

## SK TI4-TU-NET

Part number: 275 280 100

Connection unit

### NOTICE

### Validity of this document

This document is only valid in combination with the operating instructions of the relevant frequency inverter and under strict compliance with the safety and warning instructions which they contain. Safe commissioning of this module and the frequency inverter depends on the availability of this information.

### Scope of delivery

|     |                        |                     |
|-----|------------------------|---------------------|
| 1 x | Connection unit        | SK TI4-TU-NET       |
| 1 x | Gasket                 | 2 mm, self-adhesive |
| 2 x | Lead through grommet   | 22 mm x 9.5 mm      |
| 4 x | Hexagonal socket screw | M4 x 20             |



### Field of use

The connection unit forms the basis for the options with integrated 24 V power supply of model SK TU4-. The terminal strip is divided into two potential levels. The connection unit can be mounted on, or in the immediate vicinity of an electronic control technology frequency inverter.

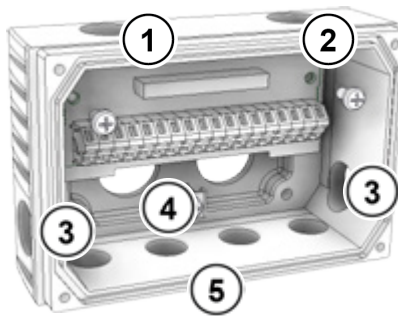
### Technical data

|                      |                          |
|----------------------|--------------------------|
| Temperature range    | -25 °C ... 50 °C         |
| Temperature class    | Class 3K3                |
| Protection class     | IP55                     |
| Vibration resistance | 3M7                      |
| Dimensions [mm]      | H x W x D: 95 x 136 x 55 |
| Current rating       | Module 480 mA            |
| Reference signal AIN | 10 V ± 0.2 V, ≤ 5 mA     |

|                                 |   |
|---------------------------------|---|
| Cable cross section             | AWG 26-14   |
| rigid                           | 0.14 - 2.5 mm <sup>2</sup>                        |
| flexible with wire end ferrules | 0.14 - 1.5 mm <sup>2</sup>                        |
| Analogue input                  | 0 – 10 V,<br>Accuracy 0.2 V,<br>Resolution 8 bits |

|  |                      |       |      |    |
|--|----------------------|-------|------|----|
| <b>Technical Information / Datasheet</b> | <b>SK TI4-TU-NET</b> |       |      |    |
| Connection unit                          | TI 275280100         | V 1.2 | 5315 | EN |

### Features

|    |   |  |
|----|---|--|
| 1. | No function, M20 x 1,5  |  |
| 2. | No function, M20 x 1,5  |  |
| 3. | Cable entry M20 x 1.5 (1 on left, 1 on right, option location 5L and 5R):<br>e.g. For the connection of control and signal lines.           |  |
| 4. | Cable entry M25 x 1.5 (2 pcs.):<br>Leadthrough for wiring between optional assembly and device (frequency inverter) with direct attachment. |  |
| 5. | Cable entry M16x1.5 (4 pcs., option location 1 to 4):<br>e.g. for the connection of control and signal lines.                               |  |

### Information

### M12 connector

NORD can supply prefabricated M12 connection expansions for manufacturing plug-in connections.

These can be screwed directly into the M16 cable lead-ins. The two existing side cable lead-ins (M20) can be used if a suitable reducer is used ([TI 275274511](#)).

### Installation

|                       |  |
|-----------------------|--|
| Installation location | To the left or right of the device.<br>Alternatively: near by the device by using the wall mounting kit SK TIE4-WMK-TU ( <a href="#">TI 275274002</a> ). |
| Mounting              | Using screw connection (4 x hexagon socket M4 x 20)  |

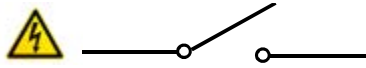
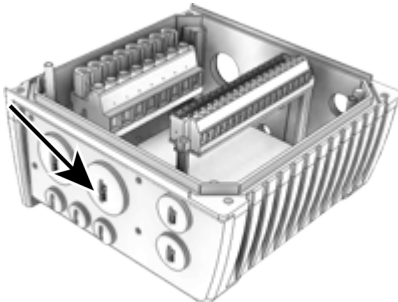
### ATTENTION

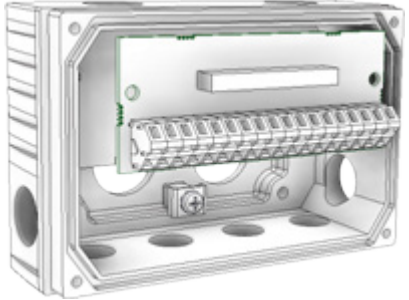
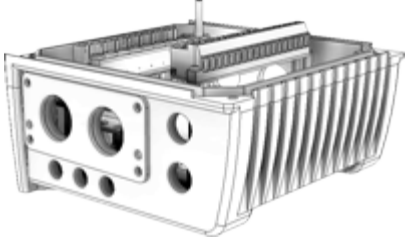
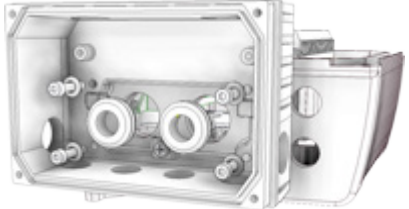
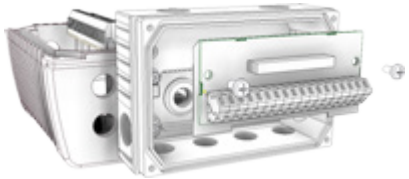
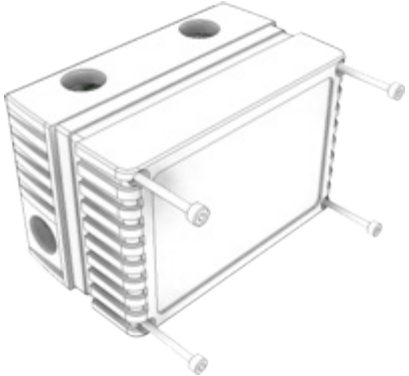
### Sealing

Ensure that no leaks are present during installation (assembly, cable leadthroughs, cable glands) in order to avoid penetration by moisture and therefore the risk of corrosion and short circuiting.

### Installation steps for attachment to the device



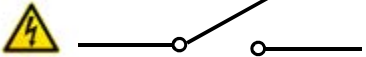


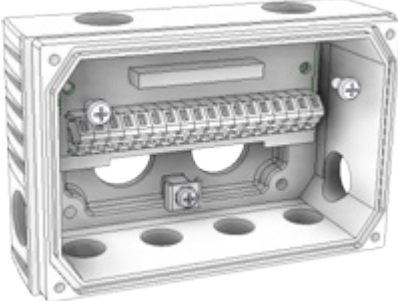
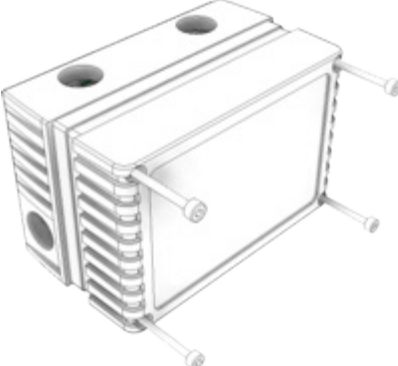
|    |  |   |
|----|--|---|
| 1. | Switch off the mains power.  |  |
| 2. | Remove the two M25 blind caps from the relevant side of the frequency inverter (right / left). |   |

|    |   |  |
|----|---|--|
| 3. | <p>Remove circuit board (with terminal strip) from connection unit SK TI4-TU-....</p>   |    |
| 4. | <p>Fit provided seal to the device..</p>  |    |
| 5. | <p>Fit SK TI4-TU-.... connection unit to device with the 4 provided screw bolts.<br/>Insert both of the provided leadthrough grommets into the M25 leadthroughs (to protect internal wiring between assembly and device).</p> |   |
| 6. | <p>Re-install circuit board (see point 3) and make the electrical connection.</p>   |  |
| 7. | <p>Fit SK TU4- assembly and screw in place.</p>   |  |

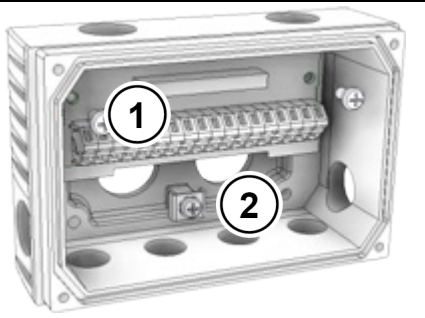
**Wall mounting assembly steps**

*(Wall mounting kit SK TIE4-TU-WMK optionally available)*



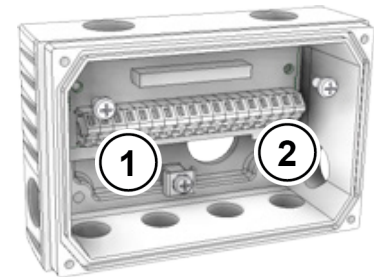
|    |   |   |
|----|---|---|
| 1. | Switch off the mains power.   |    |
| 2. | Install provided seal to SK TI4-TU-.... connection unit.  |    |
| 3. | Attach SK TI4-TU-.... connection unit to wall mounting kit. Screw the 2 cheese-head screws (wall mounting kit accessory pack) into the provided holes (countersunk) from the outside. |    |
| 4. | Insert the two screw bolts (wall mounting kit accessory pack) into the freely accessible holes in the rear panel from the inside and screw in place.                                  |   |
| 5. | Install unit at usage location and make electrical connection ( <b> cable length max. 20 m</b> ).   |   |
| 5. | Attach SK TU4- assembly and screw in place.   |  |

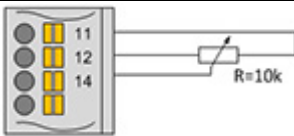
**Connections**

|   |                |                                      |   |  |
|---|----------------|--------------------------------------|---|--|
| 1 | Terminal strip | Double tension spring terminal strip | 18 contacts   |  |
| 2 | PE connection  | via housing                          | If fitted to the device (e.g. frequency inverter): make connection to PE of device using the provided cable (green/yellow). |  |
|   |                |                                      |   |  |

**Connections**

| Potential | Contact             | Designation | Description                     |  |
|-----------|---------------------|-------------|---------------------------------|--|
| 1         | 24 V DC low voltage | 43          | 24 V                            | Supply potential (+24 V, ≤ 480 mA)                     |
|           |                     | 40          | GND / 0 V                       | Reference potential (0 V / GND)                        |
|           |                     | 43          | 24 V                            | Supply potential (+24 V, ≤ 480 mA)                     |
|           |                     | 40          | GND / 0 V                       | Reference potential (0 V / GND)                        |
|           |                     | 43          | 24 V                            | Supply potential (+24 V, ≤ 480 mA)                     |
|           |                     | 40          | GND / 0 V                       | Reference potential (0 V / GND)                        |
|           |                     | 11          | 10 V                            | Reference voltage (10 V ± 0.2 V, ≤ 5 mA)               |
|           |                     | 14          | AIN +                           | Analogue input (0...10 V)                              |
|           |                     | 12          | AGND                            | Reference potential for analogue signals               |
|           |                     | B1          | FOUT                            | Pulse output, pulse signal converted from AIN setpoint |
|           |                     | B2          | ON-L                            | Left enable digital output, only with SK TU4-POT-...   |
|           |                     | B3          | ON-R                            | Right enable digital output, only with SK TU4-POT-...  |
|           | 40                  | GND / 0 V   | Reference potential (0 V / GND) |  |
| 2         | Mains               | PE          | PE                              | Earth, internally connected to the module housing.     |
|           |                     |             |                                 |  |
|           |                     | L1          | L1                              | Mains supply 1 Phase                                   |
|           |                     | L2/N        | L2/N                            | Mains supply 2 Phase / N                               |



| Meaning, Functions            |             | Description / Technical data  |   |                             |
|-------------------------------|-------------|---|---|-----------------------------|
| Terminal                      |             | Meaning   | Parameter   | Function of factory setting |
| No.                           | Designation |   | No.   |                             |
| <b>Analogue inputs</b>        |             | <b>Only in combination with SK TU4-24V-...</b><br>Connection of an analogue signal<br>(5-10 kΩ potentiometer, external control unit or similar) |   |                             |
|                               |             | Resolution 8Bit<br>Accuracy 0.2 V<br>V= 0 ... 10 V<br>I= 0/4 ... 20 mA<br>Burden resistor (500 Ω) enclosed                                      | + 10 V Reference voltage: 5 mA not short-circuit resistant  |                             |
|                               |             |   |   |                             |
| 11                            | 10V REF     | + 10 V Reference voltage  | -   | -                           |
| 12                            | AGND        | Analogue reference potential GND  | -   | -                           |
| 14                            | AIN1+       | Analogue input 1  | -   | -                           |
| <b>Control voltage source</b> |             | For the supply of frequency inverters and accessories with a 24 V control voltage   |   |                             |
|                               |             | 24 V DC ± 10 %<br>420 mA (total)  | Short circuit and limited excess temperature or overload monitoring available.  |                             |
| 43                            | VO / 24V    | Voltage output  | -   | -                           |
| 40                            | GND / 0V    | Reference potential GND   | -   | -                           |
| <b>Digital outputs</b>        |             | Digital signals for controlling an electronic drive device  |   |                             |
|                               |             | PLC-compatible as per EN61131-2<br>Low: 0 V, High: 24 V<br>Clock frequency: ~1 – 32 kHz   | Pulses for evaluation of the digital input functions of an SK 2xxE frequency inverter, size 1 - 3 P420 [-02]/[-03] = 26/27,<br>→ Analogue meaning P400 [-06]/[-07]. |                             |
| B1                            | FOUT        | Frequency output  | P400/P420   | -                           |
| 40                            | GND         | Reference potential GND   | -   | -                           |
| <b>Digital outputs</b>        |             | Digital signals for controlling an electronic drive device  |   |                             |
|                               |             | <b>Only in conjunction with SK TU4-POT</b><br>Control with the "Left" or "Right" buttons  |   |                             |
| B2                            | ON-L        | Enable Left signal  | P420  | -                           |
| B3                            | ON-R        | Enable Right signal   | P420  | -                           |
| <b>Mains connection</b>       |             | Mains voltage connection  |   |                             |
|                               |             | Mains connection, 100 - 240 V or 380 - 500 V, depending on the module   |   |                             |
| L1                            | L1          | Mains supply 1 Phase  | -   | -                           |
| L2                            | L2/N        | Mains supply 2 Phase / N  | -   | -                           |
| PE                            | PE          | PE, Earth   | -   | -                           |

**Additional documentation and software ([www.nord.com](http://www.nord.com))**

| Document  | Name                                 | Document                | Meaning                                     |
|---|--------------------------------------|-------------------------|---|
| <a href="http://www.nord.com/TI_275274002">TI 275274002</a> | Wall mounting kit for SK TIE4-WMK-TU | <a href="#">Various</a> | Data sheets for M12 - connection expansions |