1 Requirements

- con::cube D-315
- Internal modules. The following modules are available:
  - D-315-3GLX Gateway to 3G (older version)
  - D-330-4GLX Gateway to 4G
  - D-315-out-mA 2 analog outputs (max. 8 modules / 16 outputs possible)
  - D-315-out-Profibus Profibus DP (max. 1 output module)
  - D-315-out-SDI12 SDI 12 (max. 1 output module)
  - D-315-in-mA 2 analog inputs (max. 8 modules / 16 inputs possible)
  - D-315-in-relay 2 digital inputs (max. 7 modules / 14 inputs possible)

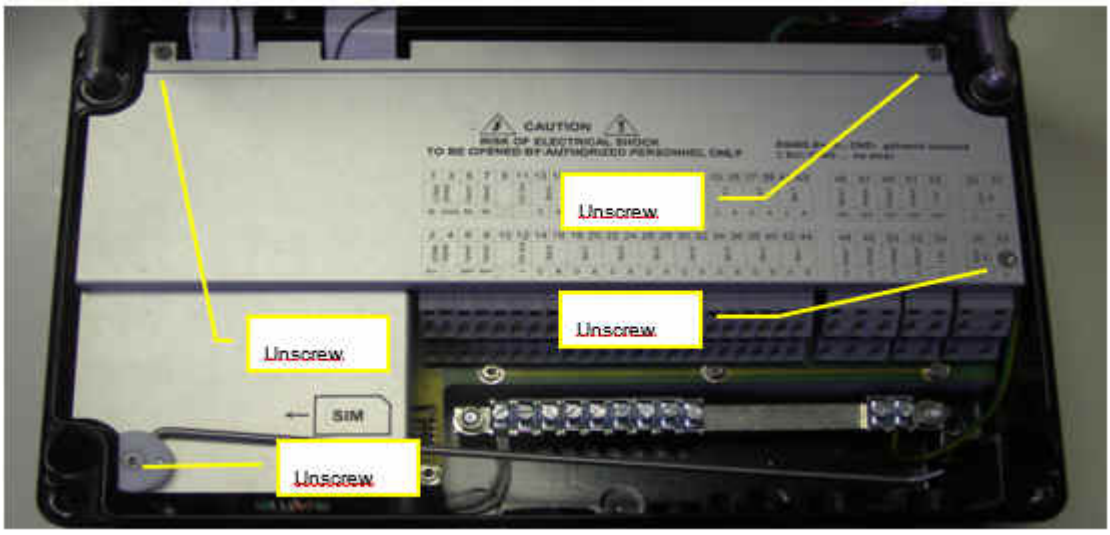
2 Introduction

By adding or removing con::cube internal modules optional features can be added or removed. Normally this is done at the s::can factory. A later upgrading of the con::cube with optional feature on site is possible with help of the following instruction. To read more about optional con::cube features or how to use it, refer to the con::cube and moni::tool manual.

3 Instruction

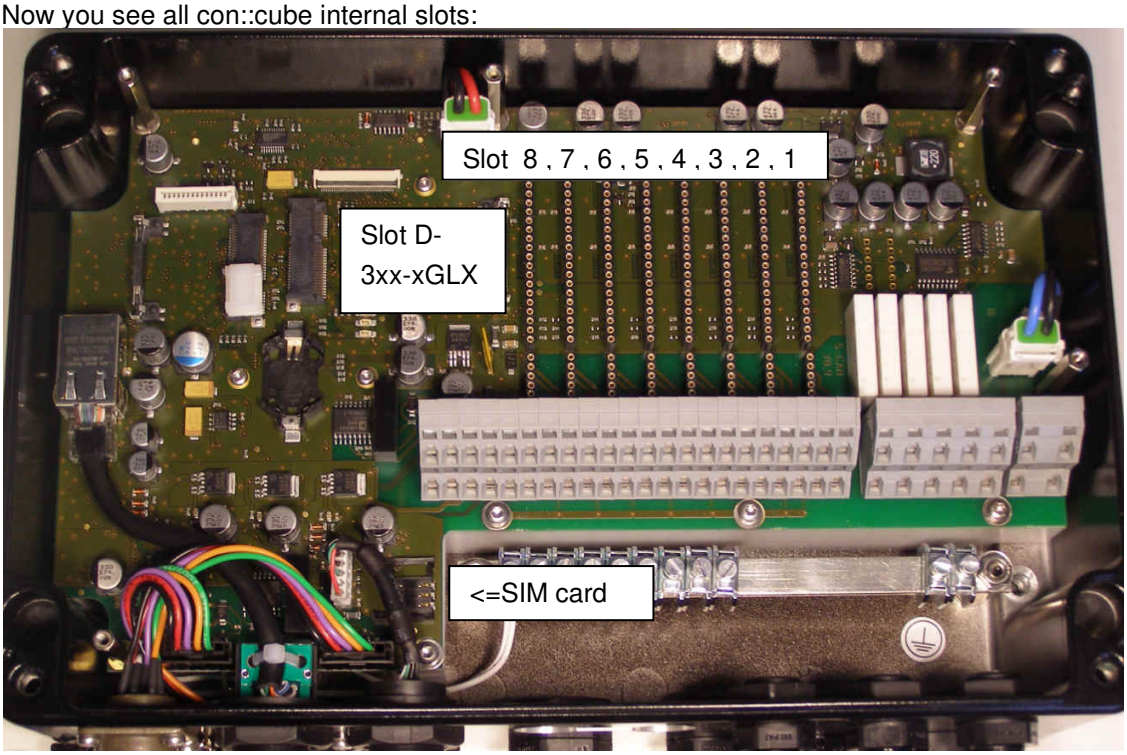
3.1 Start

- Power off the con::cube and ensure ESD protected environment.
- Open the con::cube housing (four hexagonal head screws removed)



- Remove the cover as shown in the picture above. You need “Torx T10” for that.

- Now you see all con::cube internal slots:



3.2 Using Slot 1-8

- See the next table to see which module works within which slot

Slot	8	7	6	5	4	3	2	1	type
D-315-out-mA	16+15	14+13	12+11	10+9	8+7	6+5	4+3	2+1	analogOut
D-315-out-Profibus	ok	no	no	no	no	no	no	no	fieldbus
D-315-out-SDI12	ok	no	no	no	no	no	no	no	fieldbus
D-315-in-mA	16+15	14+13	12+11	10+9	8+7	6+5	4+3	2+1	analogIn
D-315-in-relay	14+13	12+11	10+9	8+7	6+5	4+3	2+1	no	digitalIn

xx … you can insert this module into this slot.
xx … the module is not supported in this slot.

x+y … channel numbers shown in moni::tool, for example: analogOut1, analogIn4, digitalIn7

- Insert the module to the next free slot. All combinations are allowed respecting the table above. We recommend beginning from the right side (“Slot 1”).

- Apply the labels delivered with the internal modules on the cover on the correct position:

- The example above shows the correct positions for the labels if 3 analog output modules in slot 1, 2, 3 and one Profibus module is in slot 8. Slot 4, 5, 6, 7 are still free.

3.3 Install 4G Gateway

Requirements:

- moni::toolV4.3 or higher must be installed
- D-330-4GLX Gateway to 4G
- D-330-antenna-plug Internal antenna adapter cable and connector, option for con::cube
- D-330-antenna External, high range antenna option for con::cube, incl. 13 m extension cable

Instruction:

- Insert D-330-4GLX into slot and connect D-330-antenna-plug to module “Main” plug as shown in picture below (blue circle).
- Install SMA-Adapter of D-330-antenna-plug as shown in picture below (yellow circle)
  Remove one M16x1,5 cable gland 19 mm and 22 mm wrench. Insert the SMA-adapter in the empty slot. Note, that to retain the IP65 ingress protection of the con::cube unit, the O-ring (A000759) must be correctly installed. The SMA-adapter is fixed with an M16 nut (A230032).
- Connect the external antenna (item no. D-330-antenna)
- Insert SIM card (size mini sim)

3.4 Install 3G Gateway (older version)

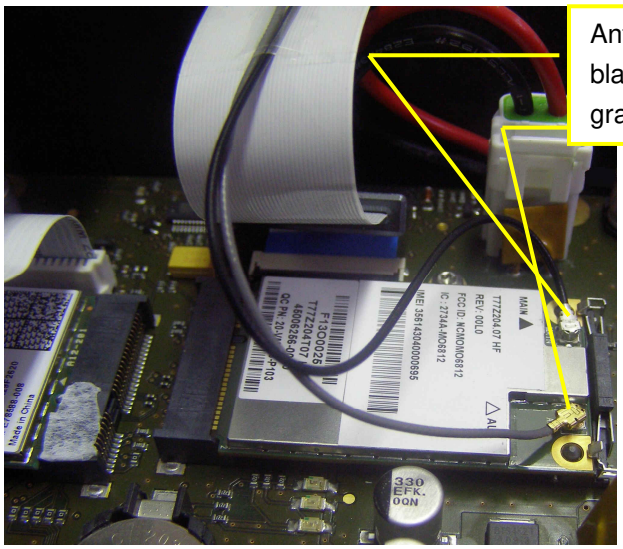
Requirements:

- D-315-3GLX Gateway to 3G (output module quad-band)

Instruction:

- Insert “Gateway to 3G” module (D-315-3GLX) into slot “D-3xx-xGLX”.
- Connect antenna (black and gray) to “Gateway to 3G” module as shown in picture below.

3G module supported with moni::toolV2(WinXPemb): 3G module supported with moni::toolV3(Linux):



To improve signal quality, connect optional external antenna using the following items:

- D-315-antenna-plug Internal antenna adapter cable and connector, option for con::cube
- D-315-antenna-pro External, high range antenna option for con::cube, incl. 10 m extension cable

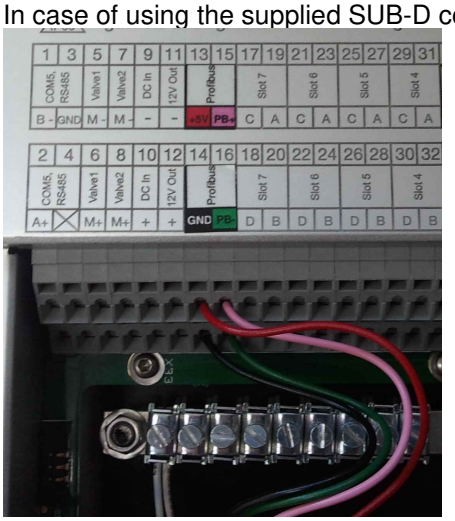
3.5 Finish

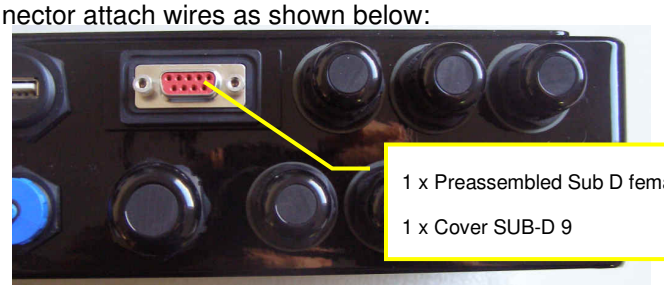
- Re-install the cover and close the moni::tool housing.
- Power on the con::cube.
- All changes of con::cube internal modules will be detected automatically except the PROFIBUS and SDI-12 module (D-315-out-Profibus and D-315-out-SDI12). See below how to proceed when installing these internal modules.
- Refer also to the con::cube & moni::tool manual for using the new features.

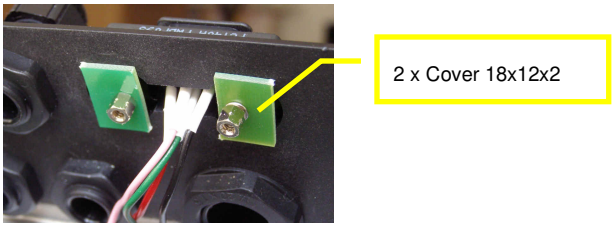
4 Appendix A: Special instruction needed for Profibus and SDI-12 module

4.1 Installation of PROFIBUS SUB-D connector

- In case of directly connect wires to the con::cube internal terminal you can skip this step (simply direct the PB-, PB+ and GND lines).
- In case of using the supplied SUB-D connector attach wires as shown below:



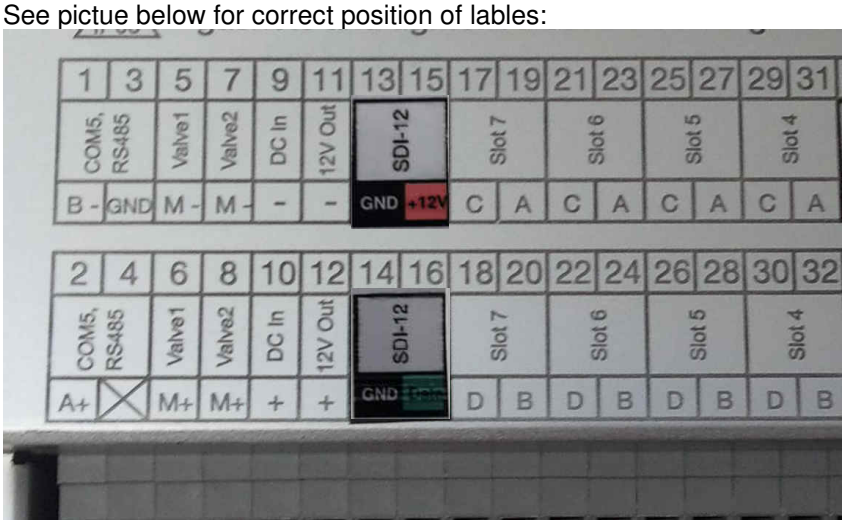




- Install the supplied SUB-D connector. From the outside insert SUB-D connector, Cover SUB-D and O-Ring. From the backside add the covers and fix the connector by the two screws. To not loose IP65 rating the screws have to be firmly screwed.

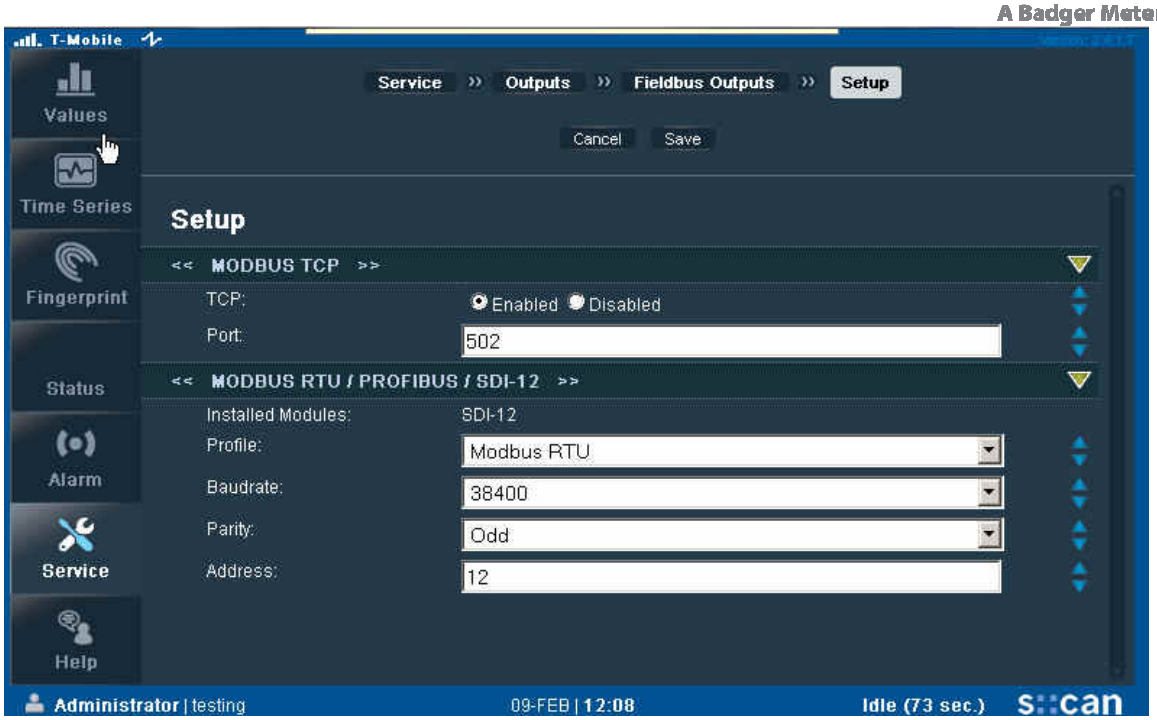
4.2 Installation of SDI-12

- See pictue below for correct position of lables:



4.3 Software Configuration

- Power on the con::cube.
- Go to Service/Terminal/Outputs/Fieldbus Outputs/Setup…



- The currently installed module you will see within “Installed Modules:”
- Select “Profile” and adjust the setup of the field bus output
- A help text can be expand for every element by pushing the blue arrows
- Push “Save” so take over the new setup. “Save” will restart the services. After about 20 seconds the new setup will work on your con::cube – no further re-start is necessary.

Mapping of output parameters

- Power on the con::cube.
- Go to Service/Terminal/Outputs/Fieldbus Outputs

- Configure the outputs as desired and confirm pushing “Save”
- In addition refer to the moni::tool manual for that action