

## Cxx-58 CANopen ( 2x M12, 1x M8 )

### Allgemeine Hinweise:

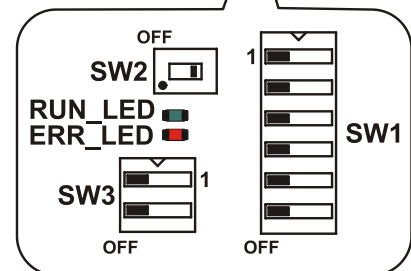
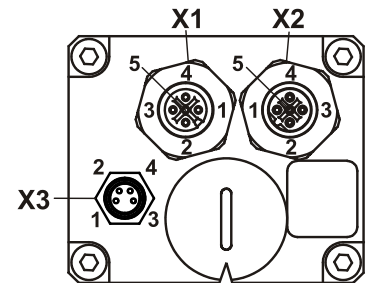
Wenn das Mess-System die letzte Station im CANopen-Segment ist, muss der DIP-Schalter **SW2** für den CAN-Bus-Terminator (Zuschaltung des Abschlusswiderstandes) eingeschaltet werden (SW2=ON). Sonst muss er ausgeschaltet sein (SW2=OFF). Bei der Zuschaltung des Abschlusswiderstandes wird der nachfolgende Bus (CANopen\_OUT) abgeschaltet, nachfolgende Slaves werden vom Bus getrennt.

Für den Betrieb sind nur paarweise verdrehte und geschirmte Bus- bzw. Anschlusskabel zu verwenden. Der Schirm ist jeweils auf die Kabelverschraubung des Gegensteckers aufzulegen.

| X1    | CANopen_OUT,<br>Buchse (A-kodiert) | X2    | CANopen_IN,<br>Stecker (A-kodiert) | X3    | US Versorgungs-spannung,<br>Stecker |
|-------|------------------------------------|-------|------------------------------------|-------|-------------------------------------|
| Pin 1 | CAN Shield                         | Pin 1 | CAN Shield                         | Pin 1 | 11-27 V DC                          |
| Pin 2 | Darf nicht belegt werden!          | Pin 2 | Darf nicht belegt werden!          | Pin 2 | Darf nicht belegt werden!           |
| Pin 3 | CAN_GND                            | Pin 3 | CAN_GND                            | Pin 3 | GND, 0 V                            |
| Pin 4 | CAN_H                              | Pin 4 | CAN_H                              | Pin 4 | Darf nicht belegt werden!           |
| Pin 5 | CAN_L                              | Pin 5 | CAN_L                              |       |                                     |

| SW1 Identifier (ID), Encoderadressierung |                              |                              |                              |                              |                              |                 |
|--|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-----------------|
| DIP-6<br>= ID 2 <sup>5</sup>             | DIP-5<br>= ID 2 <sup>4</sup> | DIP-4<br>= ID 2 <sup>3</sup> | DIP-3<br>= ID 2 <sup>2</sup> | DIP-2<br>= ID 2 <sup>1</sup> | DIP-1<br>= ID 2 <sup>0</sup> | Adresse<br>= ID |
| off                                      | off                          | off                          | off                          | off                          | off                          | 1               |
| off                                      | off                          | off                          | off                          | off                          | on                           | 2               |
| off                                      | off                          | off                          | off                          | on                           | off                          | 3               |
| :  | :                            | :                            | :                            | :                            | :                            | :               |
| on                                       | on                           | on                           | on                           | on                           | off                          | 63              |
| on                                       | on                           | on                           | on                           | on                           | on                           | 64              |

| SW3 Baudrate |       |           |                   |
|--------------|-------|-----------|-------------------|
| DIP-2        | DIP-1 | Baudrate  | Leitungslänge [m] |
| off          | off   | 20 kBaud  | bis 2500          |
| off          | on    | 125 kBaud | bis 500           |
| on           | off   | 500 kBaud | bis 100           |
| on           | on    | 1 MBaud   | bis 25            |



### Bus-Statusanzeige:

| LED           | Beschreibung  |
|---------------|---|
| ON            | permanent AN  |
| OFF           | permanent AUS   |
| Blinking      | Gleiche AN- und AUS-Zeit mit einer Frequenz von 2,5 Hz: AN = 200 ms, AUS = 200 ms   |
| Single flash  | Einmaliges kurzes Aufblinken, 200 ms AN, gefolgt von einer langen AUS-ZEIT, 1000 ms |
| Double flash  | Zweimaliges kurzes Aufblinken, jeweils 200 ms AN und AUS                            |
| Triple flash  | Dreimaliges kurzes Aufblinken, jeweils 200 ms AN und AUS                            |
| Flickering    | Gleiche AN- und AUS-Zeit mit einer Frequenz von 10 Hz: AN = 50 ms, AUS = 50 ms      |
| Flicker flash | alle 5000 ms für 500 ms Flickering (überlagert die oben aufgeführten Blinkzustände) |

| grün          | CAN RUN_LED  |
|---------------|--|
| ON            | Gerät befindet sich im OPERATIONAL Zustand         |
| OFF           | Versorgung fehlt, Hardwarefehler                   |
| Blinking      | Gerät befindet sich im PRE-OPERATIONAL Zustand     |
| Single flash  | Gerät befindet sich im STOPPED Zustand             |
| Triple flash  | Boot-Loader aktiv (Software Download findet statt) |
| Flickering    | LSS-Configuration aktiv                            |
| Flicker flash | Node-ID und Baudrate über LSS aktiv                |

| rot          | CAN ERR_LED  |
|--------------|--|
| ON           | keine Gegenstelle erkannt (Bus OFF)                      |
| OFF          | kein Fehler  |
| Single flash | zu viele Fehler im CAN-Controller                        |
| Double flash | Node Guarding- oder Heartbeat-Fehler                     |
| Flickering   | Geräte Hardwarefehler (z.B.: Sprung- oder EEPROM-Fehler) |

## Cxx-58 CANopen (2x M12, 1x M8)

### General note:

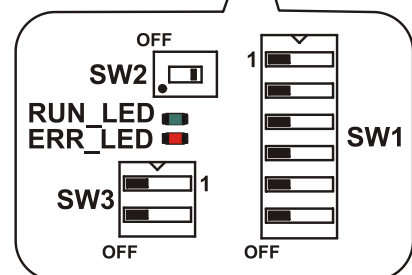
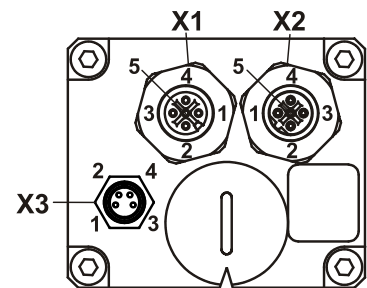
If the measuring system is the last station in the CANopen-segment, the DIP switch **SW2** for the CAN-bus terminator (switching-on of the terminal resistance) must be switched on (SW2=ON). Otherwise the terminator must be switched off (SW2=OFF). If the terminal resistance is switched on the following bus (CANopen\_OUT) is switched off and the slaves are separated from the bus.

For the operation shielded twisted-pair bus- or connection-cables must be used. The shield has to be connected to the cable screw gland of the mating connector.

| X1    | CANopen_OUT, female (A-coded) | X2    | CANopen_IN, male (A-coded) | X3    | US-supply voltage, male |
|-------|-------------------------------|-------|----------------------------|-------|-------------------------|
| Pin 1 | CAN Shield                    | Pin 1 | CAN Shield                 | Pin 1 | 11-27 V DC              |
| Pin 2 | Must not be connected!        | Pin 2 | Must not be connected!     | Pin 2 | Must not be connected!  |
| Pin 3 | CAN_GND                       | Pin 3 | CAN_GND                    | Pin 3 | GND, 0 V                |
| Pin 4 | CAN_H                         | Pin 4 | CAN_H                      | Pin 4 | Must not be connected!  |
| Pin 5 | CAN_L                         | Pin 5 | CAN_L                      |       |                         |

| SW1 Identifier (ID), Encoder addressing |                           |                           |                           |                           |                           |              |
|---|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--------------|
| DIP-6 = ID 2 <sup>5</sup>               | DIP-5 = ID 2 <sup>4</sup> | DIP-4 = ID 2 <sup>3</sup> | DIP-3 = ID 2 <sup>2</sup> | DIP-2 = ID 2 <sup>1</sup> | DIP-1 = ID 2 <sup>0</sup> | Address = ID |
| off                                     | off                       | off                       | off                       | off                       | off                       | 1            |
| off                                     | off                       | off                       | off                       | off                       | on                        | 2            |
| off                                     | off                       | off                       | off                       | on                        | off                       | 3            |
| :                                       | :                         | :                         | :                         | :                         | :                         | :            |
| on                                      | on                        | on                        | on                        | on                        | off                       | 63           |
| on                                      | on                        | on                        | on                        | on                        | on                        | 64           |

| SW3 Baud rate |       |           |                 |
|---------------|-------|-----------|-----------------|
| DIP-2         | DIP-1 | Baud rate | Line length [m] |
| off           | off   | 20 kbps   | up to 2500      |
| off           | on    | 125 kbps  | up to 500       |
| on            | off   | 500 kbps  | up to 100       |
| on            | on    | 1000 kbps | up to 25        |



### Bus Status:

| LED           | Definition  |
|---------------|---|
| ON            | constantly ON   |
| OFF           | constantly OFF  |
| Blinking      | equal ON and OFF times with a frequency of 2.5 Hz: ON = 200 ms, OFF = 200 ms. |
| Single flash  | one short flash, 200 ms ON, followed by a long OFF phase, 1000 ms.            |
| Double flash  | double short blinking, each 200 ms ON and OFF                                 |
| Triple flash  | triple short blinking, each 200 ms ON and OFF                                 |
| Flickering    | equal ON and OFF times with a frequency of 10 Hz: ON = 50 ms, OFF = 50 ms.    |
| Flicker flash | every 5000 ms for 500 ms Flickering (overlays the LED-states above)           |

| green         | CAN RUN_LED  |
|---------------|--|
| ON            | Device is ready for operation and is in state OPERATIONAL-Mode |
| OFF           | No supply, hardware error                                      |
| Blinking      | Device is in state PRE-OPERATIONAL-Mode                        |
| Single flash  | CAN communication stopped, the device is in state STOPPED-Mode |
| Triple flash  | Boot loader active (software download in progress)             |
| Flickering    | LSS configuration active                                       |
| Flicker flash | Node-ID and baud rate over LSS active                          |

| red          | CAN ERR_LED   |
|--------------|---|
| ON           | Bus offline, no bus connection                              |
| OFF          | No error  |
| Single flash | to much errors over the CAN-controller                      |
| Double flash | Node Guarding or Heartbeat error                            |
| Flickering   | device hardware error (such as: measuring- or EEPROM error) |