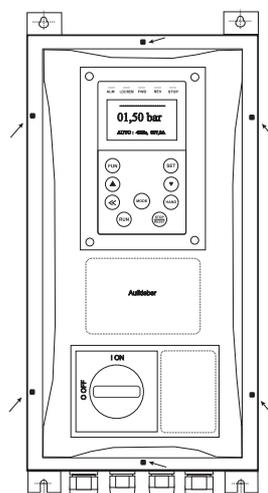
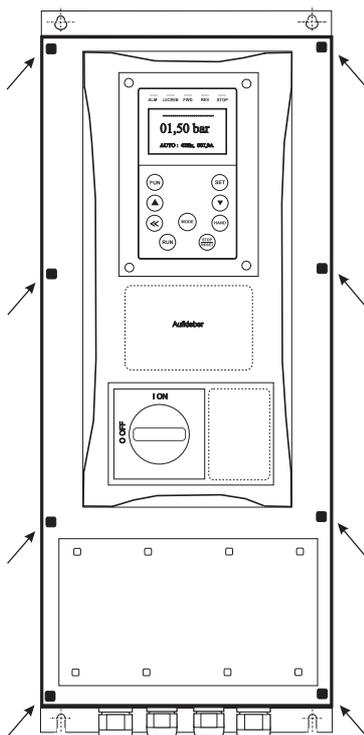
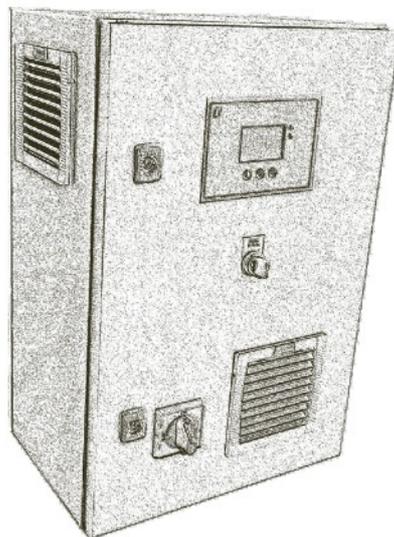


MARH Master Modul



Instruction manual: pressure /Fix frequency Pump controller :
Type: MARH-EMERGENCY MODULE S-No.: _____

System controller for pumps EMERGENCY MODULE Software Version 2.00 (xx.x) Stand 21.03.2023
with frequency inverter MARE

Execution: **pressure controller**
 level controller
 temperature controller
 vacuum controller

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1. Safety Precautions

Before installing and commissioning of the frequency converter controller, please read the product manual carefully and observe all warnings and safety instructions. Keep this manual is always easily accessible in the vicinity of the frequency converter controller.

Definition of Information



Warning!

Warning !

Disregarding the safety severe to fatal injuries can occur or considerable material damage!



Caution!

Caution!

Failure to follow these instructions severe to fatal injuries can occur or considerable material damage!



Notice!

Notice!

Failure to follow these instructions may result in malfunction of the system!

Warning!

The drive controller contains dangerous voltages and controls potentially dangerous rotating mechanical parts. The installation, commissioning and maintenance of this equipment should be performed only by qualified personnel who are familiar with the operation. The installation, commissioning and maintenance of this equipment should be performed only by qualified personnel who are familiar with the operation.

Do you have particular caution if the automatic restart is activated. To avoid injury by possibly unintentional restart of the drive controller after a power failure, turn off the automatic restart in case of doubt. When repairing or servicing this equipment, make sure that the system can not be switched on by others again! **The frequency controller have DC link capacitors, which carry hazardous voltage even after the mains supply is switched off. Therefore, always wait after switching off the mains voltage for at least 5 minutes before working on the machine or turn on the unit again.** It is important to ensure that no live parts are touched when power is applied or the intermediate circuit capacitors are charged.

Do not work on the wiring and check any signals when power is applied.

The Inverter - Regulator has a leakage current.

Ground the frequency controller on the connections provided.

The customer-supplied GFCI should be in the Inverter - Regulator **universal current sensitive / selective RCD (FI) - Circuit breaker type: B, B + be with rated current 300mA.**

Caution! An RCD (FI) - switch can not work sometimes in certain plants (eg long cable).

It is recommended that the frequency converter - controllers separately fused.

Make sure that the input voltage of the registered on the nameplate voltage.

Caution!

All frequency controllers are tested for dielectric strength and insulation resistance. Before the insulation measurement in the pump station, for example within the scope of the inspection frequency controller must be disconnected!

It is strongly recommended that all electrical equipment conforms to the National Electrical Codes and local regulations.

Factors such as high temperatures, high humidity as well as dust, dirt and corrosive gases. The installation should be a well-ventilated, not exposed to direct sunlight place.

Put them no mains voltage to the transducer terminals or to the control terminals. Enter the operating signals Hand/0/Auto via the selector switch on or about the driving of external contacts and not by switching on and off of a line or motor contactor.

It is strongly recommended that all electrical equipment conforms to the National Electrical Codes and local regulations. Only qualified personnel should perform installation, alignment and maintenance. The manufacturer reserves the right to alter the technical data in order to make improvements or update information.

As these provisions are handled differently, the user must observe the respectively valid for Him requirements. The manufacturer can not release you from the obligation to comply with the latest safety standards the user..

Notice!

The technical data and descriptions in this guide are correct to the best knowledge and belief. Technical improvements have been continuously carried out - that's why the manufacturer reserves the right, without prior notice to carry out such changes.

The manufacturer can not be held liable for errors in the manual.

Warranty is within Germany and within the

incorporated statutory warranty period and applies only to the product itself and not for any consequential loss or damage or costs associated with the occurrence of a Warranty claim arise at other plants or plant parts. The operator shall, in each case to ensure that a failure or defect in the product can not lead to further damage.

2. Panel Description EMERGENCY MODULE

Control panel with four -line LCD display for parameters and operating data:



- Stop engine / reset failure



- Start engine in auto mode



- Start engine in manual mode



- Change the position of the parameter



- Scroll through parameters, change values



- Set basic values



- Select / set the parameter

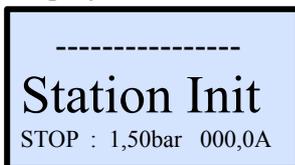


- Save values / clear memory

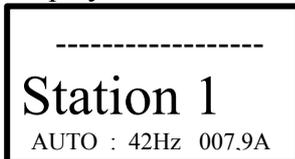
2.1 EMERGENCY OPERATION Display:

After the initialization is finished, the operating display appears:

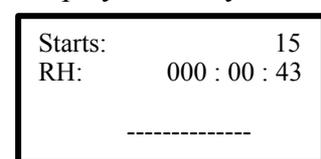
Display when switching on



Display Automatic / Hand Betrieb



Display memory



1. First setting emergency operation module

In der Betriebsart „MARH-Notbetrieb“ übernimmt der MARH- Regler die Pumpenregelung. Hierzu werden alle Frequenzumrichter über Modbus mit dem MARH- Regler verbunden. Am NOTBETRIEB - Display muss jeweils die Slave Nummer eingestellt werden. Er darf keine Lücke zwischen den Slave Nummern geben. Es darf keine Doppelbelegung der Slave Nummern geben.



Hinweis!

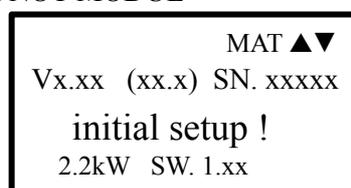
For clarity, MARH and EMERGENCY MODULE display are different colors.

First switch on the MARH and the EMERGENCY MODULE.

The MARH is factory set. Then parameterize the EMERGENCY MODULE.

3.1 Switching on and commissioning EMERGENCY MODULE

Turn on the system. start screen NOT-MODUL



Set the menu language on the respective EMERGENCY MODULE.

language :1 - 1=Deutsch / 2=English

```

----- initial setup -----
language : 1
Operating mode : 1
Slave : 1
Continue with "SET"
    
```

```

----- initial setup -----
language : 2
Operating mode : 1
Slave : 1
Continue with "SET"
    
```



Set the operating mode 3 "Multi" on the respective EMERGENCY MODULE.

Enter the multi-operation. A different operating mode is not possible except for multi-operation.

Operating mode :3 - 3 = Multi operation on EMERGENCY MODULE

```

----- initial setup -----
language : 2
Operating mode : 3
Multi : 1
Slave : 1
Continue with "SET"
    
```



Set the respective slave address. Attention! Only use each address once.

Slave Number :1 - 1 - 4 (MARH Address: 101- 106)

```

----- initial setup -----
language : 2
Operating mode : 3
Multi : 1
Slave : 1
Continue with "SET"
    
```

```

----- initial setup -----
language : 2
Operating mode : 3
Multi : 1
Slave : 2
Continue with "SET"
    
```



Now the slave (s) are waiting for the MARH.

Slave 1

Waiting for Master
Cancel by STOP

Slave 2

Waiting for Master
Cancel by STOP

Now go back to the MARH.

The MARH searches now for corresponding Slave's.

If all inverters are available as desired please confirm the system with "OK".

```

found inverters:
INV1 : OK, new
INV2 : OK, new

Init INV !
    
```

```

-----
Station Init
P1: 00Hz 000,0A
    
```

```

-----
Station Init
P2: 00Hz 000,0A
    
```

The parameters in MAR-MASTER and SLAVE are initialized.
MARH EMERGENCY MODULE

```

Init P1
Init P1

1,85bar
P1: 000Hz, 000,0A
P2: 000Hz, 000,0A
    
```

```

MAT ▲▼
Vx.xx (xx.) SN. xxxxx
Init ...
2.2kW SW. 1.xx
    
```

Display when the initialization is finished.

```

off P1
off P1

1,85bar
P1: 000Hz, 000,0A
P2: 000Hz, 000,0A
    
```

```

-----
Station off
P1: 00Hz 000,0A
    
```

```

-----
Station off
P2: 00Hz 000,0A
    
```

The system is now ready for operation.

4. Operating mode „MARH emergency mode“ (3) Attention ! Only in stop possible!

STOP RESET Press "Stop" button. **FUN** "FUN" button for 10 seconds. hold

▲ ▼ SET ▲ ▼ SET

----initial setup----	----initial setup----	----initial setup----	----initial setup----
language : 1	language : 1	language : 1	language : 1
Operating mode : 1	Operating mode : 1	Operating mode : 3	Operating mode : 3
Slave : 1	Slave : 1	Slave : 1	Slave : 1

FUN "FUN" button for 2 sec. And hold to exit the base.

- Set the menu language
Language :1 - 1 = D (German), 2 = E (English)
- Set the desired operating mode.
Operating mode :1 - 1 = Pump controller, 3 = Multi
- Enter the slave address for the multi-operation. Attention! Only use each address once
Slave Number :1 - 1 - 6 (MARH Address: 101- 106) 1 - 4 (MAR)

status memory

Starts:	15
RH:	000 : 00 : 43
-----	-----

▲ ▼

display information

-----	-----
Station off	Station 1
STOP P1: 00Hz 000,0A	AUTO P2: 00Hz 000,0A

▲ ▼



Emergency operation parameters

---Emergency parameters----	
Slave	: 1
emergency mode	: 1
distress frequency	: 40,0
distress setpoint	: 5,00
External on/ off	: 1

▲ ▼

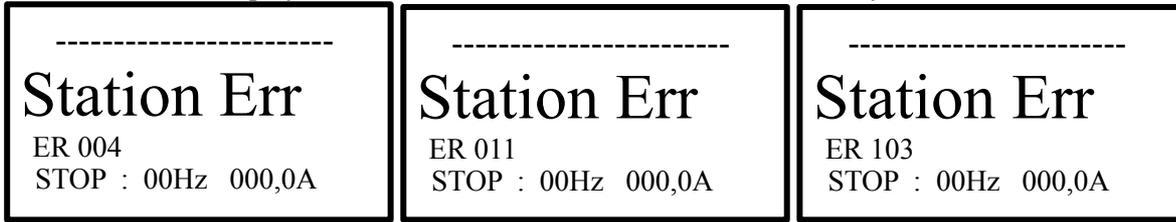
4.1 Emergency operation Set parameters

- Enter the slave address for the multi-operation. Attention! Only use each address once
Slave Number :1 - 1 - 6 (MARH Address: 101- 106) 1 - 4 (MAR)
- Enter the function for emergency operation. 1 = off, 2 = emergency frequency area code, 3 = emergency frequency with automatic start, 4 = emergency control with own sensor preselection, 5 = emergency control with own sensor with autostart.
emergency mode :1 - 1 - 3 (1-5)
- Enter the distress frequency of the pump. This function gives you the possibility the pump with distress frequency to operate if the main controller.
distress frequency :40Hz - 1Hz - 200Hz
- Enter the setpoint with which the system should operate as a stand-alone controller in emergency mode.
distress setpoint :05,00bar - 0,01bar - xx,xx bar
- Specify the function for the digital input 1. Attention ! Automatic restart.
external on / off :0 - 1 = closer / 0 = opener

5. Error Messages

5.1 Error messages Frequency EMERGENCY MODULE

If the MARH triggers a fault, it will be displayed on the SLAVE with "Fault".
The error itself is displayed on the MARH and stored in this error memory.

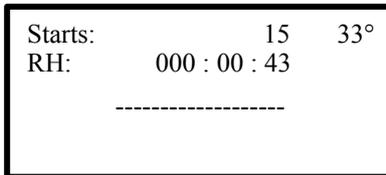


The displayed errors correspond to the error in the MARH controller.

END Menu

6. Clear Storage / start site

6.1 Clear memory / Starts

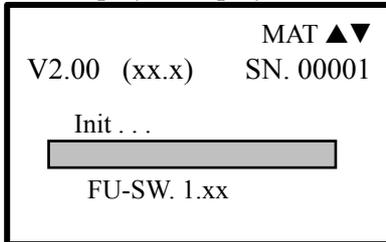


SET

"Set" button and hold for 60 sec. to clear the memory.

6.2 Start side

The control is initialised when the device is switched on. This process takes a little.
This display is displayed when "Power On". The serial number is then readable.



7. Status of the LED indicators on the EMERGENCY MODULE Display

	ALM	LOC/REM	FWD	REV	STOP
ALM	=	Alarm (fault)			permanent light
ALM	=	Alarm (Guardian)			flash light
LOC	=	Control mode (local)			permanent light
REM	=	Multi mode (remote)			flash light
FWD	=	Clockwise (forward)			permanent light
REV	=	Anti clockwise (reverse)			permanent light
FWD	=	forward (Standby)			flash light
REV	=	reverse (Standby)			flash light
STOP	=	Stop			permanent light
STOP	=	Standby / External off			flash light

