ABB i-bus® KNX
I/O Actuator, 8fold, MDRC
IO/S 8.6.1.1, 2CDG 110 169 R0011

2CDC 071 039 S0012

The IO/S 8.6.1.1 is a modular installation device (MDRC) in Pro*M* design. It is intended for installation in the distribution board on 35 mm mounting rails. The assignment of the physical addresses as well as the parameterization is carried out with the ETS and the current application.

The I/O Actuator is powered via the ABB i-bus® and does not require an additional auxiliary voltage supply.

The device is ready for operation after connecting the bus voltage.

Technical data

Supply	Bus voltage	21…32 V DC
	Current consumption, bus	Maximum 12 mA (Fan-In 1)
	Leakage loss, bus	Maximum 250 mW
	Leakage loss, device	Maximum 1.68 W*
* The maximum power consumption of the device results from the following specifications:	Relay 6 A	1.68 W
Connections	KNX	Via bus connection terminals, 2-fold (red/black) 0.8 mm Ø, solid
	Circuits	Screw terminal with universal head (PZ 1) 0.2…4 mm² stranded, 2 x (0.2…2.5 mm²) 0.2…6 mm² single core, 2 x (0.2…4 mm²)
	Ferrules without/with plastic sleeves	without: 0.25…2.5 mm² with: 0.25…4 mm²
	TWIN ferrules	0.5…2.5 mm²
	Tightening torque	Maximum 0.6 Nm
Operating and display elements	Button/LED	For assignment of the physical address
Enclosure	IP 20	Compliant to DIN EN 60 529
Safety class	II	Compliant to DIN EN 61 140
Insulation category	Overvoltage category	III to DIN EN 60 664-1
	Pollution degree	2 to DIN EN 60 664-1
KNX safety extra low voltage	SELV 24 V DC	
Temperature range	Operation	-5 °C…+45 °C
	Transport	-25 °C…+70 °C
	Storage	-25 °C…+55 °C
Ambient conditions	Maximum air humidity	93 %, no condensation allowed

ABB i-bus® KNX
I/O Actuator, 8fold, MDRC
IO/S 8.6.1.1, 2CDG 110 169 R0011

Design	Modular installation device (MDRC)	Modular installation device, Pro *M*
	Dimensions (H x W x D)	90 x 144 x 64.5 mm
	Mounting width in space units	8 modules at 18 mm
	Mounting depth	64.5 mm
Installation	On 35 mm mounting rail	Compliant to DIN EN 60 715
Mounting position	as required	
Weight	0.3 kg	
Housing/colour	Plastic housing, grey	
Approvals	KNX to EN 50 090-1, -2	Certification
CE mark	In accordance with the EMC guideline and low voltage guideline	

Important
The maximum permissible current of a KNX line may not be exceeded.
During planning and installation ensure that the KNX line is correctly dimensioned.
The device features a maximum current consumption of 12 mA (Fan-In 1).

Binary inputs

Rated values	Number	8[1)]
	U_n scanning voltage	32 V, pulsed
	I_n scanning current	0.1 mA
	Scanning current I_n at switch on	Maximum 355 mA
	Permissible cable length	≤ 100 m one-way, at cross-section 1.5 mm² even when the core is routed in a multi-control cable

[1)] All binary inputs are internally connected to the same potential

ABB i-bus® KNX
I/O Actuator, 8fold, MDRC
IO/S 8.6.1.1, 2CDG 110 169 R0011

Rated current output 6 A

Rated values	Number	8 contacts
	U_n rated voltage	250/440 V AC (50/60 Hz)
	I_n rated current (per output)	6 A
Switching currents	AC3* operation (cos φ = 0.45) to DIN EN 60 947-4-1	6 A/230 V
	AC1* operation (cos φ = 0.8) to DIN EN 60 947-4-1	6 A/230 V
	Fluorescent lighting load to DIN EN 60 669-1	6 A/250 V (35 µF)[2]
	Minimum switching power	20 mA/5 V 10 mA/12 V 7 mA/24 V
	DC current switching capacity (resistive load)	6 A/24 V=
Service life	Mechanical service life	> 10^7
	Electronic service life to DIN IEC 60 947-4-1	
	AC1* (240 V/cos φ = 0.8)	> 10^5
	AC3* (240 V/cos φ = 0.45)	> 1,5 x 10^4
	AC5a* (240 V/cos φ = 0.45)	> 1,5 x 10^4
Switching times[1]	Maximum relay position change per output and minute if only one relay is switched.	2,683

[1] The specifications apply only after the bus voltage has been applied to the device for at least 10 seconds. Typical delay of the relay is approx. 20 ms.

[2] The maximum inrush-current peak may not be exceeded.

*** What do the terms AC1, AC3 and AC5a mean?**

In Intelligent Installation Systems, different switching capacity and performance specifications, which are dependent on the special application, have become established in industrial and residential systems. These performance specifications are rooted in the respective national and international standards. The tests are defined so that typical applications, e.g. motor loads (industrial) or fluorescent lamps (residential) are simulated.

The specifications AC1 and AC3 are switching performance specifications which have become established in the industrial field.

Typical application:

AC1 – Non-inductive or slightly inductive loads, resistive furnaces (relates to switching of oh-mic/resistive loads)

AC3 – Squirrel-cage motors: Starting, switching off motors during running (relates to (inductive) mo-tor load)

AC5a – Switching of electric discharge lamps

These switching performances are defined in the standard EN 60947-4-1 *Contactors and motor-starters - Electromechanical contactors and motor-starters*. The standard describes starters and/or contactors that previously were preferably used in industrial applications.

Output lamp load 6 A

Lamps	Incandescent lamp load	1200 W
Fluorescent lamps T5/T8	Uncorrected	800 W
	Parallel compensated	300 W
	DUO circuit	350 W
Low-voltage halogen lamps	Inductive transformer	800 W
	Electronic transformer	1000 W
	Halogen lamps 230 V	1000 W
Dulux lamp	Uncorrected	800 W
	Parallel compensated	800 W
Mercury-vapour lamp	Uncorrected	1000 W
	Parallel compensated	800 W
Switching performance (switching contact)	Maximum peak inrush-current I_p (150 µs)	200 A
	Maximum peak inrush-current I_p (250 µs)	160 A
	Maximum peak inrush-current I_p (600 µs)	100 A
Number of electronic ballasts (T5/T8, single element)[1)]	18 W (ABB EVG 1 x 18 CF)	10
	24 W (ABB EVG-T5 1 x 24 CY)	10
	36 W (ABB EVG 1 x 36 CF)	7
	58 W (ABB EVG 1 x 58 CF)	5
	80 W (Helvar EL 1 x 80 SC)	3

[1)] For multiple element lamps or other types, the number of electronic ballasts must be determined using the peak inrush current of the electronic ballasts.

Device type	Application	Max. number of Communication objects	Max. number of group addresses	Max. number of associations
IO/S 8.6.1.1	I/O Actuator, 8f/…*	255	255	255

* … = current version number of the application program. **Please observe the software information on our homepage for this purpose**.

Note

For a detailed description of the application see “*I/O Actuators IO/S x.6.1.1*” product manual.
It is available free-of-charge at *www.abb.com/knx*. The ETS and the current version of the device application are required for programming.

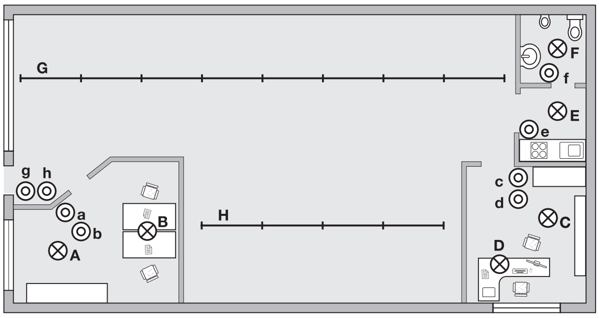
The current version of the application is available for download on the internet at *www.abb.com/knx*. After import it is available in the ETS under *ABB/Outputs/IO-Actuators.*

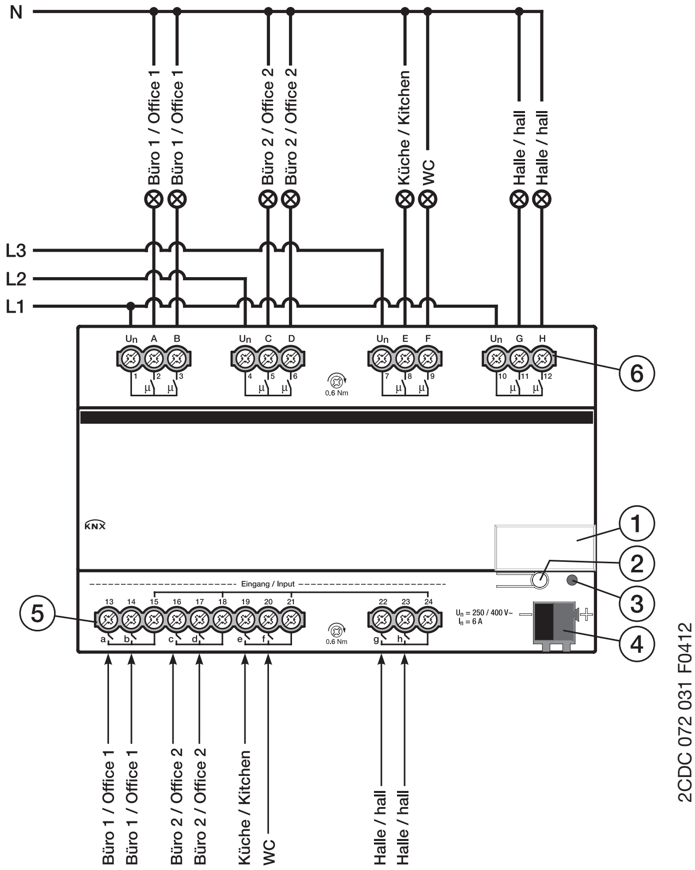
The device does not support the locking function of a KNX device in the ETS. If you inhibit access to all devices of the project with a *BCU code*, it has no effect on this device. Data can still be read and programmed.

ABB i-bus® KNX
I/O Actuator, 8fold, MDRC
IO/S 8.6.1.1, 2CDG 110 169 R0011

Connection schematic

Example of a typical floor plan





IO/S 8.6.1.1

1 Label carrier
2 Button *Programming*
3 LED *Programming* ● (red)
4 Bus connection terminal
5 Inputs (a, b, c, d, e, f, g, h)
6 Outputs, 2 contacts, 1 screw terminal for phase connection (A, B), (C, D), (E, F) and (G, H))

ABB i-bus® KNX
I/O Actuator, 8fold, MDRC
IO/S 8.6.1.1, 2CDG 110 169 R0011

Dimension drawing