## APPLICATIONS

*Pumping of liquids and extraction of leachate in landfill, drainage of **fluids contaminated by hydrocarbons** and groundwater.*
*The ATEX pumps in conformity with 2014/34/UE Directive can be installed in potentially explosive atmospheres according to the marking explained hereafter.*

## FEATURES

- *Multistage centrifugal electric submersible pumps for 4" wells.*
- *External pump case, delivery port, suction port, shaft and other components in AISI 316 stainless steel.*
- *Impellers and diffusers in special technopolymer.*
- *The check valve made of AISI 316 stainless steel is installed in the delivery head.*
- *Temperature of pumped liquid: max +40 °C.*
- *Special mechanical seal, particularly robust and reliable, with high resistance to wear and chemical abrasion.*

## MOTOR

- *2 poles asynchronous motor, 50 Hz, 2850 rpm.*
- *Class F insulation.*
- *IP68 protection.*
- *Working voltage: single-phase 230 V, three-phase 400 V.*
- *Oil filled electric motor.*

## ACCESSORIES

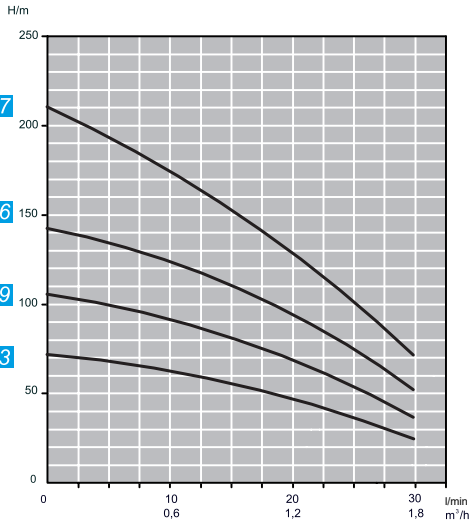
- *Control panel.*
- *Intrinsically safe module with ATEX supply circuit.*
- *ATEX level regulator with 5, 10 or 20 m of electric cable.*
- *ID ATEX electronic level transmitter.*
- *Maxifilter 142.*
- *Maxifilter 170, available also with slope riser for oblique wells.*
- *ID 4G1,5 round cable.*

## *Technical specifications*

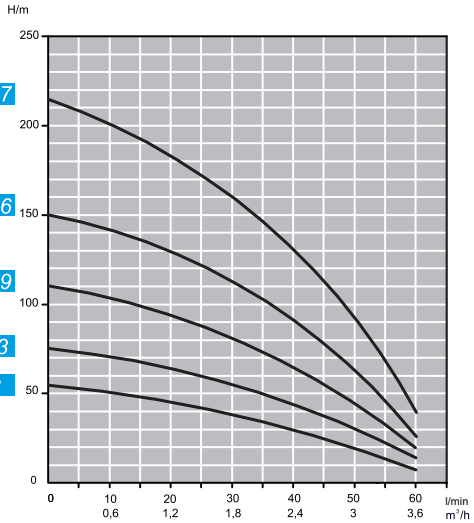
| Pump type | Motor | | Cap. µF VL 450 | Max current | | Outlet | Delivery | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HP | kW | | 230 V 1~ | 400 V 3~ | ø | l/min | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 140 | 160 | 180 | 200 | 240 | 280 | 320 | 360 | 400 |
| | | | | A | A | | $m^3/h$ | 0 | 0,6 | 1,2 | 1,8 | 2,4 | 3 | 3,6 | 4,2 | 4,8 | 5,4 | 6 | 6,6 | 7,2 | 8,4 | 9,6 | 10,8 | 12 | 14,4 | 16,8 | 19,2 | 21,6 | 24 |
| **ID THETA EX 13** | 0,5 | 0,37 | 16 | 3,8 | 1,5 | 1" 1/4 | Manometric head (m) | 70 | 62 | 46 | 25 | | | | | | | | | | | | | | | | | | | | | |
| **ID THETA EX 19** | 0,75 | 0,55 | 20 | 5,5 | 1,9 | | | 103 | 91 | 67 | 37 | | | | | | | | | | | | | | | | | | | | | |
| **ID THETA EX 26** | 1 | 0,75 | 30 | 6 | 2,2 | | | 141 | 125 | 92 | 51 | | | | | | | | | | | | | | | | | | | | | |
| **ID THETA EX 37** | 1,5 | 1,1 | 40 | 8,7 | 3,4 | | | 210 | 177 | 128 | 72 | | | | | | | | | | | | | | | | | | | | | |
| **ID CROMA EX 8** | 0,5 | 0,37 | 16 | 4,9 | 1,5 | | | 51 | 48 | 43 | 38 | 31 | 21 | 10 | | | | | | | | | | | | | | | | | | |
| **ID CROMA EX 13** | 0,75 | 0,55 | 20 | 5,6 | 1,9 | | | 74 | 70 | 62 | 55 | 45 | 31 | 14 | | | | | | | | | | | | | | | | | | |
| **ID CROMA EX 19** | 1 | 0,75 | 30 | 6,4 | 2,2 | | | 110 | 102 | 93 | 81 | 65 | 45 | 20 | | | | | | | | | | | | | | | | | | |
| **ID CROMA EX 26** | 1,5 | 1,1 | 40 | 9,2 | 4,2 | | | 150 | 140 | 127 | 111 | 89 | 62 | 27 | | | | | | | | | | | | | | | | | | |
| **ID CROMA EX 37** | 2 | 1,5 | 50 | 12,5 | 5,7 | | | 214 | 199 | 181 | 157 | 127 | 88 | 39 | | | | | | | | | | | | | | | | | | |
| **ID GAMMA EX 13** | 1 | 0,75 | 30 | 6,4 | 2,3 | | | 75 | 71 | 67 | 61 | 56 | 50 | 44 | 37 | 31 | 25 | 18 | | | | | | | | | | | | | | |
| **ID GAMMA EX 19** | 1,5 | 1,1 | 40 | 9,7 | 3,7 | | | 110 | 104 | 98 | 89 | 82 | 73 | 64 | 54 | 45 | 36 | 26 | | | | | | | | | | | | | | |
| **ID GAMMA EX 26** | 2 | 1,5 | 50 | 12,9 | 4,8 | | | 150 | 142 | 134 | 122 | 112 | 100 | 89 | 75 | 63 | 51 | 36 | | | | | | | | | | | | | | |
| **ID KAPPA EX 10** | 1 | 0,75 | 30 | 5,9 | 2,1 | | | 61 | | | 50 | 46 | 43 | 38 | 34 | 30 | 25 | 21 | 16 | 11 | | | | | | | | | | | | |
| **ID KAPPA EX 16** | 1,5 | 1,1 | 40 | 9 | 3,3 | | | 93 | | | 80 | 74 | 68 | 61 | 55 | 48 | 41 | 33 | 25 | 18 | | | | | | | | | | | | |
| **ID KAPPA EX 22** | 2 | 1,5 | 50 | 12,1 | 4,5 | | | 128 | | | 110 | 102 | 93 | 84 | 75 | 66 | 56 | 45 | 35 | 25 | | | | | | | | | | | | |
| **ID KAPPA EX 34** | 3 | 2,2 | — | — | 6,1 | | | 198 | | | 170 | 158 | 144 | 130 | 116 | 102 | 86 | 70 | 54 | 38 | | | | | | | | | | | | |
| **ID OMEGA EX 11** | 1,5 | 1,1 | 40 | 9 | 3,4 | 2" | | 65 | | | | 56 | 53 | 50 | 48 | 46 | 43 | 40 | 36 | 32 | 25 | 18 | 8 | | | | | | | | | |
| **ID OMEGA EX 17** | 2 | 1,5 | 50 | 12,7 | 4,7 | | | 100 | | | | 86 | 82 | 77 | 74 | 71 | 66 | 61 | 55 | 52 | 41 | 28 | 18 | | | | | | | | | |
| **ID OMEGA EX 22** | 3 | 2,2 | — | — | 5,7 | | | 130 | | | | 108 | 103 | 98 | 91 | 84 | 78 | 72 | 67 | 61 | 49 | 34 | 22 | | | | | | | | | |
| **ID SIGMA EX 8** | 1,5 | 1,1 | 40 | 9,1 | 3,7 | | | 47 | | | | | 42 | 41 | 40 | 39 | 37 | 36 | 34 | 32 | 30 | 26 | 24 | 20 | 12 | | | | | | | |
| **ID SIGMA EX 11** | 2 | 1,5 | 50 | 11,7 | 4,8 | | | 65 | | | | | 58 | 57 | 55 | 53 | 51 | 49 | 47 | 45 | 41 | 37 | 33 | 28 | 17 | | | | | | | |
| **ID SIGMA EX 16** | 3 | 2,2 | — | — | 6,1 | | | 94 | | | | | 84 | 82 | 80 | 77 | 74 | 71 | 68 | 65 | 59 | 53 | 47 | 40 | 24 | | | | | | | |
| **ID IOTA EX 6** | 1,5 | 1,1 | 40 | 8,1 | 3,2 | | | 28 | | | | | | | | 26 | 25 | 24 | 23 | 22 | 21 | 19 | 17 | 16 | 13 | 9 | 6 | 3 | 1 | | | |
| **ID IOTA EX 9** | 2 | 1,5 | 50 | 10,8 | 4,5 | | | 40 | | | | | | | | 34 | 32 | 31 | 29 | 28 | 27 | 26 | 25 | 24 | 20 | 16 | 10 | 6 | 2 | | | |
| **ID IOTA EX 12** | 3 | 2,2 | — | — | 5,8 | | | 56 | | | | | | | | 48 | 47 | 46 | 45 | 44 | 42 | 40 | 36 | 34 | 29 | 23 | 17 | 11 | 5 | | | |

## Performance curves

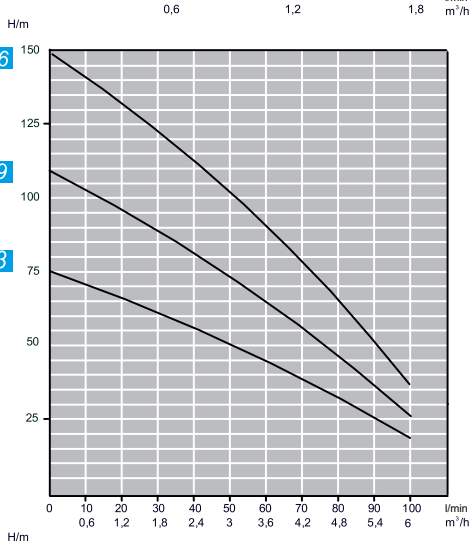
ID THETA EX 37
ID THETA EX 26
ID THETA EX 19
ID THETA EX 13



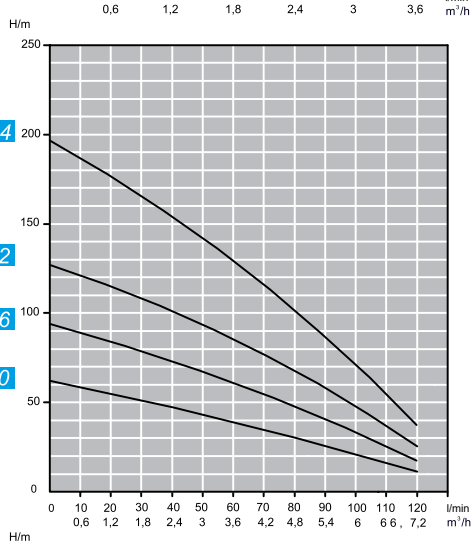

ID CROMA EX 37
ID CROMA EX 26
ID CROMA EX 19
ID CROMA EX 13
ID CROMA EX 8



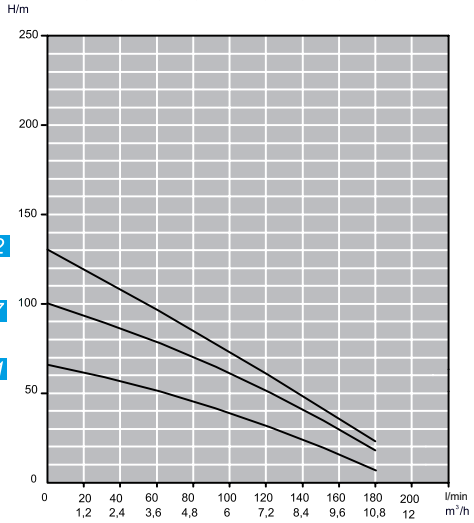

ID GAMMA EX 26
ID GAMMA EX 19
ID GAMMA EX 13



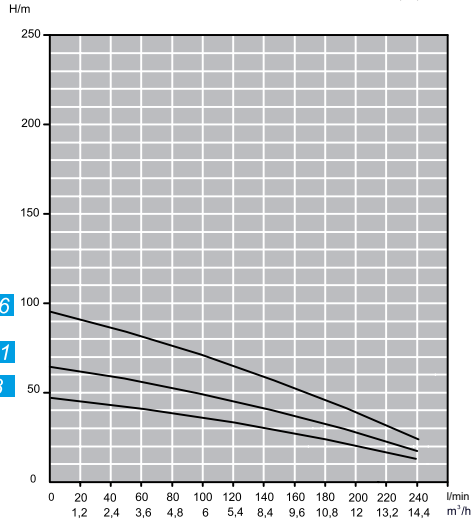

ID KAPPA EX 34
ID KAPPA EX 22
ID KAPPA EX 16
ID KAPPA EX 10



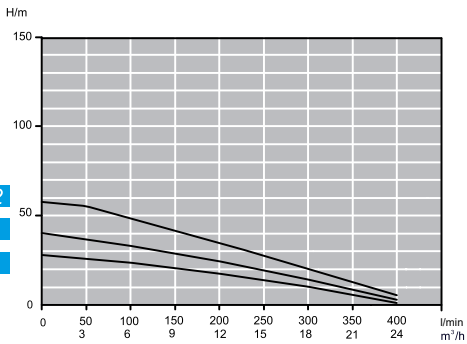

ID OMEGA EX 22
ID OMEGA EX 17
ID OMEGA EX 11




ID SIGMA EX 16
ID SIGMA EX 11
ID SIGMA EX 8

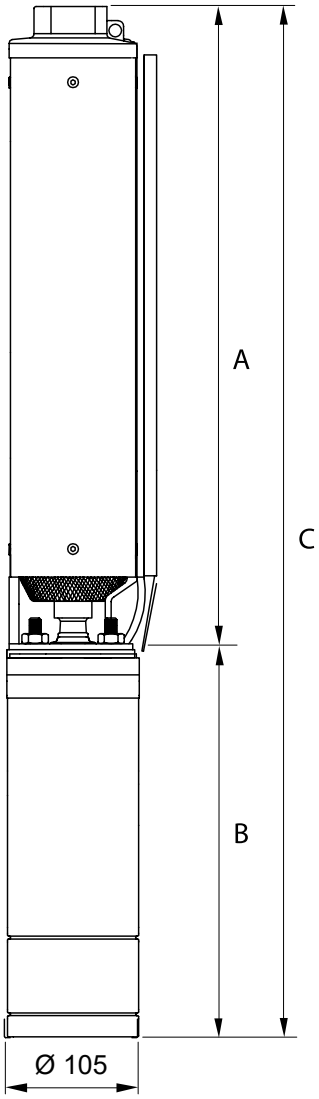



ID IOTA EX 12
ID IOTA EX 9
ID IOTA EX 6



## *Dimensions and weights*

| Pump type | Dimensions | | | | | Weight | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | mm | | | | | kg | | | | |
| | A | B | | C | | A | B | | C | |
| | | 230 V 1~ | 400 V 3~ | 230 V 1~ | 400 V 3~ | | 230 V 1~ | 400 V 3~ | 230 V 1~ | 400 V 3~ |
| ID THETA EX 13 | 475 | 340 | 340 | 815 | 815 | 3,8 | 9 | 9 | 12,8 | 12,8 |
| ID THETA EX 19 | 610 | 340 | 340 | 950 | 950 | 4,9 | 9 | 9 | 13,9 | 13,9 |
| ID THETA EX 26 | 790 | 340 | 340 | 1130 | 1130 | 6,2 | 9 | 9 | 15,2 | 15,2 |
| ID THETA EX 37 | 1037 | 380 | 380 | 1417 | 1417 | 8,1 | 10,9 | 10,9 | 19 | 19 |
| ID CROMA EX 8 | 363 | 340 | 340 | 703 | 703 | 3 | 9 | 9 | 12 | 12 |
| ID CROMA EX 13 | 475 | 340 | 340 | 815 | 815 | 3,8 | 9 | 9 | 12,8 | 12,8 |
| ID CROMA EX 19 | 610 | 340 | 340 | 950 | 950 | 4,9 | 9 | 9 | 13,9 | 13,9 |
| ID CROMA EX 26 | 790 | 380 | 380 | 1170 | 1170 | 6,2 | 10,9 | 10,9 | 17,1 | 17,1 |
| ID CROMA EX 37 | 1037 | 460 | 420 | 1497 | 1457 | 8,1 | 14,7 | 12,8 | 22,8 | 20,9 |
| ID GAMMA EX 13 | 540 | 340 | 340 | 880 | 880 | 4,2 | 9 | 9 | 13,2 | 13,2 |
| ID GAMMA EX 19 | 705 | 380 | 380 | 1085 | 1085 | 5,3 | 10,9 | 10,9 | 16,2 | 16,2 |
| ID GAMMA EX 26 | 920 | 460 | 420 | 1380 | 1340 | 6,8 | 14,7 | 12,8 | 21,5 | 19,6 |
| ID KAPPA EX 10 | 460 | 340 | 340 | 800 | 800 | 3,7 | 9 | 9 | 12,7 | 12,7 |
| ID KAPPA EX 16 | 622 | 380 | 380 | 1002 | 1002 | 5 | 10,9 | 10,9 | 15,9 | 15,9 |
| ID KAPPA EX 22 | 812 | 460 | 420 | 1272 | 1232 | 6,2 | 14,7 | 12,8 | 20,9 | 19 |
| ID KAPPA EX 34 | 1140 | — | 460 | — | 1600 | 8,7 | — | 14,7 | — | 23,4 |
| ID OMEGA EX 11 | 606 | 380 | 380 | 986 | 986 | 5 | 10,9 | 10,9 | 15,9 | 15,9 |
| ID OMEGA EX 17 | 861 | 460 | 420 | 1321 | 1281 | 6,8 | 14,7 | 12,8 | 21,5 | 19,6 |
| ID OMEGA EX 22 | 1054 | — | 460 | — | 1514 | 8 | — | 14,7 | — | 22,7 |
| ID SIGMA EX 8 | 632 | 380 | 380 | 1012 | 1012 | 5,3 | 10,9 | 10,9 | 16,2 | 16,2 |
| ID SIGMA EX 11 | 800 | 460 | 420 | 1260 | 1220 | 6,3 | 14,7 | 12,8 | 21 | 19,1 |
| ID SIGMA EX 16 | 1105 | — | 460 | — | 1565 | 8,1 | — | 14,7 | — | 22,8 |
| ID IOTA EX 6 | 656 | 380 | 380 | 1036 | 1036 | 5,1 | 10,9 | 10,9 | 16 | 16 |
| ID IOTA EX 9 | 890 | 460 | 420 | 1350 | 1310 | 6,6 | 14,7 | 12,8 | 21,3 | 19,4 |
| ID IOTA EX 12 | 1149 | — | 460 | — | 1609 | 8,6 | — | 14,7 | — | 23,3 |




A *Hydraulic part*

B *Motor*

C *Electric pump*

## ATEX marking

| | |
|---|---|
| **II** | *Group of apparatus - equipment for surface plants.* |
| **2G** | *Category - equipment compatible to be installed in potentially explosive atmospheres with gas, steams and vapours (area 1); this equipment is suitable for area 1 and area 2.* |

## 4” ATEX electric pumps and 4” ID ATEX electric pumps protection

| | |
|---|---|
| **Ex** | *Protection against explosions.* |
| **eb** | *Type of protection applied to electrical motor – increased safety “e”, level “b” – type of protection applied to electrical apparatus in which additional measures are applied so as to give increased safety against the possibility to excessive temperature and of the occurrence of ark and sparks in normal service or under specified abnormal conditions.* |
| **h** | *Type of protection applied to hydraulic part – constructional safety “k” – ignition protection where constructional measures are applied so as to protect against the possibility of ignition from hot surfaces, sparks and adiabatic compression generated by moving parts.* |
| **mb** | *Type of protection applied to connection facility to external circuits – encapsulation “m”, level “b” – type of protection whereby parts that are capable of igniting an explosive atmosphere by either sparking or heating are fully enclosed in a compound or other non-metallic enclosure with adhesion in such a way as to avoid ignition of a dust layer or explosive atmosphere under operating or installation conditions.* |
| **ob** | *Type of protection applied to electrical motor – liquid immersion “o”, level “b” – type of protection in which the electrical equipment or parts of the electrical equipment are immersed in a protective liquid in such a way that an explosive gas atmosphere which may be above the liquid or outside the enclosure cannot be ignited.* |
| **IIC** | *Subgroup of gas: equipment compatible to be installed with all combustible gas.* |
| **T5/T6** | *Class temperature – maximum temperature of the equipment 100 °C . When the mark is T6 the maximum temperature of the machine is 85 °C.* |
| **Gb** | *Protection level of equipment compatible to be installed in potentially explosive atmospheres with combustible gas - level b.* |