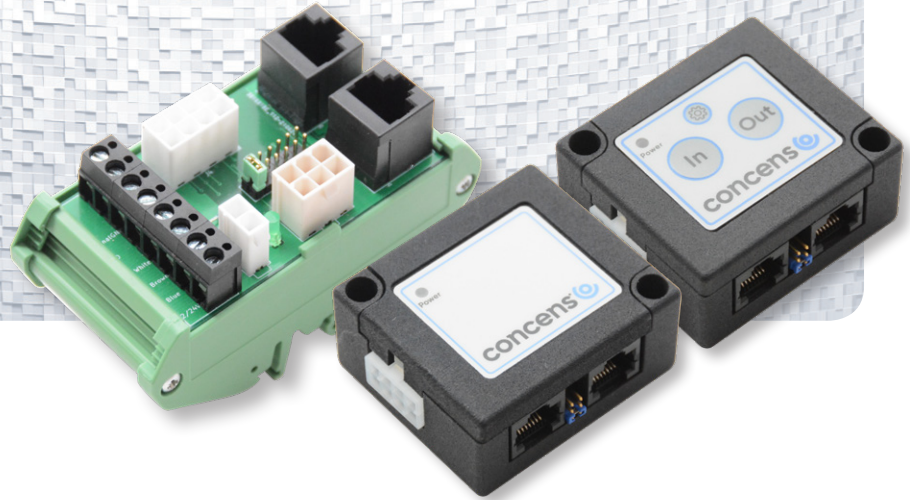# INSTALLATION GUIDE

conXion

Box/Box+/DIN

DOC-CONX-INSTA-GB-00

concens

The conXion Box, Box+ and conXion DIN are accessories, which are easy to use as plug & play solutions when connecting icon actuator(s).

The conXion Box/Box+ takes up minimal space and can be easily installed/mounted on various surfaces by using the integrated mounting holes.

The Box+ is equipped with push buttons for driving the actuator in/out and activating override (MDO only).

The conXion DIN is meant for more industrial use because it is mounted on standard DIN rail with brackets and thereby giving easy access to the connections.

All solutions have identical sockets and a LED that indicate when the external power supply is on. Furthermore they are compatible with our icon series for connection of:

- conXion Box/Box+ for icon actuators with Molex Mini-Fit JR

- conXion DIN rail for icon actuators with Molex Mini-Fit JR or open ends using the screw terminals

- USB programming cable for icon actuators

- Power supply

- Port for routing to the next conXion

- Concens Handset (simple)

Contents

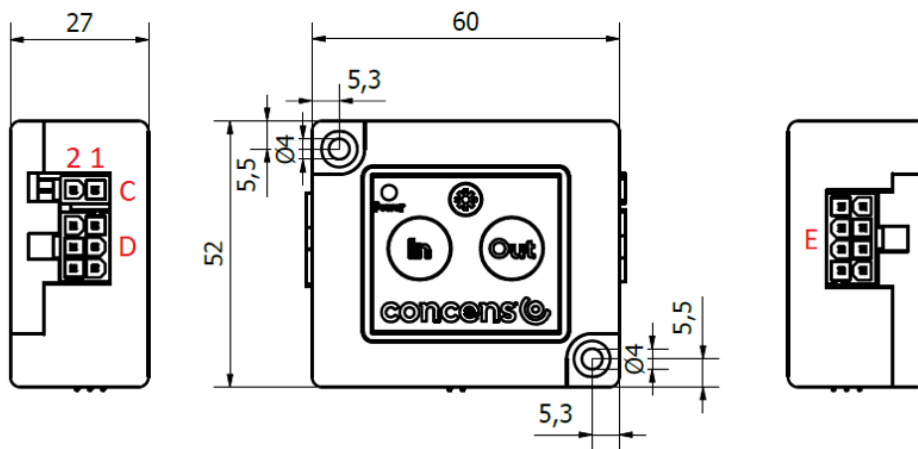**conXion Box**

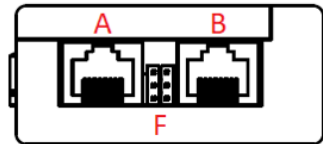**conXion Box+**

conXion DIN

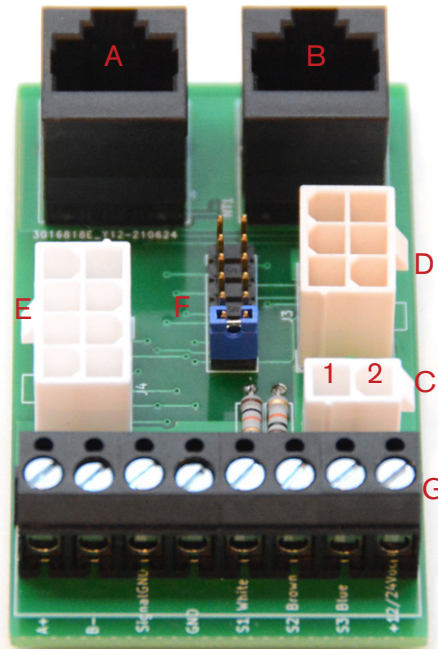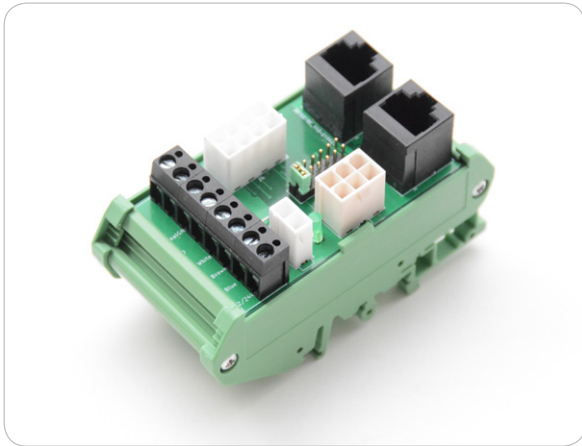**concens**

conXion Box

conXion Box+

conXion

conXion Box and conXion Box+ have identical dimensions. Dimensions in [mm]

A: RJ45 type, connection for the programming cable

B: RJ45 type, connection for routing to the next conXion box with a conXion cable
(routing sequence is B to A….B to A)

C: 2 pin Molex Mini-Fit type, Power supply input. Pin 1: +12/24VDC, pin 2: GND

D: 6 pin Molex Mini-Fit type, connection for a Concens handset (simple)

E: 8 pin Molex Mini-Fit type, connection for the icon actuator
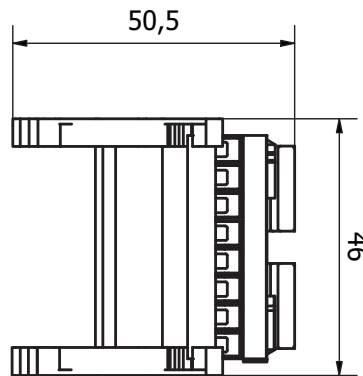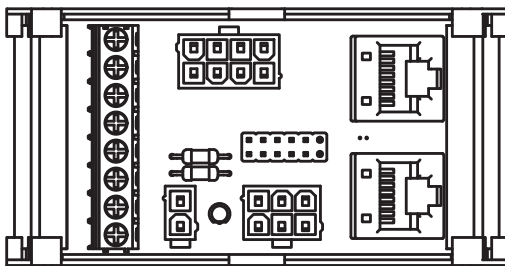
F: Jumper settings. See page 4

Operating temp. (Ta) - 20 °C to + 60 °C

Note: For actuators with shielded cables, shields must be connected to power-ground at conXion end.

conXion DIN

A: RJ45 type, connection for the programming cable

B: RJ45 type, connection for routing to the next conXion DIN with a conXion cable (routing sequence is B to A….B to A)

C: 2 pin Molex Mini-Fit, power supply input.
Pin 1: +12/24 VDC, pin 2: GND

D: 6 pin Molex Mini-Fit, connection for a Concens handset (simple)

E: 8 pin Molex Mini-Fit, connection for icon actuators
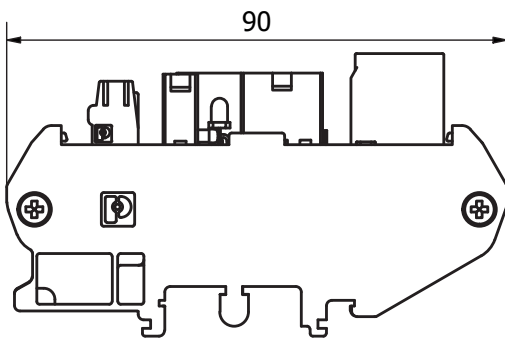
F: Jumper settings. See page 4.

G: Screw terminals for icon actuators with open ends wire and connection for input and output signals. See page 4.

conXion

ConXion DIN screw terminal color coding

No.	Color	Function
1	Yellow	RS485 RX +A
2	Green	RS485 TX -B
3	Orange	*
4	Black	GND Power
5	White	*
6	Brown	*
7	Blue	*
8	Red	Power (12 or 24 V)

The *indicates that function depends on the actuator configuration.
See scheme below.

Please notice, the indicated terminal digits are only as a visual presentation for the installation guide and not on the physical product.

Type	SDB	SDH	SDP	SPP	SBS	MDO
Description	Single/Direction/Basic	Single/Direction/Hall	Single/Direction/Position	Single/Position/Position	Single/Bus/Status	Multiple/Direction/override
Key letter	A	B	C	D	E	F
No/Color						
1 Yellow	RS485 TX +A	RS485 TX +A	RS485 TX +A	RS485 TX +A	RS485 TX +A	RS485 TX +A
2 Green	RS485 RX -B	RS485 RX -B	RS485 RX -B	RS485 RX -B	RS485 RX -B	RS485 RX -B
3 Orange	GND Signal	Hall B output	GND Signal	GND Signal	GND Signal	GND Signal
4 Black	GND Power	GND Power	GND Power	GND Power	GND Power	GND Power
5 White	Not used	Hall A output	Position output	5-10 V reference	Not used	Override
6 Brown	Dir. IN	Dir. IN	Dir. IN	Pos ok/stop input	Error out	Dir. IN
7 Blue	Dir. OUT	Dir. OUT	Dir. OUT	Position input	Stop input	Dir. OUT
8 Red	Power 12/24 V	Power 12/24 V	Power 12/24 V	Power 12/24 V	Power 12/24 V	Power 12/24 V
Jumper setting conXion box						
Jumper setting conXion box+						
Jumper setting conXion DIN						

Numbers refer to label on screw terminal, not pin numbers in the 8-pin Molex Minifit plug.

Jumper is closest to screwterminal on conXion DIN.

ConXion Box/Box+ is delivered with 2 jumpers, but always place jumper(s) according to the above overview.

Note: For actuators with shielded cables, shields must be connected to power-ground at conXion end.

conXion

Single or multiple (MDO) icon
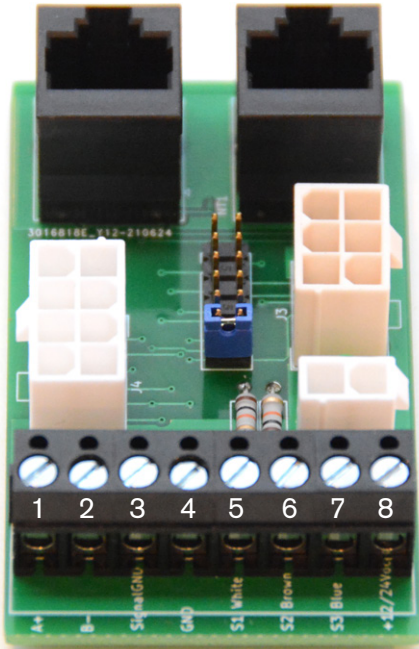
Icon actuators with key letters A-B-C-D-E are all 'single' actuators meaning that you cannot synchronize multiple actuators. However, it is possible to address up to 10 'single' actuators in the same system.
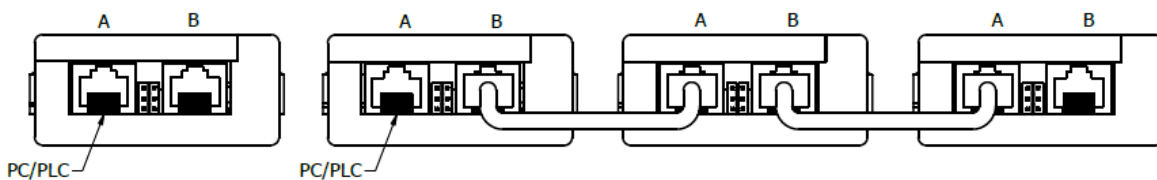
This limitation is caused by limited bandwidth, but with additional equipment the theoretical limit is increased to addressing up to 128 icon actuators in the same system.

All configurations of icon actuators (A-E) have different options as displayed in the overview on page 4. Icon actuators (A-E) can be connected to the conXion Box/Box+/DIN (one to one) as a single actuator, or multiple actuators if routed with conXions cables. Note routing sequence is B to A….B to A…….B to A (Also called daisychain).

Each icon actuator has it own address 1 to 128 (default is 8) and Modbus communicate with all addresses.

Handsets or other, such as potentiometers, dry contacts or analog PLC outputs, must be connected to every icon actuator individually.

Configurations: A-B-C-D-E

Icon actuators with the key letter F are always multiple (minimum 2 and maximum 8 pcs). F-configuration icon actuators are for synchronous use only. It is possible to override the synchronous function and run a single icon actuator only. The override function is activated by pulling pin 7 (in 8-pin Molex) or pin 5 (white wire in screw terminal) down. It is now possible to run this actuator alone using the handset connected to the corresponding conXion Box/Box+/DIN.
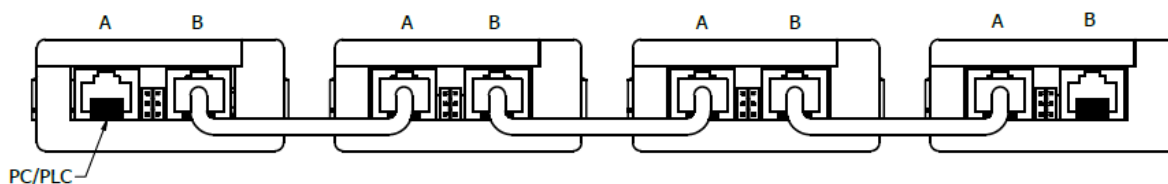
Each icon actuator has its own address from 200 to 207. Address 200 is always the Master. If nothing else is agreed when ordering the default address is 200. Up to 8 icons (but minimum 2) may run in the same system, but only the 'Master' (address 200) is controlled by a handset or other, such as, third party dry contacts or PLC.

The 'Master' uses and occupies Modbus for communication with the 'Slaves'. Hence, controlling the MDO system using Modbus is not possible.

Every icon in the system has the "Override" feature.

MDO master addr. 200   **Configurations: F**

conXion

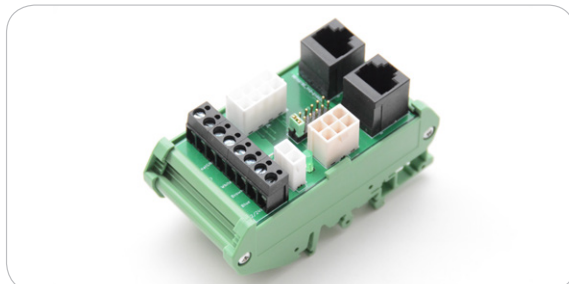## Products and accessories - incl. Part No.

Part No. for our conXion products and the optional accessories.

conXion Box
CC-971-07-0000-00-00

conXion Box+
CC-971-05-0000-00-00

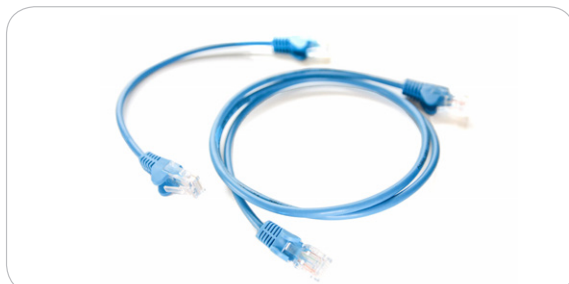**conXion DIN**
CC-971-06-0000-00-00

Power supply 24VDC/2A w/cable (EU/UK/US/AU)
CC-980-02-0000-00-01

Programming cable (USB-RS485):
CC-874-01-0000-00-00

Handset
CC-HST-001920-011000

conXion cable, 0,25 m	CC-875-01-0000-00-00
conXion cable, 1 m	CC-875-02-0000-00-00
conXion cable, 5 m	CC-875-03-0000-00-00
conXion cable, 10 m	CC-875-04-0000-00-00
conXion cable, 20 m	CC-875-05-0000-00-00

Concens Free Downloadable software CAS
(Concens Actuator Studio)

conXion

Contact information

For further information or a product demonstration of the conXion Box/Box+/DIN for our icon series - the intelligent actuator from Concens with integrated controller: Do not hesitate to contact our Partner near you, or us directly, if there is no local presence in your country.

- Find your local partner here - Concens contacts
- Contact us directly at - sales@concens.com
- Or give us a call: +45 7011 1131

conXion

Recommendations and warnings

- Attention! Icon actuators and the conXion Box/Box+/DIN have no fuses in them. Use an external fuse according to application.
- Please ensure that the power supply is capable of supplying sufficient current – otherwise the icon actuator may be damaged.
- Double-check correct polarity of the power supply. If connected wrong the icon actuator will be damaged.
- If wire colors differ from what is expected, please check with the supplier or check on our YouTube channel before connecting the conXion Box/Box+/DIN to a power supply.
- Connect the icon actuator to a power supply before connecting the USB programming cable.

Disclaimer

- Concens products are continuously developed, built and tested for highest requirements and reliability but it is always the responsibility of the customer to validate and test the suitability of our products in a given application and environment. Concens products must not be used in safety critical applications.
- We do our utmost to provide accurate and up-to-date information at all times. In spite of that, Concens cannot be held responsible for any errors in the documentation. Specifications are subject to change without prior notice.

For more information, please visit our website at www.concens.com

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