NA003-M64

Part No.: 2700100C

Quick Start Guide

doc no.: 090750C

www.tele-online.com

Danger! Never carry out work on live parts!
Danger of fatal injury!
The product must not be used in case of obvious damage!
To be installed by an authorized person only!

- The full operation manual is available at:
  https://www.tele-online.com/resources/data-sheets/en_na003-m64.pdf
- This Quick Start Guide does not replace the manual and the owner should read in conjunction with the whole Manual.
- The safety instructions are to be observed

Intended use:

The TELE NA003-M64 is a multinational grid and system protection unit, that protects energy generation plants (like combined heat and power plants, wind generators, waterpower plants, photovoltaic plants).
In case of power failures or net anomalies, power gererating plants have to be disconnected immediately from the mains supply to avoid unintentional feeding to the grid. On the one hand continuing grid feeding could endanger maintenance staffs, on the other hand connected devices could be exposed to inadmissible voltages and/or frequencies.

In case the grid operator requires thresholds and settings that are not conforming with the local standards, it is possible to set thresholds outside the normative defined range!
Outside these range the device is not in accordance with the standards anymore and the corresponding certificate loses validity! This state is indicated as „ncnf" [none conformity] on the display.
Settings outside the conformity range are therefore in responsibility of the operator respectively the acceptance authority!

Safety advice:

The device was developed, produced and tested in accordance to the latest industry standards. Nevertheless improper handling or use can endanger humans and machines.

Please use the device only in accordance with the installation and operating instructions. Check for secure assembly and good condition. Moreover, the rules and regulations on accident prevention applicable to the place of use must be strictly followed.

- Eliminate all faults immediately which may endanger safety!
- Do not make any unauthorised changes and only use replacement parts and optional accessories purchased from or recommended by TELE!
- In case of obvious damage the device must be checked and replaced if necessary!
- Country specific regulations have to be considered in any case!
- If required by national standards, the NA003 has to be protected against unauthorized changes by password and/or sealing!

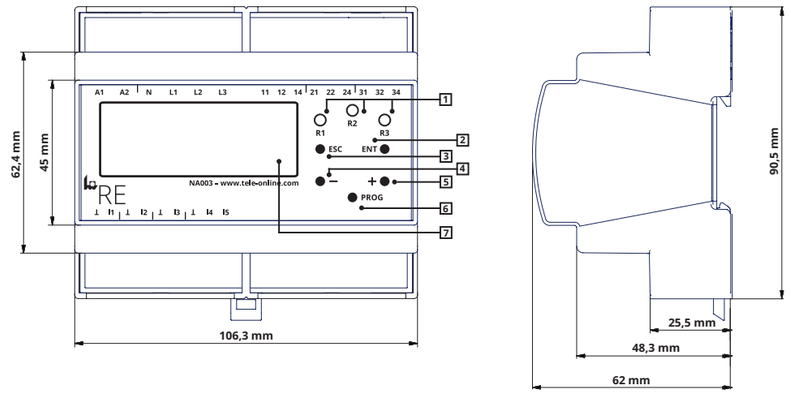
Mounting on DIN rail according to EN 60715:

Snap the rear mounting clip of the device into place in such a way that a safe and tight fit is ensured.

Available configurations/Local standards:

CEI 0-21:2019, VDE 0126-1-1:2013, VDE 0124-100:2013, VDE 4105:2018 <50kW, VDE 4105:2018 >50kW, VDE 4105:2018 Umr, G59/3/3:2015 LV, G99/1/3:2018 LV, G59/3/3:2015 MV, G99/1/3:2018 HV, G83/2:2012, G98/1/2:2018, C10-11:2012 LV, C10-11:2019 LV-IP, C10-11:2019 LV-ASS, C10-11:2012 MV, C10-11:2019 HV-IP, C10-11:2019 HV-ASS, TR3 Rev23:2013, VDE 4110:2018 TR3-25, OVE E 8001/8101:2014, OVE TOR R25 NS SYNC, OVE TOR R25 NS ASYNC, OVE TOR R25 MS SYNC, OVE TOR R25 MS ASYNC, OOE TOR R25 NS SYNC, OOE TOR R25 NS ASYNC, OOE TOR R25 MS SYNC, OOE TOR R25 MS ASYNC, EN50438:2013, EN50438:2013 DK, NRS 097-2-1:2017, AS/NZS 4777.2:2015, OPEN SETUP

Dimensions:



Controls elements:

Legend	Marking	Type	Function
1	R1, R2, R3	LED (yellow)	Status indication output relays
2	ENT	Pushbutton	ENTER, Input confirmation, menu level forward
3	ESC	Pushbutton	ESCAPE, Input rejection, menu level back, test/reset
4	-	Pushbutton	Change parameters, menu navigation
5	+	Pushbutton	Change parameters, menu navigation
6	PROG	Pushbutton (sealable)	PROGRAM, enter program mode
7		LCD-Display 4x20 characters	Display

Terminals:

A1, A2	Supply	DC: 24V AC: 110 - 230V @ f: 48-63 Hz A1: L (+) A2: N (-)
L1, L2, L3, N	Measuring input	U_N: 3x400V AC
11, 12, 14	Relay channel A (CO contact) Status indication via yellow LED R1	Isolated changeover contact 11: Common 12: Normally closed contact 14: Normally open contact
21, 22, 24	Relay channel B (CO contact) Status indication via yellow LED R2	Isolated changeover contact 21: Common 22: Normally closed contact 24: Normally open contact
31, 32, 34	Relay channel D (CO contact) Status indication via yellow LED R3	Isolated changeover contact 31: Common 32: Normally closed contact 34: Normally open contact
I1, ⊥	Digital input 1 (Feedback contact contactor A)	Contact input (24V/5mA), configurable Input active: I1 connected to ⊥
I2, ⊥	Digital input 2 (Feedback contact contactor B)	Contact input (24V/5mA), configurable Input active: I2 connected to ⊥ Does not apply to national standards without functional safety!
I3, ⊥	Digital input 3 (Remote disconnection)	Contact input (24V/5mA), configurable Input active: NO->I3 to ⊥ (std); NC->I3 open
I4, I5, ⊥	Digital inputs 4 und 5 (Parameter switchover)	Applies to CEI 0-21 Contact input (24V/5mA) Input active: I4 or I5 connected to ⊥

Technical data:

Supply circuit

Supply voltage:	DC: 24V	AC: 110 - 230V
Supply voltage tolerance:	DC: ± 10%	AC: ± 30%
Nominal consumption:	max. 1,25W / 4VA @ 230V AC	
Rated frequency:	50 / 60Hz	
Tolerance of rated frequency:	48 - 63Hz	
Rated surge voltage:	6 kV	
Internal protection:	250V / 500mA slow blow (soldered)	

In order to ensure the proper function during power failures, an external UPS has to be used.

Measuring circuit

Measuring input:	3 x 400V AC
Input impedance:	1MΩ
Measurand:	line to line voltage, line to neutral voltage, 10 minutes average voltage, frequency, rate of change of frequency (RoCoF), phase shift (PShift)

Measuring ranges

Line to line voltage:	0 - 560VAC
Line to neutral voltage:	0 - 325VAC
Frequency:	40 - 65Hz
RoCoF:	100mHz/s ... 2.000mHz/s
Pshift:	1 - 15°
Overload capacity:	Permanent 1,4 x U_{Nom} Pulse 1,6 x U_{Nom} (1 second)
Overvoltage category:	III
Rated surge voltage:	4 kV

Digital inputs

Type of contact:	Isolated, max. wire length <30m, control wiring standards to be taken in account. The ⊥ are not connectied to each other.
Min. switching voltage/ switching current:	24V DC / 5mA

Output circuit

Number of contacts:	3 changeover contacts
Contact material:	AgNi
Rated current:	5A / 250V AC
Electrical endurance:	100 x 10^3 switching cycles (AC-1)
Mechanical endurance:	15 x 10^6 switching cycles
Continous current value:	5A
Short time value (1s):	5A
Withstanding voltage across open contacts:	Relay contacts: 1000V_{rms} Terminals: 450V_{rms}
Overvoltage category:	III
Rated surge voltage:	4 kV
Protection:	5A fast blow

Accuracy

Voltage monitoring:	
Base accuracy:	< 0,5% @ +25°C
Temperature influence:	< 0,01% / °C
Resolution:	10mV
Frequency monitoring:	
Base accuracy:	< 0,01Hz @ +25°C
Temperature influence:	< 0,0002Hz / °C
Resolution:	1mHz

Isolation data

Rated insulation voltage:	400V
Supply circuit / Measuring circuit:	protective insulation
Supply circuit / Output circuit:	protective insulation
Supply circuit / Digital inputs:	protective insulation
Output circuit / Measuring circuit:	basic insulation
Output circuit / Digital inputs:	basic insulation

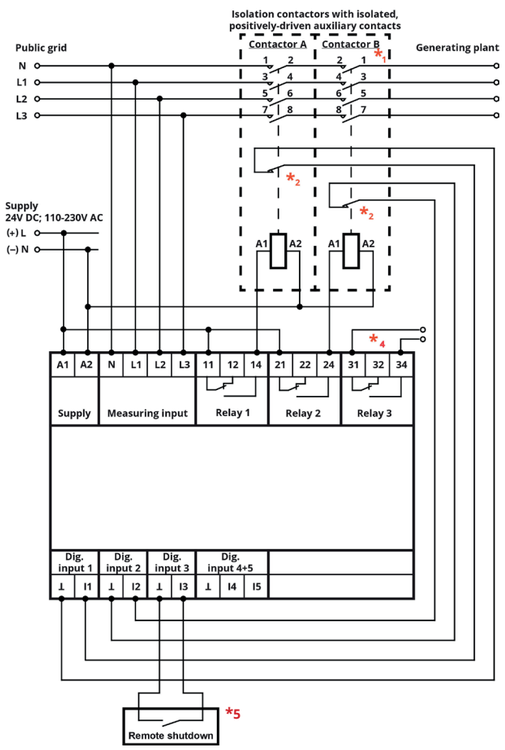
Environmental conditions

Ambient temperature operation:	-25 ... +55°C
Ambient temperature storage:	-40 ... +70°C
Visibility temperature display:	-15 ... +55°C
Relative humidity:	5 ... 95% (non-condensing)
Pollution degree:	2
Weight:	300g

Electrical connection

Wire size:	max. 2,5mm²
Stripping length:	max. 8mm
Electrical strength:	max. 450V/16A (digital inputs; relay outputs) max. 750V/16A (measuring inputs)
Torque:	max. 0,5Nm
Screw:	M3, slot screwdriver 0,6 x 3,5mm
Protection class	Terminals: IP20 Housing: IP20
Seal wire	max. diameter <=1,25mm

Connection diagram 1:

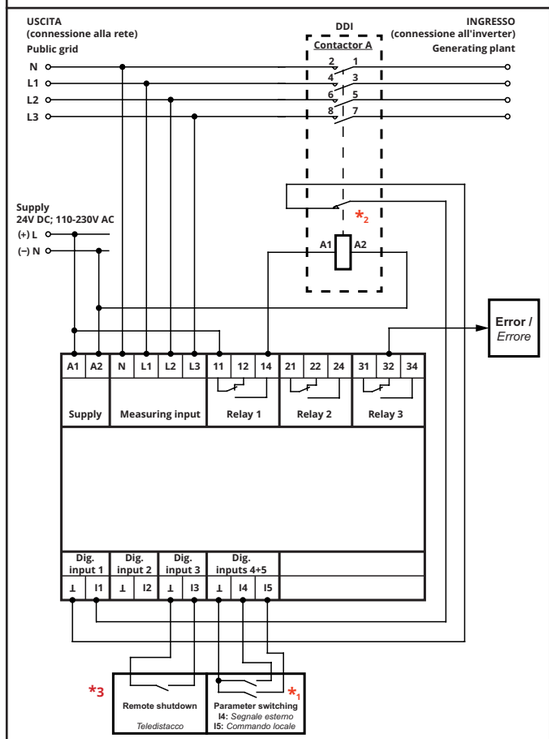


Applies to:

- VDE 0126-1-1:2013
- VDE 0124-100:2013
- *1,*4 VDE 4105:2018 <50kW
  VDE 4105:2018 >50kW,
- *4 VDE 4105:2018 Umr,
- *1 VDE 4110:2018 TR3-25
- *1 G99/1/3:2018 LV, G99/1/3:2018 HV, G98/1/2:2018, G59/3/3:2015 LV, G59/3/3:2015 MV, G83/2:2012
- *1, *4 C10-11:2019 LV-IP, C10-11:2019 LV-ASS, C10-11:2019 HV-IP, C10-11:2019 HV-ASS
- *1 C10-11:2012 LV, C10-11:2012 MV
- TR3 Rev23:2013
- OVE TOR R25 NS SYNC, OVE TOR R25 NS ASYNC, OVE TOR R25 MS SYNC, OVE TOR R25 MS ASYNC, OOE TOR R25 NS SYNC, OOE TOR R25 NS ASYNC, OOE TOR R25 MS SYNC, OOE TOR R25 MS ASYNC, OVE E 8001/8101:2014
- *3 EN50438:2013, EN50438:2013 DK
- NRS 097-2-1:2017
- AS/NZS 4777.2:2015
- OPEN SETUP

***1 ...** Contactor B is not necessary for applications requiring no functional safety
***2 ...** Auxiliary contact configurable as "n/o", "n/c" or "disabled"
***3 ...** 1- or 2-channel connection possible and can be configured
***4 ...** Error energy gerneration plants conforming
VDE-AR-N 4105:2018-11 (Pn ≤ 50 kW)
VDE-AR-N 4105:2018-11 (Pn > 50 kW)
VDE-AR-N 4105:2018-11 (Inverter)
C10-11 LV:2019
C10-11 HV:2019
***5 ...** Digital input configurable as "n/o", "n/c", „disable", (default ist n/o)

Connection diagram 2:



Applies to:

- CEI 0-21:2019

***1 ...** Parameter switching:

- **definitive mode (Operational mode 0):**

I4 inactive / contact opened:
overfrequency 1, underfrequency 1
I4 active / contact closed:
overfrequency 2, underfrequency 2

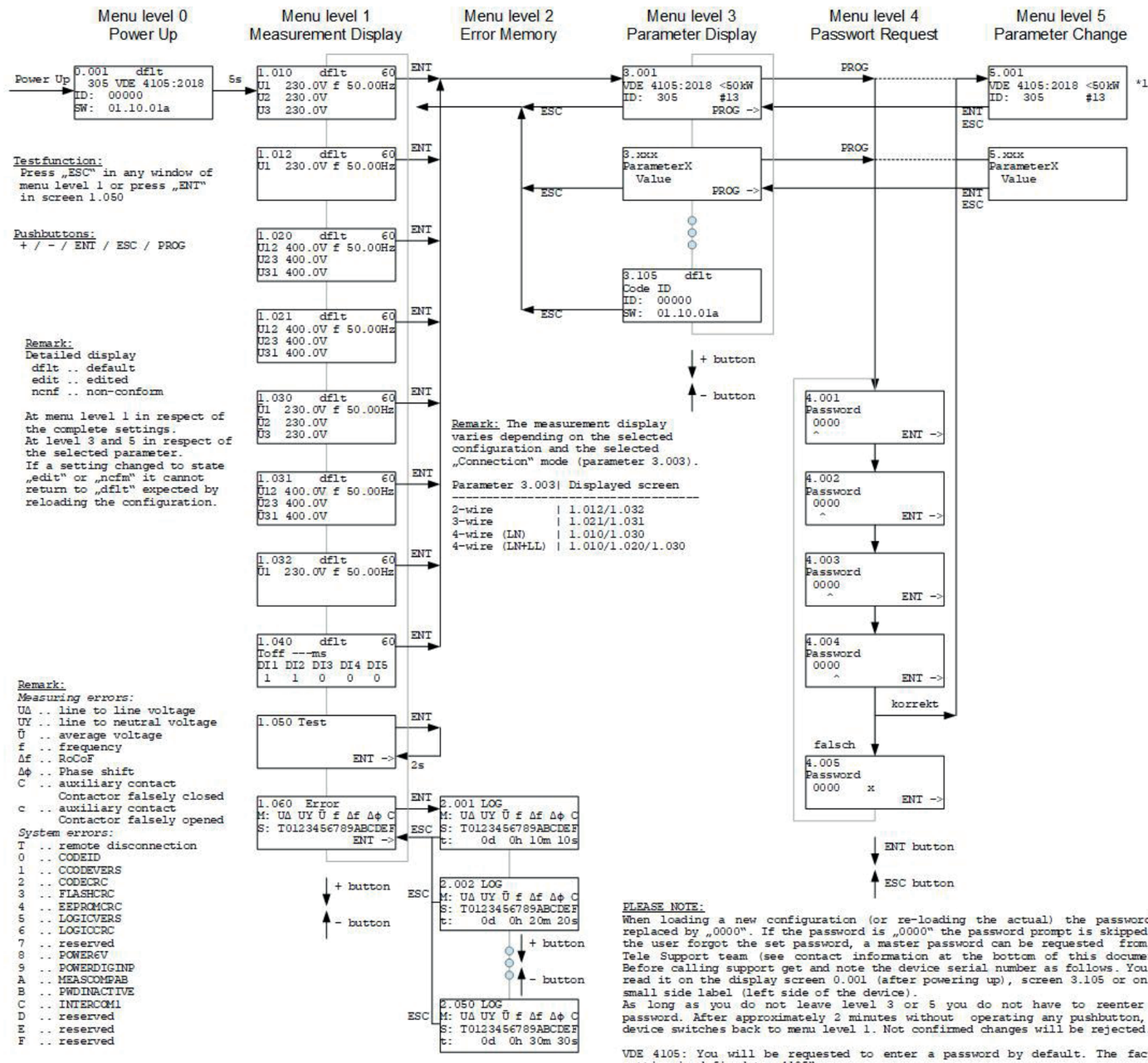
- **transitory mode (Operational mode 1):**

I5 active / contact closed:
overfrequency 2, underfrequency 2
I5 inactive / contact open:
overfrequency 3, underfrequency 3

***2 ...** Auxiliary contact configurable as "n/o", "n/c" or „disabled"

***3 ...** Digital input configurable as "n/o", "n/c", „disabled", (default is n/o)

Menu structure:



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Subject to alterations and errors.
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