Electrical Pump

PREMAxx

230 V AC, single phase • 24 V DC • 12 V DC

Operating Instructions



Contents:

- 1. General information
- 1.1 Intended use
- 1.2 Construction and functional description
- 1.3 Technical data
- 1.4 Area of application
- 1.5 Requirements of installation site

2. General Safety Notes

- 2.1 Notes concerning work safety
- 2.2 Explanation of safety note used
- 2.3 Risks when using the electrical pump **PREMAxx**
- 3. Assembly
- 4. Operation
- 4.1 First operation and renewed operation
- 4.2 Normal operation
- 4.3 Emergency operation
- 5. Disassembly
- 6. Maintenance
- 7. Repair / Service
- 8. Declaration of EC conformity



1. General Information

Intended use

The **PREMAxx** electrical pump is designed exclusively for pumping diesel and fuel oil in areas that do not carry a risk of explosion.

The intended use also includes the adherence to the instruction for assembly (=> see chapter 3), for the operation (=> see chapter 4), for disassembly (=> see chapter 5), and for maintenance (=> see chapter 6).

Any use beyond these parameters (e.g. operation using fuels of different hazard classes) can lead to serious risks and is regarded as use that is contrary to the intended purpose.

The operator is liable for any damage arising out of use that is not for the intended purpose.

1.2 Construction and functional description

The **PREMAxx** electrical pump is an electrically powered delivery pump for diesel and fuel oil. It can be screwed onto storage containers or tanks.

The **PREMAxx** electrical pump is available with the following motor options:

- Type 1: 230 V, AC, single phase
- Type 2: 24 V, DC
- Type 3: 12 V, DC

It is equipped with various nozzles:

- with a standard nozzle or
- with a self-closing automatic nozzle or
- with a self-closing automatic nozzle with construction type approval (according to § 12 VbF, tested by the PTB). We happily supply the construction type approval on request.

The pump is delivered as a set comprising:

- PREMAxx electrical pump in one of the above mentioned motor options,
- Set of hoses (suction hose, suction pipe with filter, delivery hose, hose clamps),
- Nozzle in one of the above mentioned versions.

Although the **PREMAxx** electrical pump is not a self-priming pump, it is quickly ready for use in connection with the integrated priming stage. The priming stage enables manual priming of the delivery fluid before start of operation and secures emergency service for minimum quantities in the event of power loss.

The pump housing is made from high quality knock-resistant plastic.

To avoid environmental damage, the **PREMAxx** electrical pump is equipped with a siphon protector. If the delivery hose should be damaged whilst the pump is inoperative, it will prevent the emergence of diesel or fuel oil.



1.3 Technical data

Designation	Туре 1	Type 2	Туре 3
Voltage	230 V	24 V	12 V
Frequency	50 Hz		
Current type	single phase AC	DC	DC
Power consumption	1.8 A	10 A	14 A
Performance	320 W	240 W	180 W
Delivery performance*	52 l/min	43 l/min	38 l/min
Max. delivery height	15 m	10 m	9 m
Weight	2.5 kg	2.5 kg	2.5 kg
*for free run-off, suction height 1.6 m, DN 19			

Table 1-1: Performance data

Designation	Value
Temperature of delivery medium	-10 ℃ to +35 ℃
Length of suction hose	1.6 m
Length of delivery hose	4 m
Suction height	Max. 2 m
Container connection	G 2" and M 64 x 4
Length of connecting cable	Type 1 (230 V AC, single phase): 2 m Type 2 and 3 (24 V DC and 12 V DC): 3 m
Protection type:	IP 34/II
Noise level:	70 db (A)

Table 1-2: General technical data

1.4 Area of application

The **PREMAxx** electrical pump is only designed for pumping diesel and fuel oil, if they are not heated above the flash point.

The temperature of the delivered fluid must be between -10 °C and +35 °C. The temperature limits must not be exceeded.

As the motor and switches of the **PREMAxx** electrical pump are not protected against explosion, the pump must **not**

- be operated in areas with a risk of explosion,
- be used for dispensing of other liquids than indicated.

The **PREMAxx** electrical pump is suitable for permanent operation up to 60 minutes only.

1.5 Requirements of installation site

Fuel oil and diesel are materials hazardous to water. Therefore observe the Provisions of the Water Household Law (WHG) and the Facilities Provisions of the (German) States (VawS).



According to § 19g of WHG, facilities for filling must be designed, installed, erected, maintained and operated in such a way that a contamination of waters or any other permanent change of their characteristics is not possible.

According to § 19l of WHG, the operator of such a facility is obliged to monitor his plant at all times at the place of installation, in order to check that the above mentioned requirements are met.

2. General Safety Notes

2.1 Notes concerning work safety

The **PREMAxx** electrical pump is designed and built according to the appropriate health and safety requirements of the relevant EC guidelines.

This product can nevertheless produce hazards if it is not used according to its purpose or without the necessary care (=> see chapter 1.1).

Please read therefore these operating instructions before operating the **PREMAxx** electrical pump and pass these on to any other users of the pump.

In any case, the local safety and accident prevention provisions apply for the operation of the **PREMAxx** electrical pump.

Please pay attention to the safety notes in these operating instructions.

2.2 Explanation of safety notes used

The safety notes used in these operating instructions distinguish between various levels of hazard. Various levels of hazard are marked in the instructions using the following signal words and icons:

lcon	Signal word	Consequences of not observing the safety provisions
€¥	Danger	Death or most severe injuries
Â	Warning	Possible death or severe injuries
	Caution	Possible slight or lesser injuries, or material damage

Table 2-1: Classification of safety notes according to type and severity of hazard

Furthermore, another note is used giving general tips for the handling of the product.

lcon	Signal word	Meaning
	Note	Background knowledge or tips for the correct handling of the product

Table 2-2: General note



2.3 Risks when using the PREMAxx electrical pump



Danger!

Combustible fuels can cause explosions

Do not smoke whilst handling the pump and fuels.



Danger!

Flying sparks can cause explosions

- > Do not operate the pump in areas with a risk of explosions.
- Use pump only to deliver diesel and fuel oil.



Danger!

Hoses with insufficient resistance can cause explosions

In order to deliver the fuel without risk, the delivery hose must have a certain resistance in order to avoid static charge. The original delivery hose from FMT has the necessary resistance.

- Use only FMT delivery hose.
- > When using delivery hoses by other manufacturers it must be ensured that the delivery hose has a resistance of > 10^{11} Ohm.



Caution!

Leaking fuels can cause environmental damage

Observe the provisions of the Water Household Law (WHG) and the Facilities Provisions of the (German) States (VawS).



3. Assembly



Figure 3-1: Overview of **PREMAxx** electrical pump with accessories

- 1 Pump housing
- 2 Hand lever
- 3 Barrel screw joint
- 4 Suction union
- 5 Hose clamp
- 6 Suction hose
- 7 Hose clamp
- 8 Suction pipe with filter
- 9 Standard nozzle
- 10 Trigger of standard nozzle

- 11 Thread of standard nozzle
- 12 On/off switch
- 13 Pressure union
- 14 Union nut of delivery hose
- 15 Delivery hose
- 16 External thread of delivery hose
- 17 Automatic nozzle
- 18 Lock lever
- 19 Trigger of automatic nozzle
- 20 Thread of automatic nozzle



Assembly of PREMAxx electrical pump

- 1. Push the transparent suction hose (6) onto the suction pipe with filter (8).
- 2. Push the hose clamp (7) over the suction hose (6) to the suction pipe (8) and tighten the hose clamp with a screwdriver.



Note

Before continuing with the next Step, please note:

If the pump is mounted on the fuel container, the suction hose with the suction pipe must be long enough to reach the fuel in the tank even if the fuel level is low.

- **3.** Cut the suction hose (6) to the desired length.
- 4. Push the hose clamp (5) over the suction hose (6).
- 5. Push the suction hose (6) onto the vacuum union (4) on the pump.
- **6.** Push the hose clamp (5) to the vacuum union (4) and tighten the hose clamp with a screwdriver.



Danger!

Hoses with insufficient resistance can cause explosions

In order for the fuel to be delivered without risk, the delivery hose must have a certain resistance in order to avoid static charge. The original delivery hose from FMT has the necessary resistance.

- Use only FMT delivery hose.
- When using delivery hoses by other manufacturers make sure that the delivery hose has a resistance of > 10¹¹ Ohm.



Caution!

Risk of product damage

- Mount and operate the pump only vertically on a fuel container.
- **7.** Firmly screw the pump into the aperture of the fuel tank using the barrel screw joint (3). The pump run-off can be brought into any position in the screwed-in state by twisting the pump housing (1).
- **8.** Screw the union nut (14) of the black delivery hose onto the pressure union (13) of the pump.
- **9.** Screw in the free end of the delivery hose with the external thread (16) into the thread of the nozzle (11 or 20 respectively).



Caution!

Risk of product damage

- The power source must have the correct voltage for the pump type.
- **10.** Connect the pump to a power source using the main plug.

The pump is ready for operation.



4. Operation

4.1 First operation and renewed operation

Caution!

Risk of product damage

Before switching on the pump for the first time, and in the event of a low fluid head: Manually prime with diesel or fuel oil, as a dry run of the pump can destroy the radial shaft gasket.

Prepare pump for operation

- 1. Hold the nozzle (9 or 17) in a collecting container.
- 2. Press and hold the nozzle trigger (10 or 19) or arrest it using the lock lever (18) (for automatic nozzle versions).
- Using the manual lever (2), prime the delivery fluid until the fluid emerges from the nozzle (9 or 17).
 The pump is ready to be switched on.

4.2 Normal operation



Danger!

Flying sparks can cause explosions

- > Do not operate the pump in areas with a risk of explosion.
- > Use pump only to deliver diesel or fuel oil.



Caution!

Risk of product and environmental damage

- Regularly check delivery hose and connection for damage in order to avoid leakage of diesel or fuel oil.
- Operate pump only under supervision.
- Do not let the pump deliver for more than 5 minutes against a closed nozzle to avoid exceeding the permitted temperature.
- > Avoid dry pump run.

Delivering fuel (for standard nozzle version)

- **1.** Switch on the pump (12).
- 2. Hold the nozzle (9) into the vehicle tank and press up the nozzle trigger (10), according to desired delivery quantity.
- **3.** To finish the delivery, release the nozzle trigger (10).
- **4.** Switch off the pump (12).
- 5. Place the nozzle (9) on the container.



Delivery fuel (for automatic nozzle version)



Note

With a locked nozzle trigger, the automatic nozzle switches off automatically, as soon as the tank or container being filled is full.

Furthermore, the automatic nozzle switches off when the nozzle is held vertically or falls down whilst the nozzle trigger is locked.

The automatic switch-off only functions when the nozzle exit containing the sensor jet is not contaminated and the through flow quantity is no less than 12 l/min.

If the tank is not to be filled to the top, the filling procedure can be stopped manually at any time (see action step 4 in the following section).

- **1.** Switch on the pump (12).
- 2. Hold the nozzle (17) into the vehicle tank.
- 3. Press up the nozzle trigger (19) according to the desired delivery quantity

- or -

lock the nozzle trigger using the lock lever (18).

4. To end the delivery, release the nozzle trigger (19)

- or -

briefly raise and release the locked nozzle trigger (19) to release the locking.

- **5.** Switch off the pump (12).
- 6. Place the nozzle (17) on the fuel container.

4.3 Emergency operation

In the event of power failure, you can manually pump very small quantities of diesel or fuel oil.

Delivering fuel in emergency operation

- 1. Hold the nozzle (9 or 17) in the container or vehicle tank.
- **2.** Press and hold the nozzle trigger (10 or 19), or lock it using the lock lever (18) (for automatic nozzle version).
- **3.** Pump the delivery fluid into the container of vehicle tank using the manual lever (2) on the pump.
- 4. After finishing the delivery, place the nozzle (9 or 17) on the fuel container.



5. Disassembly

Disassembling the pump

Condition: The pump is switched off.

- **1.** Disconnect the main plug.
- 2. Release the delivery hose (15) from the pressure union at the pump (13).
- 3. Unscrew the pump from the thread of the fuel container.
- **4.** Slowly remove the pump with the suction hose (6) and the suction pipe (8). Let all diesel or heating fuel run out completely from the suction hose and suction pipe.
- 5. Place the pump with hoses in an oil tray.
- 6. Let the emerging fuel oil or diesel run into the oil tray.

6. Maintenance

The **PREMAxx** electrical pump is in principle low maintenance and low service.

Due to the operator duty according to § 191 WHG, the following parts of the pump must be checked regularly to avoid environmental damage being caused by emerging fuel oil or diesel:

- Pump housing (1)
- Delivery hose (15)
- Nozzle (9 or 17)

In case of any damage the connecting cable has to be replaced or repaired by the manufacturer, by the manufacturer's service or by any other qualified person.

7. Repair / Service

The **PREMAxx** electrical pump has been developed and manufactured according to the highest quality standards.

If a problem should arise in spite of all quality measures, please contact our

FMT Swiss AG Tel +49 911 32 441-35 Fax +49 911 32 441-65 jens-holger.hindrichs@fmtag.ch



Declaration of EC Conformity 8.

We herewith declare that the appliance described below corresponds with the EC guidelines with regards to its design and type of construction as well as in the version as marketed by us. In the event of a change to the appliances that has not been agreed with us, this declaration becomes null and void.

Name of appliance:	PREMAxx 230 V AC single phase 24 V DC 12 V DC	
Appliance type:	electrical pump	
Year of construction:	see appliance sign	
Applicable EC guidelines:	EC low voltage guideline (73/23/EWG) EC guideline of electro magnetic compatibility (89/336/EWG) in the version of 93/31/EWG	
National standards applied:	DIN VDE 0843 Part 1	

31.12.2007

July Muthur Dipl.-Ing. Rudolf Schlenker

FMT Swiss AG

Fluid Management Technologies Swiss AG • Eschfeldstrasse 2 • CH-6312 Steinhausen Tel. +41 41 712 05 37 • Fax +41 41 720 26 21 • info@fmtag.ch • www.fmtag.ch

