EN Manual

VME421H-DM

Voltage and frequency monitor for monitoring AC/DC systems for undervoltage, overvoltage, underfrequency and overfrequency
Software version VME421H-DM-1: D236 V2.2x
Software version VME421H-DM-2: D237 V2.2x

VME421H-DM_D00150_01_M_XXEN/02.2015

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Photos: Bender archives and bendersystembau archives.

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1. How to use this operating manual effectively

1.1 How to use this manual

This manual is intended for experts in electrical engineering and electronics!

In order to make it easier for you to find specific text passages or references in this manual and for reasons of comprehensibility, important information is emphasized by symbols. The meaning of these symbols is explained below:

*The signal word indicates that there is a **high risk** of danger that will result in **electrocution** or **serious injury** if not avoided.*

*This signal word indicates a **medium risk** of danger that can lead to **death** or **serious injury** if not avoided.*

*This signal word indicates a **low level risk** that can result in minor or **moderate injury** or **damage to property** if not avoided.*

*This symbol denotes information intended to assist the user to make **optimum use of the product**.*

1.2 Intended use

The voltage monitor VME421H-DM monitors AC/DC systems in the frequency range of DC/15…460 Hz for undervoltage, overvoltage, underfrequency or overfrequency. Device variant **-1** is suitable for the nominal voltage range U_n = 9.6…150 V, device variant -**2** for U_n = 70…300 V. The supply voltage is taken from the nominal voltage being monitored U_n.

1.3 Fast commissioning for U_n = 230 V, 50 Hz

If you are already familiar with voltage monitors, you can reduce the time for commissioning and connection using this brief description.

1. Check that device variant **-2** in the voltage range U_n = 70…300 V is used.
2. Check that the system being monitored is operated with a nominal voltage of U_n = 230 V and 50 Hz. This is the precondition for an automatic setting of the response values (Preset) after the first connection to the nominal voltage.
3. Make sure that the voltage monitor is in the delivery status (factory setting has not been changed). In case of doubt, restore the factory setting (page 32).

4. When the conditions 1, 2 and 3 are satisfied, you can connect the voltage monitor to the system to be monitored according to the wiring diagram (page 16). The following predefined response values will be set automatically:

VME421H-DM-2			
U_n, f_n	Preset operating range	Response value < U, < f	Response value > U, > f
230 V	196 V…253 V	196 V	253 V
50 Hz	47…53 Hz	49 Hz	51 Hz

5. The voltage currently measured between the terminals U1/+ and U2/- appears on the display. In addition, you can query the system frequency f using the Up and Down key when AC voltage is applied.

For detailed information about the preset function and other voltage and frequency ranges refer to page 12;
Page 34 provides a summary of all factory settings.
If you want to reset the voltage monitors to factory settings, refer to page 32.

2. Safety information

2.1 General safety information

In addition to this data sheet, the documentation of the device includes a sheet entitled "Important safety instructions for Bender products".

2.2 Work activities on electrical installations

- All work activities necessary for installation, commissioning or work activities during operation of electrical devices or systems are to be carried out by skilled persons.
- Observe the relevant regulations applying to work on electrical installations, in particular DIN EN 50110 or its subsequent regulation.

Unprofessional work activities on electrical installations may result in a threat of danger to life and limb!

- If the equipment is used outside the Federal Republic of Germany, the respective national standards and regulations are to be observed. The European standard EN 50110 is recommended to be used as a directive.

3. Function

3.1 Device features

- Undervoltage and overvoltage monitoring of AC/DC systems in the frequency range DC/15…460 Hz
  device variant **-1**: 9.6…150 V
  device variant **-2**: 70…300 V
- Preset function:
  Automatic response value setting for undervoltage and overvoltage, < U and > U as well as for underfrequency and overfrequency < f and > f
- Voltage and frequency monitoring with window discriminator function,
  < U and > U as well as < f and > f
- Indication of the system frequency *f*
- Start-up delay, response delay and delay on release
- Adjustable switching hysteresis for *U* and *f*
- r.m.s. value measurement AC + DC
- Measured value display via multi-functional LC display
- Alarm indication via LEDs (AL1, AL2)
- Password protection against unauthorised parameter changing
- The fault memory can be activated or deactivated. In the "con“ mode, all alarm parameters remain stored on failure of the nominal voltage being monitored ($U_n = U_s$)
- User-configurable analogue interface

3.2 Function

Once the nominal voltage is applied, the start-up delay "*t*" is activated. Measured values changing during this time do not influence the alarm LEDs.
The devices provide two separately adjustable response values (overvoltage/undervoltage). When the measured value exceeds (Alarm 1) or falls below the response value (Alarm 2), the alarm LEDs light up. When the measured value exceeds or falls below the release value (response value plus hysteresis), the alarm LEDs go out. When the fault memory is activated, the alarm LEDs remain in the alarm state until the reset button R is pressed.

3.2.1 Preset function

After connecting the system to be monitored for the first time, the response values for overvoltage and undervoltage (Alarm 1/2) and for overfrequency and underfrequency are automatically set one time to the following values:
Response value overvoltage (> U): 1.1 U_n
Response value undervoltage (< U): 0.85 U_n
Response value overfrequency (> f) at 16.7 Hz, 50 Hz, 60 Hz: f_n + 1 Hz
Response value overfrequency (> f) at 400 Hz: f_n + 1 Hz
Response value underfrequency (< f) at 16.7 Hz, 50 Hz, 60 Hz: f_n - 1 Hz
Response value underfrequency (< f) at 400 Hz: f_n - 1 Hz

Preset VME421H-DM-2				
U_n	**Preset operating range**	**Response value < U**	**Response value > U**	**Device variant**
230 V	196…253 V	196 V	253 V	**-2**
120 V	102…132 V	102 V	132 V	**-1, -2**
60 V	51…66 V	51 V	66 V	**-1**
24 V	20.4…26.4 V	20.4 V	26.4 V	**-1**

If the measured voltage or measured frequency is not within the preset operating range listed in the table, the message "AL not Set“ appears on the display. In this case, it is necessary to set the response values for Alarm 1 (AL1) and Alarm 2 (AL2) manually.

A detailed description of the process is given in the chapter "parameter setting“. After restoring the factory settings, the preset function is automatically active again.
During operation the preset function can be started manually via the menu SEt.

3.2.2 Automatic self test

The device automatically carries out a self test after connection to the system to be monitored and later every hour. During the self test internal functional faults are detected and will appear in form of an error code on the display.

3.2.3 Manual self test

After pressing the internal test button for > 1.5 s, a self test is performed by the device. During this test, functional faults will be determined and appear in form of an error code on the display.
While the test button "T" is pressed and held down, all device-related display elements appear on the display.

3.2.4 Functional faults

If an internal malfunction occurs, all three LEDs flash. An error code will appear on the display (E01…E32). In such a case please contact the Bender Service.

3.2.5 Fault memory

The fault memory can be activated, deactivated or can be set to continuous mode (con). If the fault memory is set to "con“ mode, the stored alarm parameters remain stored also in the event of failure of the nominal voltage ($U_n = U_S$) and also when the energy backup discharging time has elapsed.

3.2.6 Start-up delay *t*

After connection to the voltage U_n to be monitored, the alarm indication by the alarm LEDs is delayed by the preset time *t* (0…300 s). The alarm value will be outputted via the analogue interface without delay.

3.2.7 Password protection (on, OFF)

When password protection is enabled (on), settings can only be carried out after entering the password (0…999).
If you cannot operate your device because you cannot remember your password, please contact info@bender-service.de.

3.2.8 Factory setting FAC

After activating the factory setting, all settings previously changed are reset to delivery status. In addition, the preset function allows automatic adaptation of the response values in relation to the nominal voltage U_n.

3.2.9 Erasable history memory

The first alarm value to occur is saved in this memory. Subsequent alarms do not overwrite this "old" value. The memory can be cleared using the Clr key in the menu HiS.

3.2.10 Interface option M

This option provides an analogue interface with galvanic isolation, but does not provide an alarm relay. One of three output signals can be selected from the associated menu. Only use the output you have selected via the software:

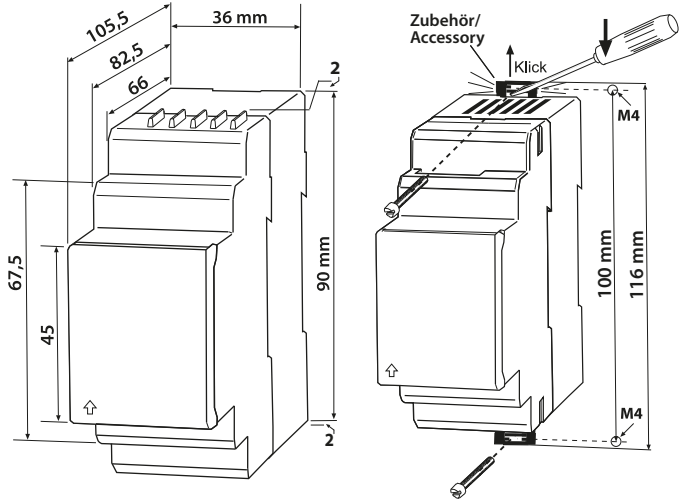
- DC 0…400 µA
  Current output for Bender measuring instruments of the 96… series
- DC 0/4…20 mA
  Standardised current output with selectable current ranges
- DC 0…10 V
  Standardised voltage signal

4. Installation and connection

DANGER

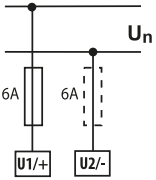
Ensure safe isolation from supply in the installation area. Observe the installation rules for live working.

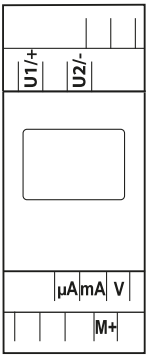
General dimension diagram and drawing for screw fixing

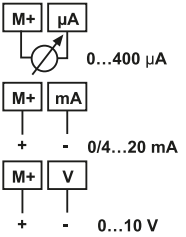


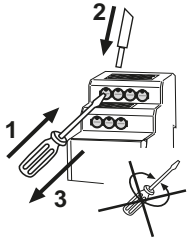
The front plate cover is easy to open at the lower part identified by an arrow.

1. **DIN rail mounting:**
   Snap the rear mounting clip of the device into place in such a way that a safe and tight fit is ensured.
   Screw fixing:
   Use a tool to move the rear mounting clips (a second mounting clip is required, see ordering information) to a position that it projects beyond the enclosure. Fix the device using two M4 screws.
2. Wiring
   Connect the device according the wiring diagram.







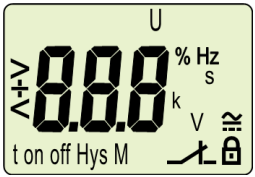


Terminal	Connections
U1/+, U2/-	Connection to the system being monitored
M+	(common) positive pole of the analogue interface
µA	Current output 0…400 µA
mA	Current output 0/4…20 mA
10 V	Voltage output 0…10 V

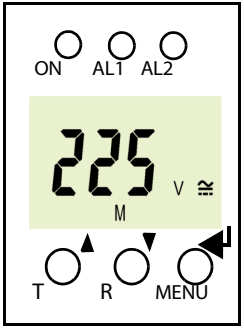
5. Operation and setting

5.1 Display elements in use

A detailed description of the meaning of the display elements is given in the table below.

Display elements in use	Element	Function
	**< U, > U**	Undervoltage (Alarm 2), Overvoltage (Alarm 1)
	U Hys, %	Response value hysteresis U as %
	< Hz, > Hz	Underfrequency (AL1 and AL2) Overfrequency (AL1 and AL2)
	Hz Hys	Frequency response value hysteresis as Hz
	t	Start-up delay *t*
	M	Fault memory active
		Password protection active

5.2 Function of the operating elements

Device front	Element	Function
	**ON**	Power On LED, green
	AL1 **AL2**	LED Alarm 1 lights (yellow): Response value > U reached LED Alarm 2 lights (yellow): Response value < U reached
	AL1 and AL2	Both LEDs light when the frequency response values > Hz or < Hz are reached.
	225 V **M**	Display in standard mode: U_n = 225 V; Fault memory active
	t ▲	Test button (> 1.5 s): To indicate the display elements in use, to start a self test; Up key (< 1.5 s): Menu items/values
	R, ▼	Reset button (> 1.5 s): To delete the fault memory; Down key (< 1.5 s): Menu items/values
	MENU, ↵	MENU key (> 1.5 s): To start the menu mode; Enter key (< 1.5 s): To confirm menu item, submenu item and value. Enter key (> 1.5 s): To go back to the next higher menu level.

5.3 Menu structure

All adjustable parameters are listed in the columns "menu item" and "adjustable parameters". A display-like representation is used to illustrate the parameters in the column menu item.

Menu	Sub menu	Menu item	Activation	Adjustable parameter
AL (response values)	→	< U	ON	Undervoltage (Alarm 2)
		> U	ON	Overvoltage (Alarm 1)
		U Hys	-	Hysteresis < U / > U
		< Hz	OFF	Underfrequency
		> Hz	OFF	Overfrequency
		Hz Hys	-	Hysteresis, frequency
out (output control)	→	M	ON	Fault memory (on, con, off)
		I, U	-	Selection of the current output or the voltage output: 0…20 mA / 4…20 mA / 0…400 µA / 0…10 V
	AnA	U 300 V	ON	100 % reference related to the selected voltage value
		> U AL	OFF	100 % reference related to the selected overvoltage response value
		100 Hz	OFF	100 % reference related to the selected frequency value

t (timing check)	T	-	Start-up delay
Set (device control)	🔒	OFF	Parameter setting via password
	FAC	-	Restore factory settings
	PrE	-	Manual preset
	SYS	-	Function blocked
InF		-	Display hard / software version
HiS	Clr	-	History memory for the first alarm value, erasable

5.4 Display in standard mode

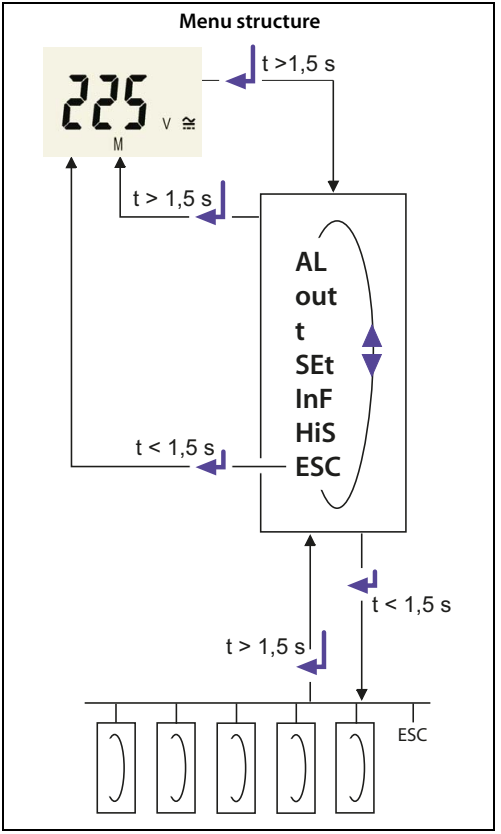
By default, the voltage applied across the terminals U1/+ and U2/- is indicated on the display. In order to change the standard display, confirm your choice with Enter.

In the standard mode, the currently measured voltage or frequency can be displayed using the Up and Down keys.

5.5 Display in menu mode

5.5.1 Parameter query and setting: overview

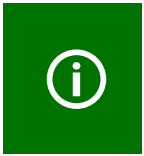
Menu item	Adjustable parameter
AL	Querying and setting response values: – Undervoltage: < U (AL2) – Overvoltage: > U (AL1) – Hysteresis of the voltage response values: Hys U – Underfrequency: < Hz (AL1 and AL2) – Overfrequency: > Hz (AL1 and AL2) – Hysteresis of the frequency response values: Hys Hz
out	Configuring the fault memory and the analogue interface: – Activate/deactivate the fault memory or select con mode – Select the analogue interface type: 0…400 µA, 0/4…20 mA, 0…10 V – Determine 100 % reference related to the analogue output signal (submenu AnA)
t	– Set start-up delay *t*
Set	Device control parameter setting: – Enable or disable password protection, change password – Restore factory setting – Start preset function PrE; – Service menu SyS blocked
InF	Query hard and software version
HiS	Query the first stored alarm value
ESC	Move to the next higher menu level (back)


Menu structure
225
V
M
t >1,5 s
t > 1,5 s
AL
out
t
SEt
InF
HiS
ESC
t < 1,5 s
t < 1,5 s
t > 1,5 s
ESC

Parameter setting

An example on how to change the alarm response value for overvoltage > U is given below. Proceed as follows:

1. Press the MENU/Enter key for more than 1.5 s. The flashing short symbol AL appears on the display.
2. Confirm with Enter. The symbol for undervoltage < U is flashing.
3. Press the Down key to select the parameter overvoltage > U. The parameter > U flashes.
4. Confirm with Enter. A flashing "on“ indicates that the response value > U is being activated.
5. Confirm the activation of the response value with Enter. The associated value in V appears on a flashing display.
6. Use the Up or Down key to set the appropriate response value. Confirm with Enter. > U flashes.
7. You can exit the menu by:
   - pressing the Enter key for more than 1.5 seconds to reach the next higher level or
   - selecting the menu item ESC and confirming with Enter to reach the next higher level.

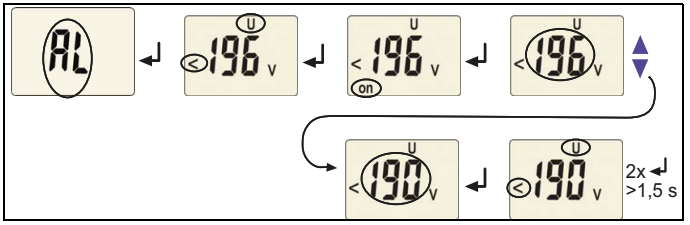


The currently active segments are flashing! In the figures below, the segments where device settings can be carried out are highlighted by an oval.
The menu mode can be reached by pressing the MENU key for more than 1.5 seconds.

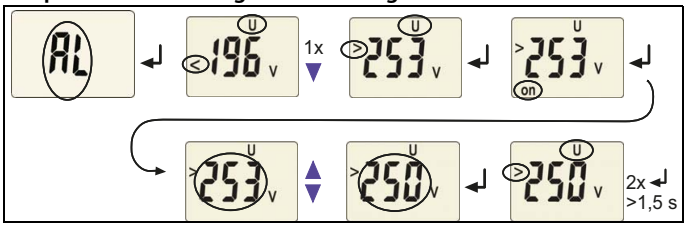
5.5.2 Response value setting for undervoltage, overvoltage and hysteresis

Use these settings to determine the voltage values above which an alarm is to be signalled.

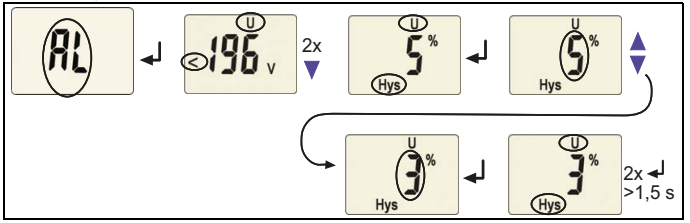
Response value setting for undervoltage < U



Response value setting for overvoltage > U

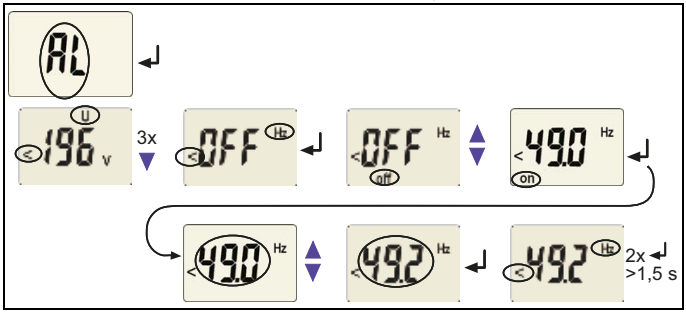


Set the hysteresis for the voltage response values

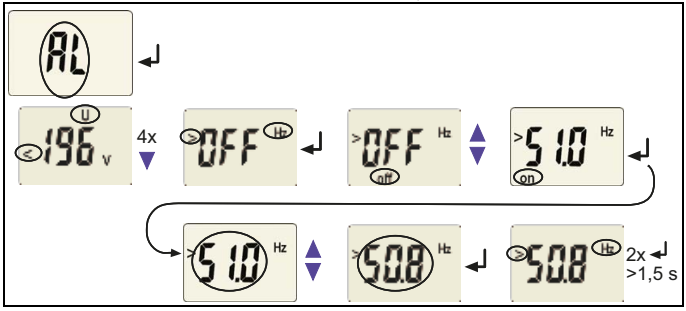


5.5.3 Response value setting for underfrequency, overfrequency and hysteresis

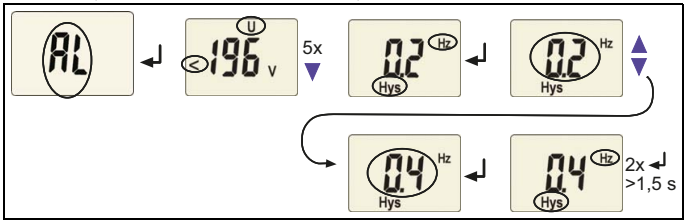
Set the response value for underfrequency < Hz



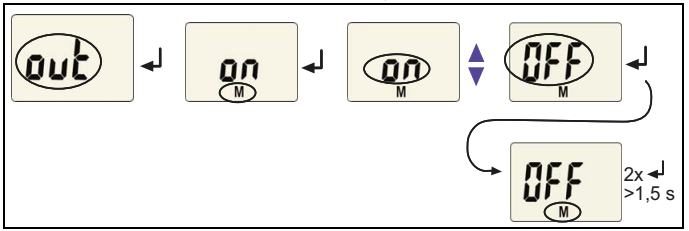
Set the response value for overfrequency > Hz



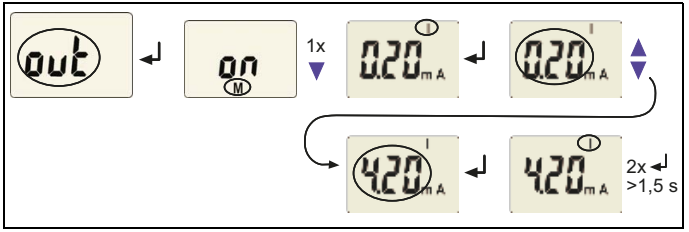
Set the hysteresis for the frequency response values



5.5.4 Deactivating the fault memory

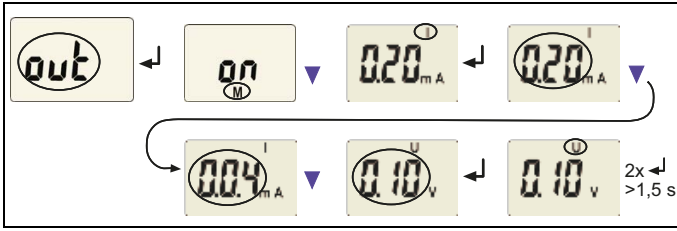


5.5.5 Selecting the output current range of the analogue interface



0.20 mA stands for 0…20 mA
4.20 mA stands for 4…20 mA

5.5.6 Selecting the voltage output of the analogue interface



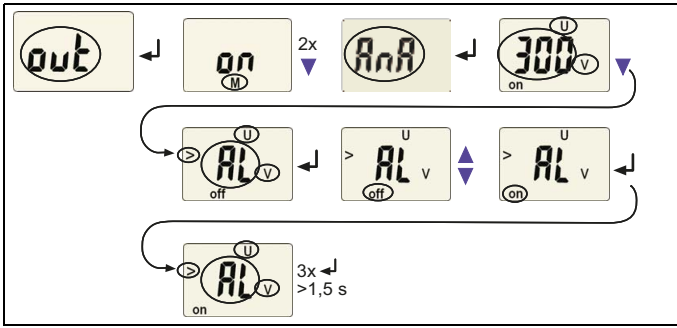
0.04 mA stands for 0…400 µA

5.5.7 Setting the 100% reference of the analogue interface

Set here to which reference value the 100 % value of the output signal is to be connected. You may select:

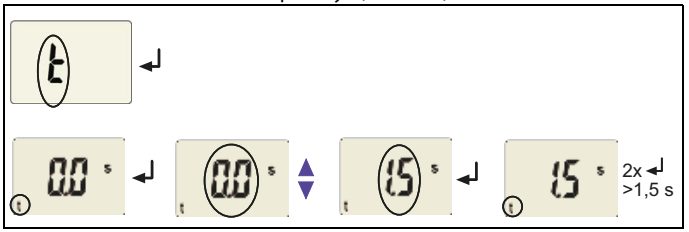
- Any adjustable voltage value in the range of 1…300 V (factory setting)
- Response value overvoltage (> U, AL)
- Any adjustable frequency value in the range of 10 Hz…2 kHz

The example below illustrates how to change the
100% reference from the selected reference value 300 V
to AL = Coupling to the response value overvoltage (> U, AL).



5.5.8 Setting the start-up delay *t*

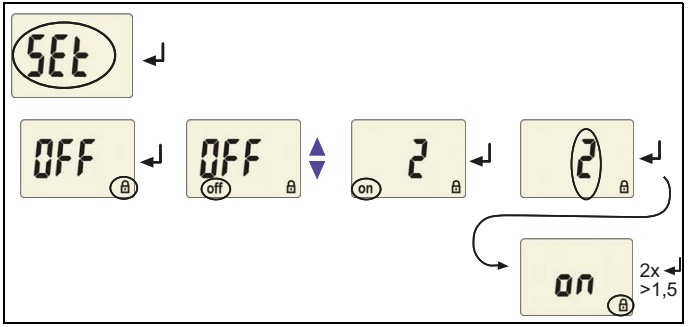
Use this menu to set the start-up delay *t* (0…300 s) for device start.



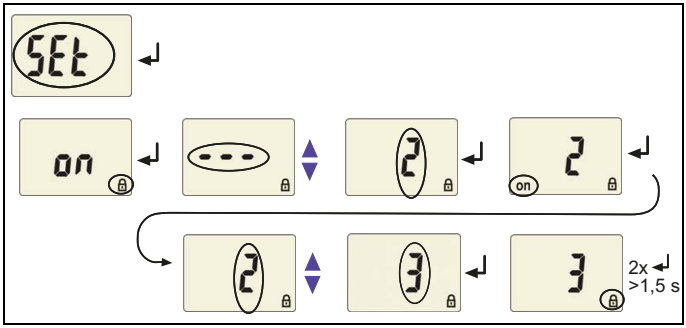
5.5.9 Factory setting and password protection

Use this menu to activate the password protection, to change the password or to deactivate the password protection. Furthermore, you can restore factory setting.

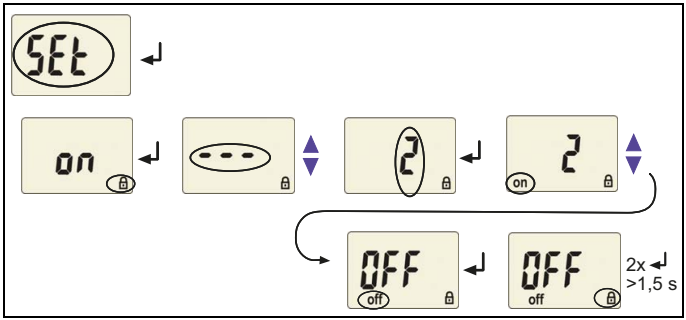
a) Activating the password protection



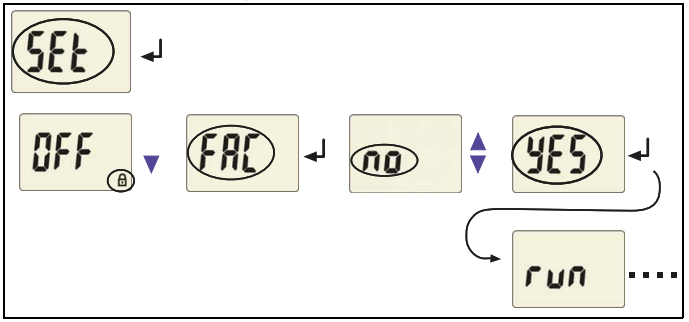
b) Changing the password



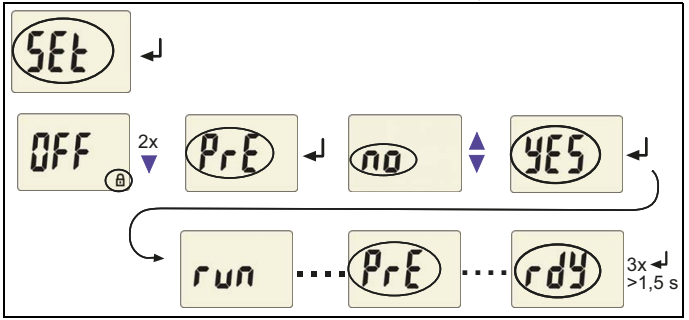
c) Disabling the password protection



5.5.10 Restoring factory settings



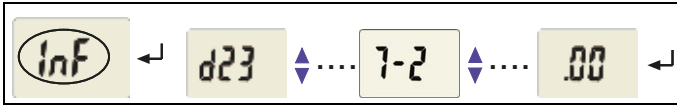
5.5.11 Activating the preset function manually



5.5.12 Device information query

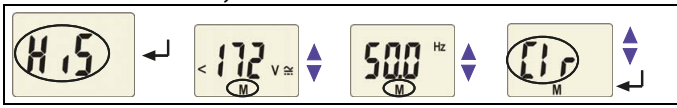
This function is used to query the hardware (d…) and software (1.xx) versions. After activating this function, data will be displayed as a scrolling text.

Once one pass is completed, you can select individual data sections using the Up/Down keys.



5.5.13 History memory query

The history memory can be selected via the menu HiS. Use the Up and Down keys to view the next display. If Clr is flashing, the history memory can be cleared with the Enter key.



5.6 Preset function/ factory setting

During the first start-up process the following response values
are automatically set related to U_n :
Response value: overvoltage (> U): 1.1 U_n
Response value: undervoltage (< U): 0.85 U_n

Hysteresis U:	*5 %*
Underfrequency < Hz	*OFF*
Overfrequency > Hz	*OFF*
Hysteresis frequency (Hys Hz):	*0.2 Hz*
Fault memory M:	*on*
Interface *type*	*0…20 mA*
100 % reference:	*> U = 300 V*
Start-up delay*:*	*t = 0 s*
Password:	*0, Off*

5.7 Commissioning

Prior to commissioning, check proper connection of the voltage monitor.

After connecting a brand-new VME421H-DM-2 to a standard system of U_n = 230 V / 50 Hz, the response values are automatically set by the internal preset function:
Overvoltage = *253 V (230 V + 10 %) (50 Hz + 1 Hz)*
Undervoltage = 196 V (230 V - 15 %) (50 Hz - 1 Hz)
Other operating ranges of the preset function are given in the technical data "response values" and in the description of the function.

6. Technical data VME421H-DM…

( )* = factory setting

Insulation coordination acc. to IEC 60664-1 / IEC 60664-3

Rated insulation voltage ..... 250 V
Rated impulse voltage/ Overvoltage Category ..... 4 kV/ III
pollution degree 3
Protective separation (reinforced insulation) between: ..... (U1/+, U2/-) - (M+, µA, mA, V)
Voltage test acc. to IEC 61010-1 ..... 2.21 kV

Supply voltage

VME421H-DM-1:
Supply voltage U_s ..... no (internal supply from U_n: 9,6 . . . 150 V))
VME421H-DM-2:
Supply voltage U_s ..... no (internal supply from U_n: 70 . . . 300 V))
Power consumption ..... ≤ 6 VA

Measuring circuit

Measuring range (r.m.s.) (VME421H-DM-**1**) ..... AC / DC 0 . . . 150 V
Measuring range (r.m.s.) (VME421H-DM-**2**) ..... AC / DC 0 . . . 300 V
Rated frequency f_n ..... DC, 15 . . . 460 Hz
Frequency range ..... 10 . . . 500 Hz

Response values

VME421H-DM-**1**:
Undervoltage < U (Alarm 2) ..... AC / DC 9.6 . . . 150 V
Overvoltage > U (Alarm 1) ..... AC / DC 9.6 . . . 150V
By preset function:
Undervoltage < U (0.85 U_n)* for U_n = 120 V/ 60 V/ 24 V ..... 102 V / 51 V / 20.4 V
Overvoltage > U (1.1 U_n)* for U_n = 120 V/ 60 V/ 24 V ..... 132 V / 66 V / 26.4 V
Resolution of setting *U* 9.6 . . . 49.9 V ..... 0.1 V
Resolution of setting *U* 50 . . . 150 V ..... 1 V

VME421H-DM-**2**:

Undervoltage < U (ALARM 2) ..... AC / DC 70…300 V
Overvoltage > U (ALARM 1) ..... AC / DC 70…300 V
Resolution of setting U 70…300 V ..... 1 V
By preset function:
Undervoltage < U (0.85 U_n)* for U_n = 230 V / 120 V ..... 196 V / 102 V
Overvoltage > U (1.1 U_n)* for U_n = 230 V / 120 V ..... 253 V / 132 V
VME421H…:
Relative uncertainty voltage, at 50/60 Hz ..... ±1.5 %, ±2 digit
Relative uncertainty voltage, at 15…460 Hz ..... ±3 %, ±2 digit
Hysteresis U ..... 1…40 % (5 %)*
Underfrequency < Hz ..... 10…500 Hz**
Overfrequency > Hz ..... 10…500 Hz**
Resolution of setting *f* 10.0…99.9 Hz ..... 0.1 Hz
Resolution of setting *f* 100…500 Hz ..... 1 Hz
By preset function :
Underfrequency for f_n = 16.7 Hz / 50 Hz / 60 Hz / 400 Hz ..... 15.7 Hz / 49 Hz / 59 Hz / 399 Hz
Overfrequency for f_n = 16.7 Hz / 50 Hz / 60 Hz / 400 Hz ..... 17.7 Hz / 51 Hz / 61 Hz / 401 Hz
Hysteresis frequency Hys Hz ..... 0.1…2 Hz (0.2 Hz)*
Relative uncertainty frequency, at 15 Hz…460 Hz ..... ±0,2 %, ±1 digit

Specified time

Start-up delay ..... 0…300 s (0 s)*
Resolution of setting *t* (0…10 s) ..... 0.1 s
Resolution of setting *t* (10…99 s) ..... 1 s
Resolution of setting *t* (100…300 s) ..... 10 s
Operating time, voltage t_{ae} ..... DC/AC 16.7 Hz: ≤130 ms, AC 42…460 Hz: ≤ 70 ms
Operating time, frequency t_{ae} ..... AC 15…460 Hz: ≤ 310 ms
Response time t_{an} ..... $t_{an} = t_{ae}$
Discharging time energy backup on power failure (VME421H-DM-**1**) ..... on request
Discharging time energy backup on power failure (VME421H-DM-**2**) ..... ≥ 2 s at DC 70 V
..... ≥ 4 s at DC 80 V / AC 70 V
Charging time energy backup (VME421H-DM-**1**) ..... on request
Charging time energy backup (VME421H-DM-**2**) ..... ≤ 120 s
Recovery time t_b ..... 300 ms

Displays, memory

Display	LC display, multi-functional, not illuminated
Display range, measuring value (VME421H-DM-**1**)	AC/DC 0 . . . 150 V
Display range, measuring value (VME421H-DM-**2**)	AC/DC 0 . . . 300 V
Operating uncertainty voltage, at 50/60 Hz	±1.5 %, ±2 digit
Operating uncertainty voltage, at 15 . . . 460 Hz	±3 %, ±2 digits
Operating uncertainty frequency, at15 . . . 460 Hz	±0.2 %, ±1 digit
History memory (HiS) for the first alarm value	data record measured values
Password	off / 0 . . . 999 (off)*
Fault memory (M)	on / off / con (on)*

Analog output

Voltage output:	
Open circuit voltage (terminals open)	≤ DC 20 V
Voltage output	DC 0 . . . 10 V
Burden	≥ 1 kΩ
Current outputs:	
Short-circuit current	≤ 30 mA, short-circuit proof
Current output	DC 0/4 . . . 20 mA
Burden	≤ 500 Ω
Current output	DC 0 . . . 400 µA
Burden	≤ 12.5 kΩ

Environment/EMC

EMC	IEC 61326
Operating temperature	-25 °C . . . +55 °C
Classification of climatic conditions acc. to IEC 60721:	
Stationary use (IEC 60721-3-3)	3K5 (except condensation and formation of ice)
Transportation (IEC 60721-3-2)	2K3 (except condensation and formation of ice)
Long-time storage (IEC 60721-3-1)	1K4 (except condensation and formation of ice)
Classification of mechanical conditions acc. to IEC 60721:	
Stationary use (IEC 60721-3-3)	3M4
Transport (IEC 60721-3-2)	2M2
Long-time storage (IEC 60721-3-1)	1M3

Connection

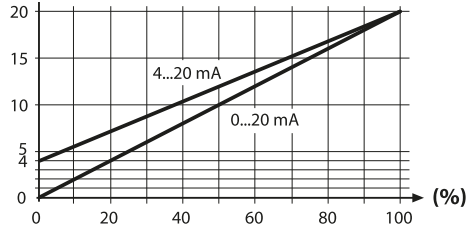
Connection ..... **screw-type terminals**
Connection properties:
rigid / flexible / conductor sizes ..... 0.2…4 / 0.2…2.5 mm² / AWG 24…12
Multi-conductor connection (2 conductors with the same cross section):
rigid/ flexible ..... 0.2…1.5 mm² / 0.2…1.5 mm²
Stripping length ..... 8…9 mm
Tightening torque ..... 0.5…0.6 Nm
Connection ..... **push-wire terminals**
Connection properties:
rigid / flexible ..... 0.2…2.5 mm² (AWG 24…14)
Flexible with ferrules ..... 0.2…1.5 mm² (AWG 24…16)
Stripping length ..... 10 mm
Opening force ..... 50 N
Test opening, diameter ..... 2.1 mm

General data

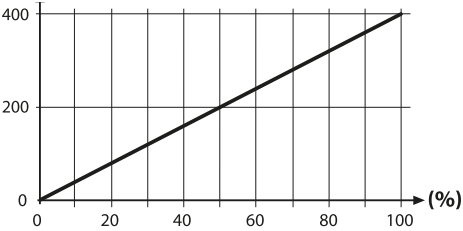
Operating mode ..... continuous operation
Mounting ..... any position
Degree of protection, internal components (IEC 60529) IP30
Degree of protection, terminals (IEC 60529) IP20
Enclosure material ..... polycarbonate
Flammability class UL94 V-0
DIN rail mounting acc. to ..... IEC 60715
Screw fixing ..... 2 x M4 with mounting clip
Software version VME421H-DM-**1** ..... on request
Software version VME421H-DM-**2** D237 V2.2x
Weight ..... ≤ 240 g
( )* = factory setting
** = The technical data applies to the operating range of the rated frequency (15…460 Hz) only.

6.1 Current and voltage curves of the analogue interface

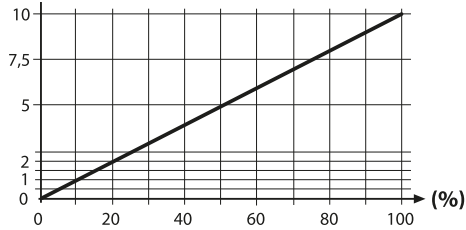
Current output 0/4…20 mA



Current output 0…400 µA



Current output 0…10 V



6.2 Standards, approvals and certifications


6.3 Ordering information

Device type	Nominal voltage U_n*	Art. No.
VME421H-DM-1	AC/DC 9.6…150 V 15…460 Hz	on request
VME421H-DM-2	AC/DC 70…300 V 15…460 Hz	B 9301 0010
VME421H-DM-2 (push-wire terminal)	AC/DC 70…300 V 15…460 Hz	B 7301 0010
*Absolute values of the voltage range		
Mounting clip for screw fixing (1 piece per device, accessories)		B 9806 0008

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