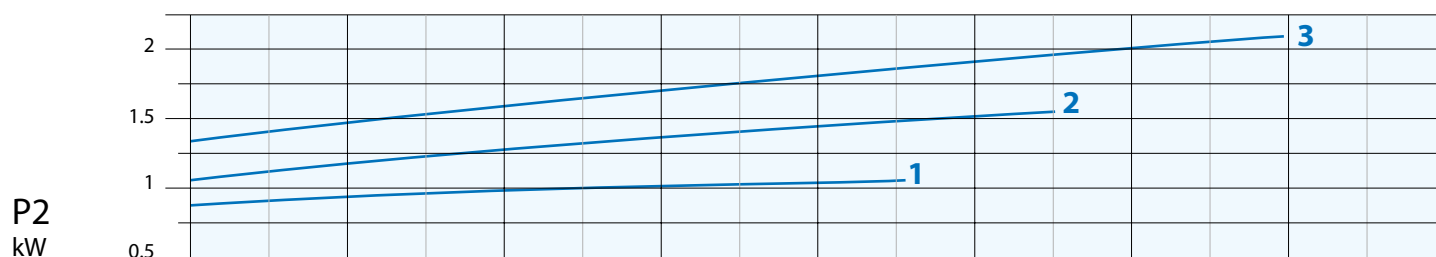
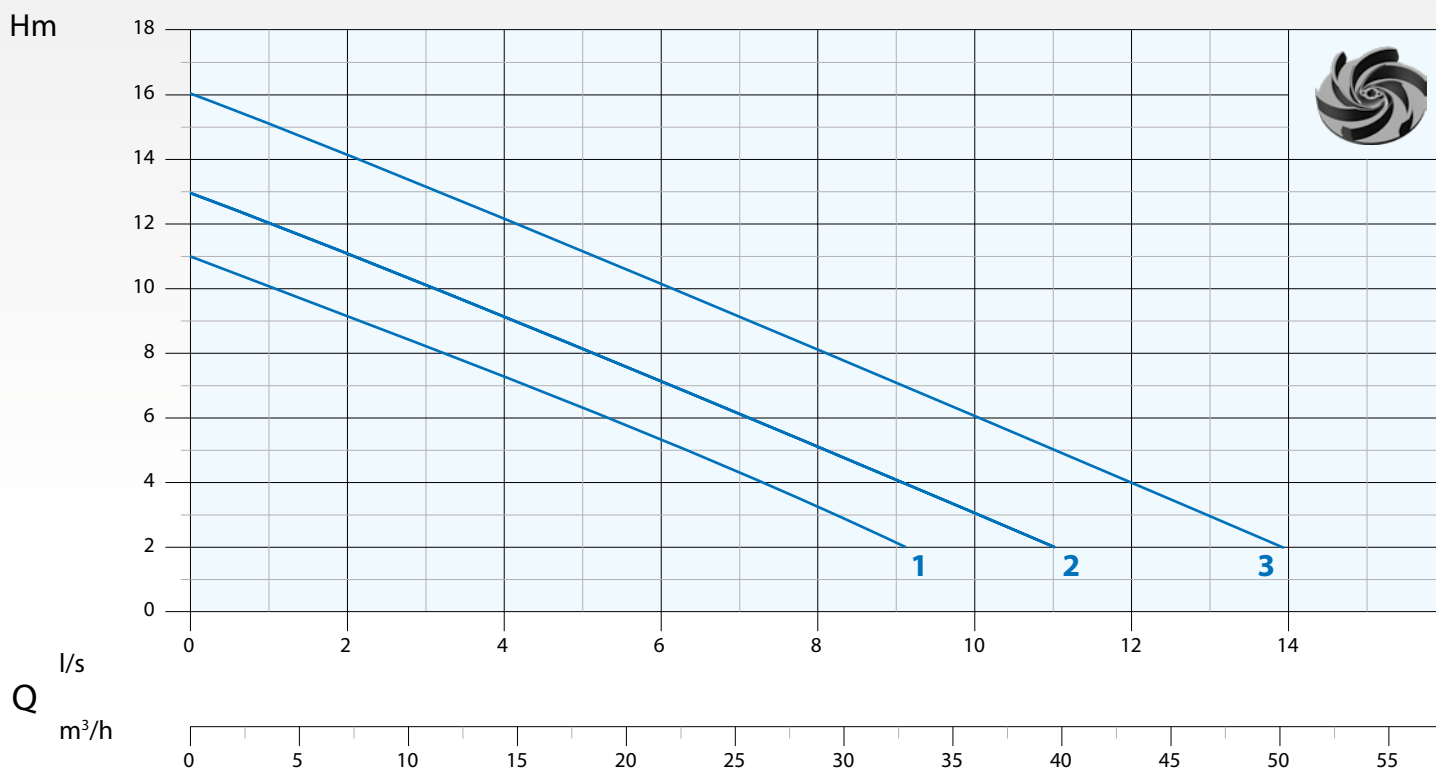
Horizontal Outlet DN65 PN10 - RPM 2850 1/min 2 poles

Immagine a solo scopo illustrativo
Picture for illustration purposes only



Curva di Prestazione

Performance Curve



N°	Tipo Type	l/s	1	2	4	6	8	10	11	12	14
			l/m	60	120	240	360	480	600	660	720
		m³/h	3,6	7,2	14,4	21,6	28,8	36,0	39,6	43,2	50,4
1	DNA 65-2/110 M/T	mt	10	9	7,5	5,5	3,2				
2	DNA 65-2/150 M/T		12	11	9	7	5	3	2		
3	DNA 65-2/220 T		15	14	12	10	8	6	5	4	2

N°	Tipo Type	EX	Mandata Delivery	Passaggio Free Passage	kW			R.P.M. 1/min	A			Hz
					P1	P2	HP		1 Phase - 230V	µf	3 Phase - 400V	
1	DNA 65-2/110 M/T	•	DN65 PN10	65 mm	1,6	1,1	1,5	2850	7,4	30	2,7	50
2	DNA 65-2/150 M/T	•			1,9	1,5	2		9,9	32	3,6	
3	DNA 65-2/220 T	•			2,6	2,2	3				5,2	

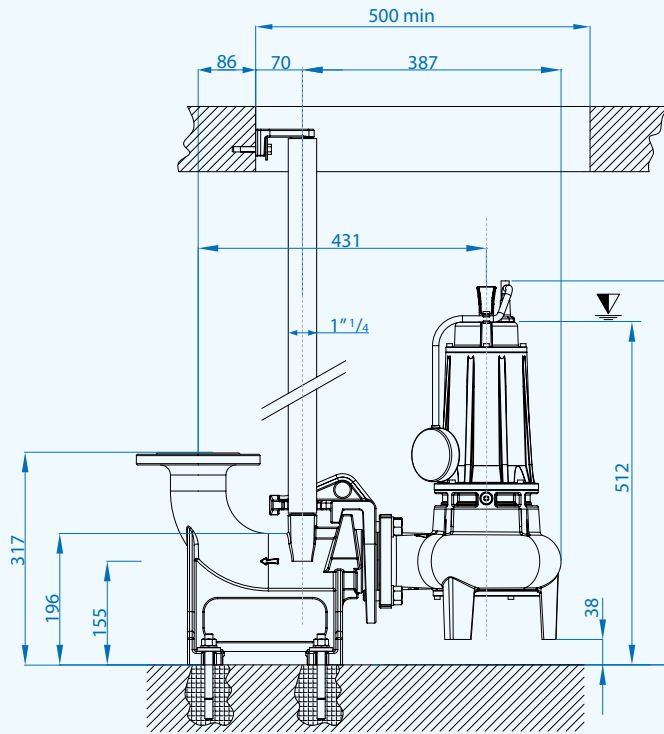
• Pompa antideflagrante disponibile con certificazione
Available explosion proof pump



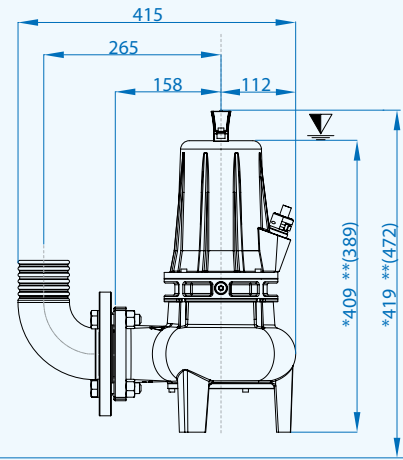
EPT 17 ATEX 2701 X



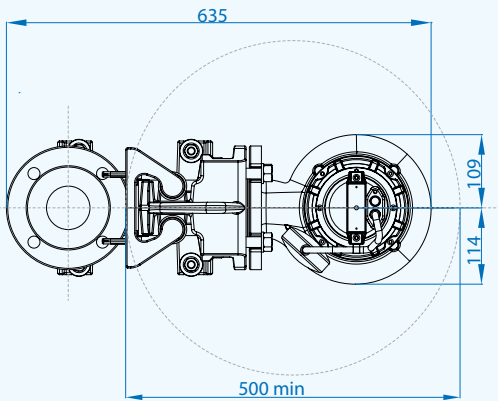
Ex db IIB T4 Gb
Ex h IIB T4 Gb
0° ≤ Ta ≤ 40°



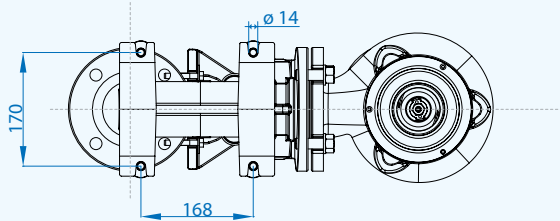
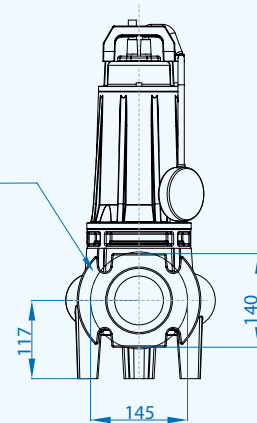
* DNA(EX) 65-2/220
 **VERSIONI ATEX fino a 1,5 kW - *ATEX VERSION up to 1,5kW



∇ Sommergenza minima
 Minimum submersion



DN65 PN10
 ex UNI 2277



Quote in mm
 Dimensions in mm

Cavi / Cables

Pompe Pumps	Fasi Phases	Cavo Cable	Sezione cavo mm ² Cable cross section mm ²	mt
DNA 65-2/110-150	1 ~ 230V	H07RN8F	3x1 Ø9*	10
	3 ~ 400V		4x1 Ø10**	10
DNA 65-2/220 T	3 ~ 400V	H07RN8F	4x1,5+2x0,50 Ø12**	10
Versioni/Versions ATEX	1 ~ 230V	NSSHÖU-J	4x1,5+2x0,50 Ø12***	10
	3 ~ 400V		4x1,5+2x0,50 Ø12**	10

* Spina Schuko - Schuko plug

** Terminali liberi - Free terminals *** Di serie con control-box - Standard with control-box

Dimensioni imballo / Packaging dimension

Tipo - Type	X mm	Y mm	Z mm	Kg
DNA 65-2/110 M/T				28
DNA 65-2/150 M/T	260	585	315	30
DNA 65-2/220 T				30,5

Accessori - Optional



Quadri ATEX disponibili su richiesta
 Explosion proof control box available
 on request



Pompe monofasi:
 Control-box per
 funzionamento con
 condensatore esterno
 For single phase pumps:
 Control-box with external
 main capacitor



Piede di accoppiamento
 rapido Tipo: DUTY 65
 Automatic coupling foot
 Type: DUTY 65

Curva flangiata
 portagomma N5
 Flanged hose connection N5

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 Date_06/02/20

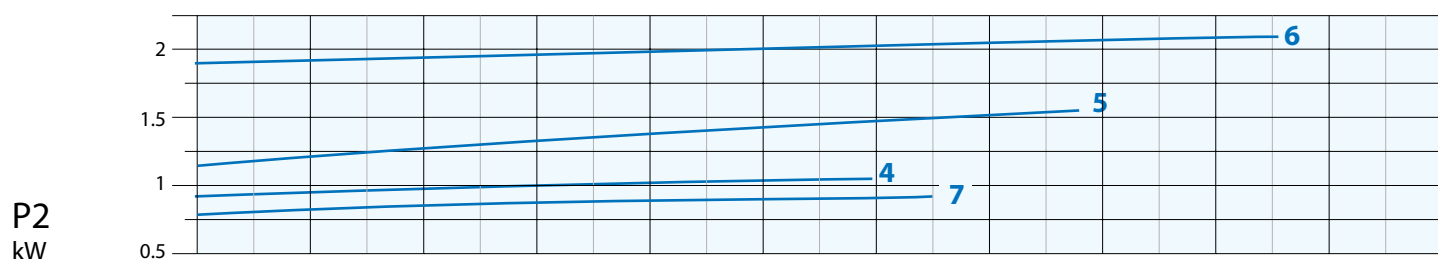
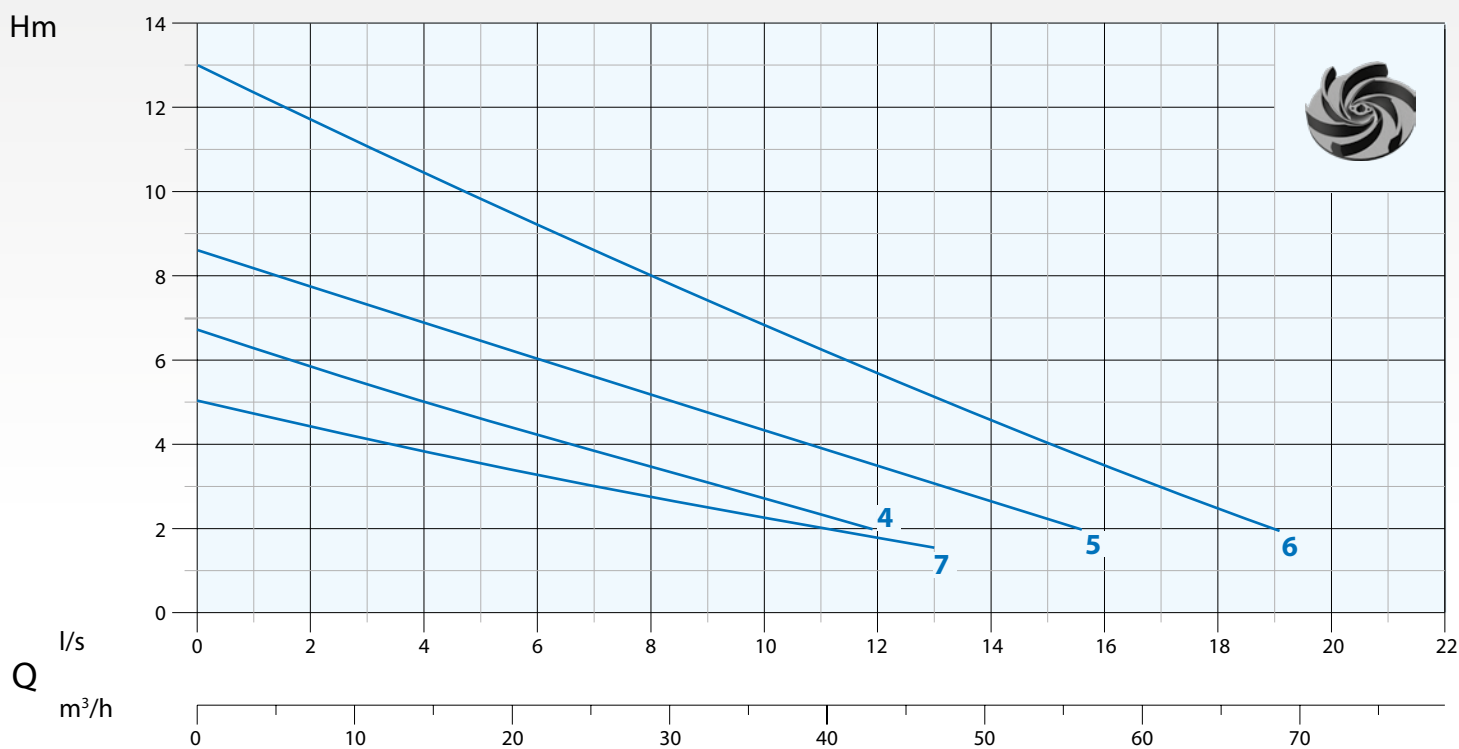
Mandata Orizzontale DN80 PN16
RPM 2850 1/min 2 poli
RPM 1450 1/min 4 poli

Horizontal Outlet DN80 PN16
RPM 2850 1/min 2 poles
RPM 1450 1/min 4 poles

Immagine a solo scopo illustrativo
 Picture for illustration purposes only



Curva di Prestazione
Performance Curve



N°	Tipo Type	l/s									
			1	2	4	6	8	10	12	14	16
			l/m	60	120	140	360	480	600	720	840
		m³/h	3,6	7,2	14,4	21,6	28,8	36,0	43,2	50,4	57,6
4	DNA 80-2/110 M/T	mt	6,5	5,8	5	4,5	3,5	2,8	2		
5	DNA 80-2/150 M/T		8,2	7,5	7	6	5,3	4,5	3,5	2,5	
6	DNA 80-2/220 T		12,5	11,5	10,5	9,2	8	6,8	5,8	4,5	3,5
7	DNA 80-4/090 M/T		4,8	4,5	3,9	3,2	2,8	2,5	1,8		

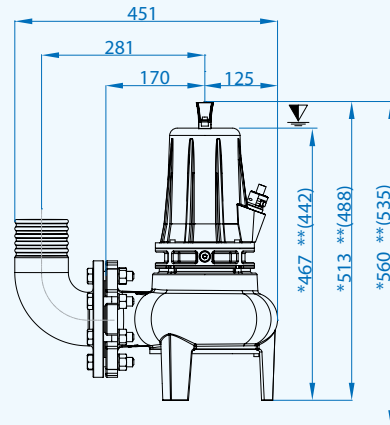
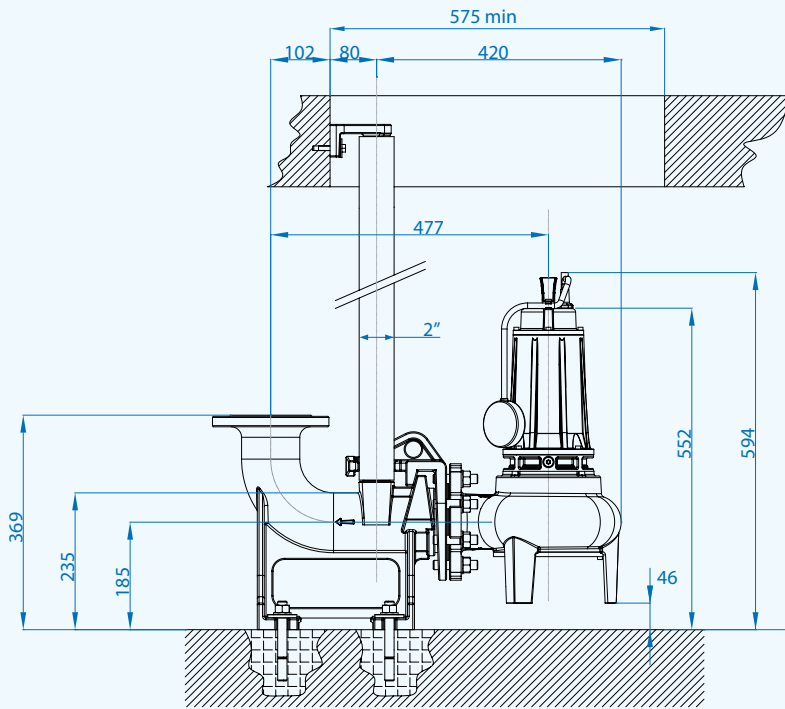
N°	Tipo Type	EX	Mandata Delivery	Passaggio Free Passage	kW			R.P.M. 1/min	A		Hz
					P1	P2	HP		1 Phase - 230V	µf	
4	DNA 80-2/110 M/T	•	DN80 PN16	80 mm	1,6	1,1	1,5	2850	7,4	30	2,8
5	DNA 80-2/150 M/T	•			1,9	1,5	2		9,9	32	3,6
6	DNA 80-2/220 T	•			2,7	2,2	3				5,3
7	DNA 80-4/090 M/T	•			75 mm	1,1	0,9		1,2	1450	4,7

• Pompa antideflagrante disponibile con certificazione
 Available explosion proof pump

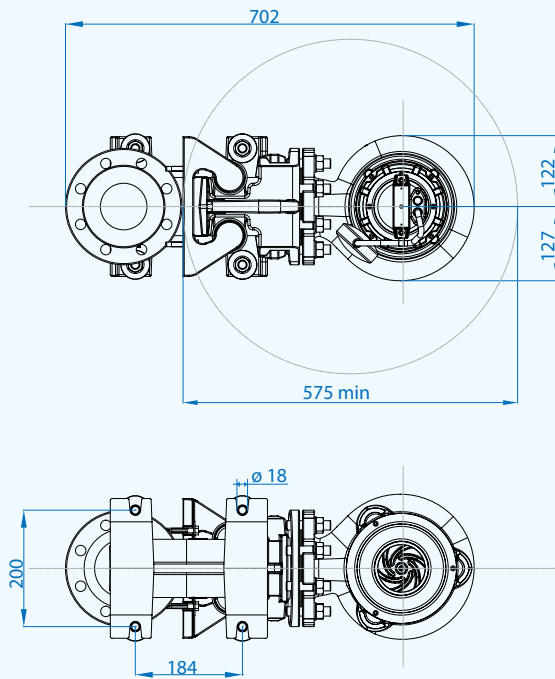
CE 0477
 EPT 17 ATEX 2701 X

Ex II 2G Ex db IIB T4 Gb
 Ex h IIB T4 Gb
 0° ≤ Ta ≤ 40°

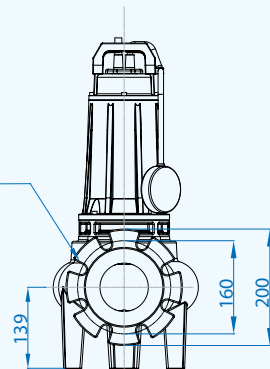
*DNA(EX) 80-2/220
 **VERSIONI ATEX fino a 1,5kW - *ATEX VERSION up to 1,5kW



∇ Sommergenza minima
 Minimum submersion



DN80 PN16
 ex UNI 2278



Quote in mm
 Dimensions in mm

Cavi / Cables

Pompe Pumps	Fasi Phases	Cavo Cable	Sezione cavo mm ² Cable cross section mm ²	mt
DNA 80-2/110/150	1 ~ 230V	H07RN8F	3x1 Ø9*	10
	3 ~ 400V		4x1 Ø10**	10
DNA 80-2/220	3 ~ 400V	H07RN8F	4x1,5+2x0,50 Ø12**	10
DNA 80-4/090	1 ~ 230V	H07RN8F	4x1,5+2x0,50 Ø12***	10
	3 ~ 400V		4x1,5+2x0,50 Ø12**	10
Versioni/Version ATEX	1 ~ 230V	NSSHÖU-J	4x1,5+2x0,50 Ø12***	10
	3 ~ 400V		4x1,5+2x0,50 Ø12**	10

* Spina Schuko - Schuko plug

** Terminali liberi - Free terminals *** Di serie con control-box - Standard with control-box

Dimensioni imballo / Packaging dimension

Tipo - Type	X mm	Y mm	Z mm	Kg
DNA 80-2/110 M/T	260	585	315	32
DNA 80-2/150 M/T				34,5
DNA 80-2/220 T				35
DNA 80-4/090 M/T				38

Accessori - Optional



Quadri ATEX disponibili su richiesta
 Explosion proof control box available on request



Pompe monofasi:
 Control-box per
 funzionamento con
 condensatore esterno
 For single phase pumps:
 Control-box with external
 main capacitor



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



Curva flangiata
 portagomma N2
 Flanged hose connection N2

Doc_Rev.1
 Date_06/02/20