

Customer

Supplier

Company name
Editor
Phone number
E-mail

Fields of Application

Domestic and industrial raw sewage waste transport
Sewage treatment plants
Liquids containing sludge and solid particles transport
Factory waste water transport
Liquids containing fibrous particles and other applications

Design Specification

Enduro submersible pumps designed and manufactured according to the TS 12599 standard.

In electrical motor winding, in F insulation class cable has been used according to TS 60085:2011. User and motor security is at the forefront by using a 2, 4 or 6 pole induction motor that has IP 68 protection class in accordance with TS 3033 EN 60529.

It has possibility of use in several fields with special impeller design and ability of pump different wastewater depending on impeller structure.

Enduro submersible pumps, produced with modern casting and manufacturing technologies, can be made of different materials according to the application field and customer demands.

In the components of the pump motor housing and the motor cable in the place of entry into casing, all sealing precautions are taken to be no leakage into the motor.

Stuffing box in the helical structure having a creative design, keeps solid particles contained in the waste water away from the mechanical seal, thus it protects mechanical seal and offers a long operating life.

An electrode system is used in case of water leakage caused by worn out mechanical seal or any other reason. Through the use of thermistor, protection is provided against motor overheating.

H07RN-F special type cables are used according to TS EN 50525-2-21 standard. The core colors of the cable are selected according to HD 308.EI4 Type (EPR) rubber is used as an isolated material that is resistant against the corrosive effect of the waste water.

Technical Data

Discharge Flanges	: DN 50 - DN 200 (PN 10 - PN 16)
Operating Pressure	: 10 bar
Flow Range (Q)	: 20 - 600 m ³ /h
Head Range (Hm)	: 10 - 45 m
Speed Range	: 1000 - 3600 rpm
Temperature	: Up to 40 °C

If the pump is diving deeper than the depth of 7 meters from the surface of the liquid, please notify in your orders.

Impeller Types Used in Enduro Series

Vortex Impellers (X Type): In this type of impellers, liquid transfer is provided by vortex movement in front of impeller. Liquids are supplied transmission to the discharge flange by reducing contact the impeller.

- Raw sewage
- Activated sludge
- Circulated and heated sludge
- Wastewater containing hair, thread etc.

Double Vane Impellers (D Type): These types of impellers for liquids containing long fibers, big solid particles (close to the diameter of the pump intake).

- Raw sewage
- Solid - liquid mixtures
- Raw and digested sludge
- Activated sludge
- Circulated and heated sludge

Grinding Blade Applications: Enduro series submersible sewage and waste water pumps which have grinding blade design, can grind solid particles and fibers inside liquids and transport to the system. Thus, the blockage does not occur Enduro submersible pumps.



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Operating data specification

Pumped fluid	Water	Rated flow	20	m ³ /h
Solids		Rated head	18	m
Kind		Geodetic head	0	m
Percentage of solid content	0	Available system NPSH		m
pH value		Inlet pressure (pin)	0	kPa
Temperature	20	Altitude above sea level	100	m
Density	998.3	Max. operating pressure	229	kPa
Kin. viscosity	1.005	Max. diff. pressure	229	kPa
Vapour pressure	2.34			

Pump

Make	MAS DAF	Impeller type		
Pump type	Enduro 50-160 D	Impeller construction		
Frame size		Impeller Ø		
Design		Max.	160	mm
Self priming	<input checked="" type="checkbox"/> No	designed	146	mm
Speed	2800	rpm	120	mm
Stages	1	Flow		
Suction port		Nominal	26.1	m ³ /h
Pressure rating		Max.	41.1	m ³ /h
Nominal pipe size		Min.	0	m ³ /h
Standard		Head		
Discharge port		Nominal	16.9	m
Pressure rating	PN10	Min.	8.88	m
Nominal pipe size	DN50	Max.	23.4	m
Standard	DIN	Shut off head	23.4	m
Shaft power	2.53	kW	NPSH3	2.2
Shaft power P2(Q=max.)	2.94	kW	Efficiency	42.9
				%

Motor

Make/Type	MAS EM 2-3 KW/100L
Specific design	ENDURO / 50 Hz / Pole pairs 1
Rated power	3 kW
Electric voltage	3~ 400 V
Speed	2885 rpm
Electric current	6 A
Frame size	100L
Degree of protection	IP 68
Type of protection	
Explosion protection	

Coupling

Make/Type	
Series	
Spacer length	mm
Frame size	

Materials

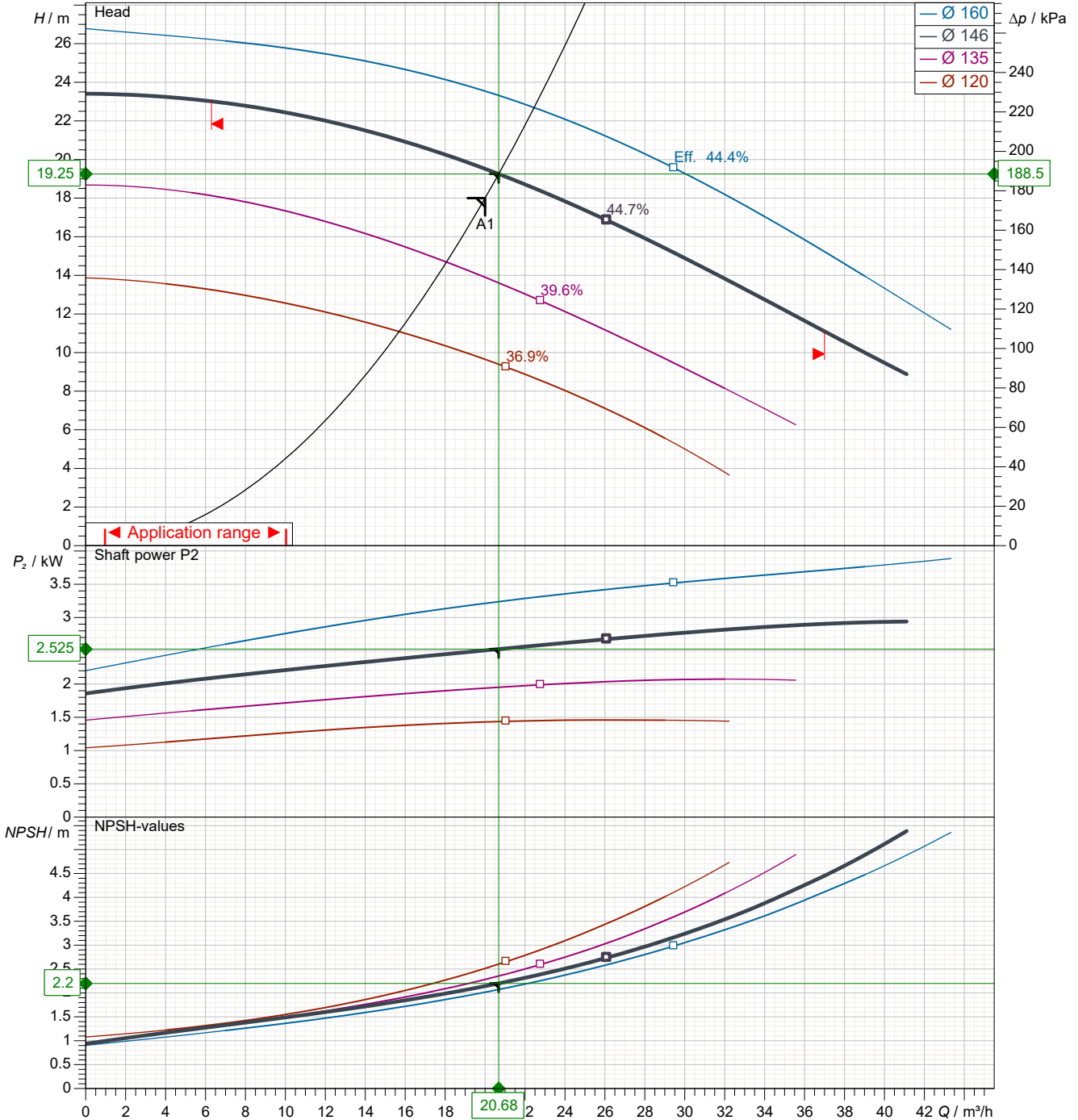
Pump		Shaft seal	Q1Q1PGG
Motor Casing	GJL-250 (GG25)	Material code	Q1Q1PGG
Pump Casing	GJL-250 (GG25)	Seal face	Silicon carbide (Q1, eSiC-Q7)
Impeller	GJL-250 (GG25)	Seat	Silicon carbide (Q1, eSiC-Q7)
Shaft	A 276 Type 420 (X20Cr13)	Elastomer	NBR (P)
		Metal parts	CrNiMo steel (G)

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Power data referred to: Water; 20°C; 998.3kg/m³; 1.005mm²/s Sense of rotation Clockwise from the drive end



Pump curves in accordance with ISO 9906 2B

Pumped fluid	Water	Rated flow	20	m ³ /h
Temperature	20 °C	Rated head	18	m
Density	998.3 kg/m ³	Shaft power	2.53	kW
Kin. viscosity	1.005 mm ² /s	Speed	2800	rpm
Vapour pressure	2.34 kPa	NPSH3	2.2	m
Impeller Ø	146 mm	Efficiency	42.9	%

Subject to change

Projec

Issue date

Last update

2023-03-10

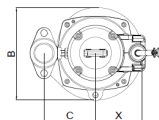
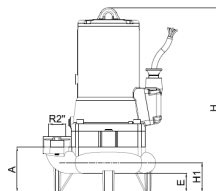
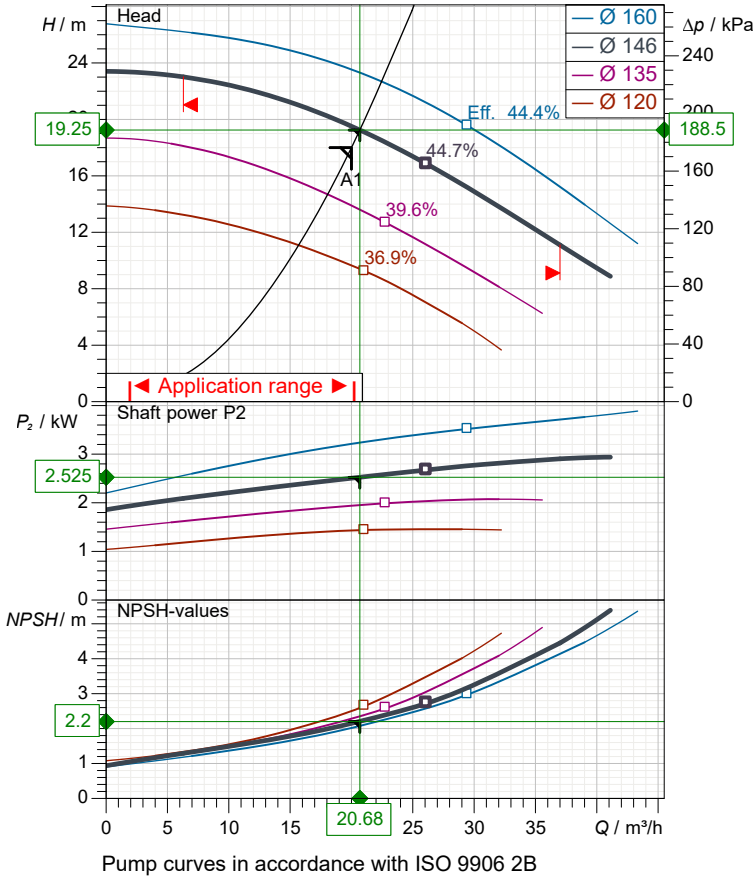
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Performance curves



Dimensions

	mm
A	122.5
B	255
C	141
Dbø	50
E	51
H	522
H1	80
X	133

Pump

Make	MAS DAF
Pump type	Enduro 50-160 D
Design	
Suction port	
Pressure rating	
Nominal pipe size	
Standard	
Discharge port	
Pressure rating	PN10
Nominal pipe size	DN50
Standard	DIN

Operating data specification

Pumped fluid	Water	
Temperature	20	°C
Density	998.3	kg/m ³
Kin. viscosity	1.005	mm ² /s
Vapour pressure	2.34	kPa
Rated flow	20	m ³ /h
Rated head	18	m
Shaft power	2.53	kW
Speed	2800	rpm
NPSH3	2.2	m
Efficiency	42.9	%
Impeller Ø	146	mm

Motor

Make/Type	MAS EM 2-3 KW/100L
Specific design	ENDURO / 50 Hz / Pole pairs 1
Rated power	3 kW
Speed	2885 rpm
Electric voltage	3~ 400 V
Electric current	6 A
Degree of protection	IP 68

Materials

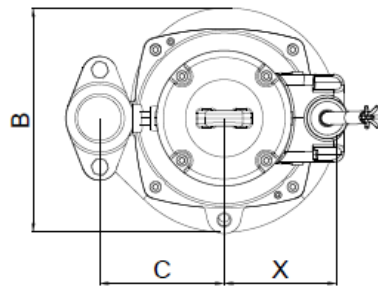
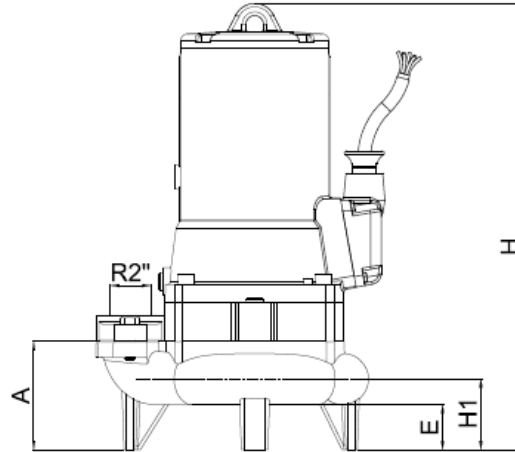
Shaft seal	Q1Q1PPG
Material code	Q1Q1PPG
Seal face	Silicon carbide (Q1, eSiC-Q7)
Seat	Silicon carbide (Q1, eSiC-Q7)
Elastomer	NBR (P)
Metal parts	CrNiMo steel (G)

Motor Casing	GJL-250 (GG25)
Pump Casing	GJL-250 (GG25)
Impeller	GJL-250 (GG25)
Shaft	A 276 Type 420 (X20Cr13)

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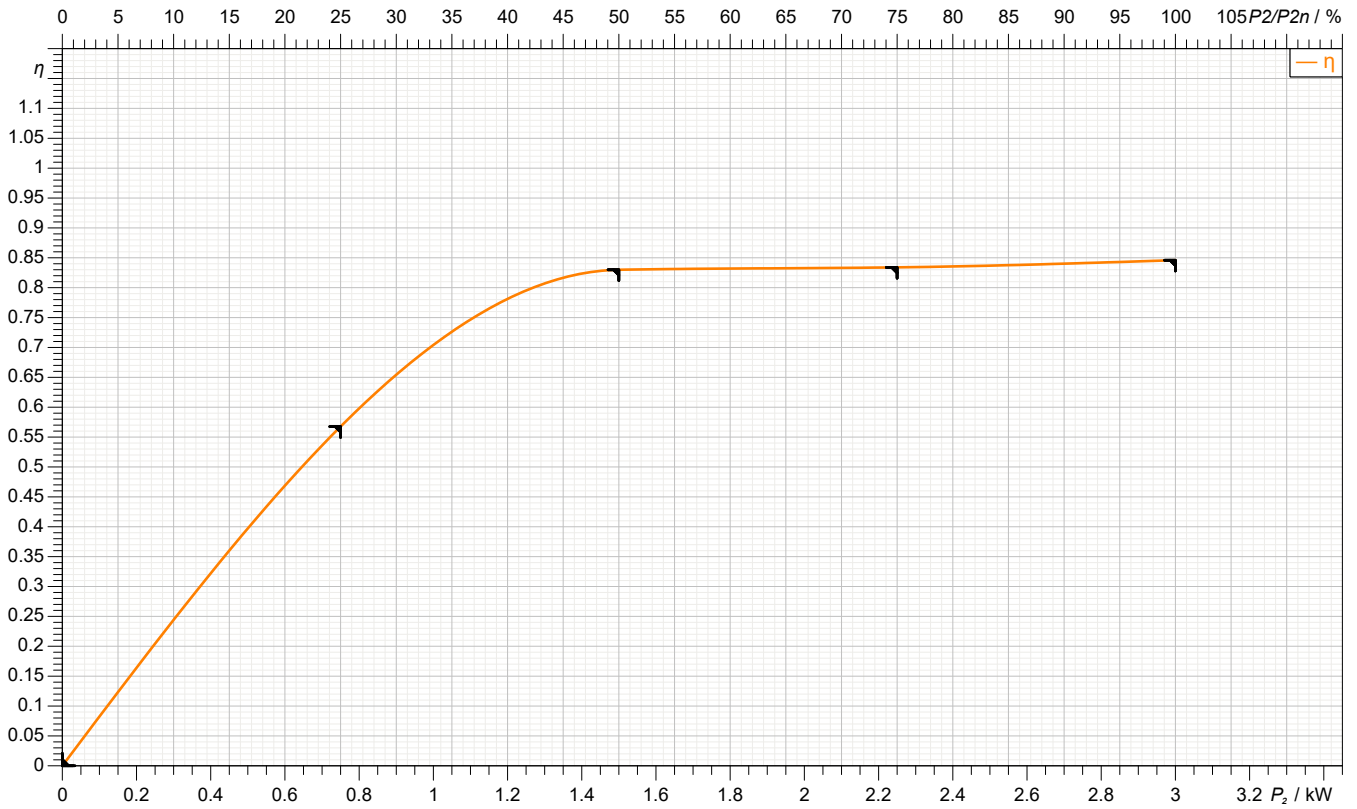
Dimensions	mm	Inlet / outlet	Discharge port
A	122.5	Suction port	DN50
B	255		PN10
C	141		
Dbø	50		
E	51		
H	522		
H1	80		
X	133		

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motor data



Symbol	No load	25 %	50 %	75 %	100 %	125 %
P ₂ / kW	0					
P ₁ / kW		1.321	1.807	2.698	3.546	
I / A	0					

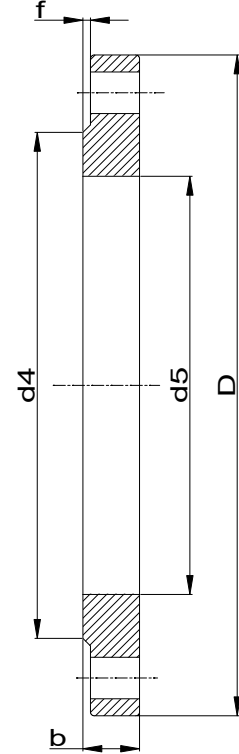
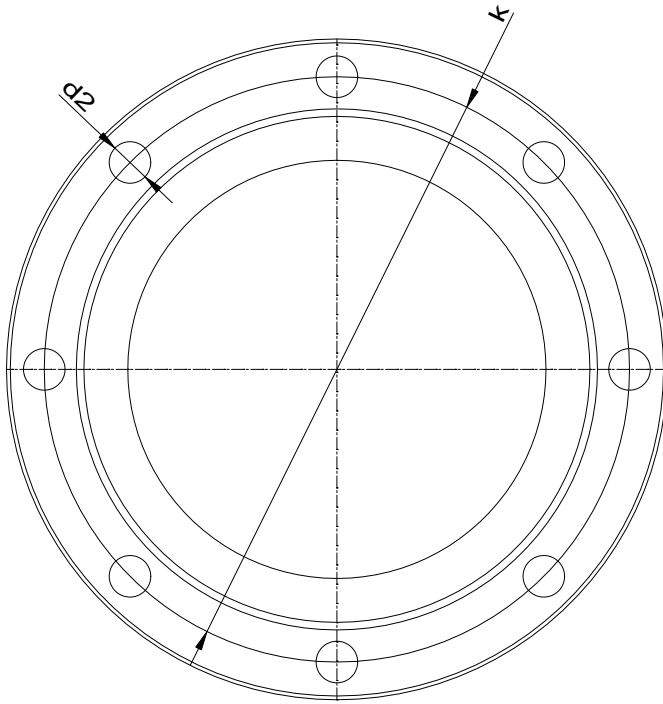
Motor

Make/Type	MAS EM 2-3 KW/100L	Degree of protection	IP 68
Specific design	ENDURO / 50 Hz / Pole pairs 1	Type of protection	
Rated power	3 kW	Explosion protection	
Electric voltage	3~ 400 V	Service factor	1.15
Number of poles	2	Starting current	
Speed	2885 rpm	Starting torque	
Electric current	6 A	Moment of inertia	
Power factor	0.85	No. starts per hour	
Frame size	100L	Rated torque	9.93 Nm
Efficiency class	ENDURO	Insulation class	F (155C°)

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Suction connection

Discharge connection

DN50
PN10

Dimensions **mm**

Dimensions **mm**

b	19
D	165
d2	18
d4	102
d5	61.5
DN	50
f	2
k	125
n	4



Spare part list
Enduro 50-160 D

Revision number

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Subject to change

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Spare part list
Enduro 50-160 D

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