

Interface KNX

Code: **IF1KNX**



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1. USE

Interface tool composed of 2 modules D1 DIN43880.
 The interface performs the conversion between the Modbus protocol of IME Multifunctions and Counters and the KNX protocol making data available on request or with spontaneous declarations.

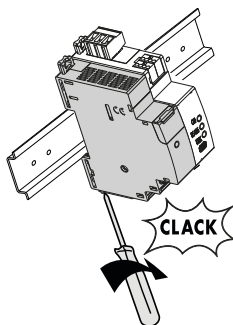
2. RANGE

Code Art.	Model	Type of connection	Weight
IF1KNX	Interface	Prewired cables (Art.SXAC250)	0,048Kg
SXAA230	Power supply	Prewired cables (Art.SXAC250)	0,068Kg

3. INSTALLATION

Fixing:

On EN/IEC 60715 symmetrical rail or DIN 35 rail.



Tools required:

For fastening the device on the DIN rail: 5,5 mm flat screwdriver (6 mm max.)

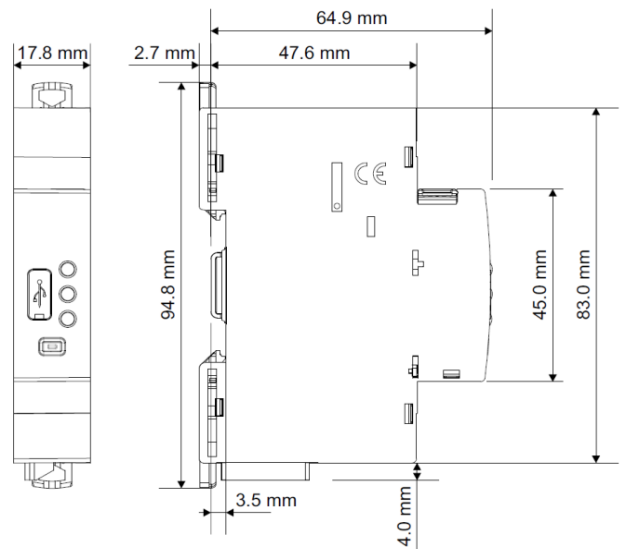
Operating position:

Vertical, Horizontal, Upside down, On the side



4. DIMENSIONS

Housing: 1 module DIN43880



5. COMMISSIONING - CONNECTION

RS485 communication:

Screw terminals for conductor up to 1.5 mm²

Communication:

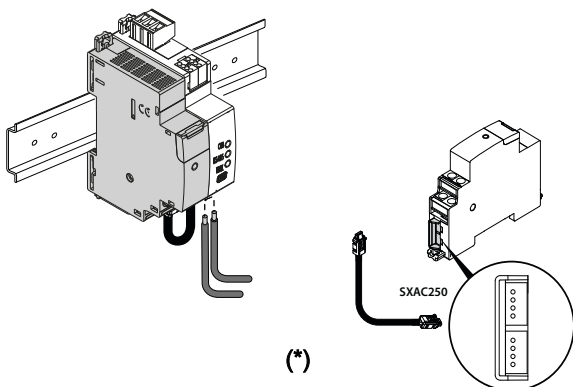
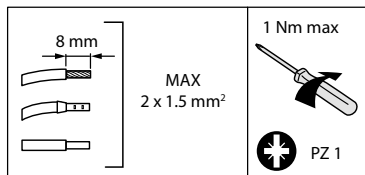
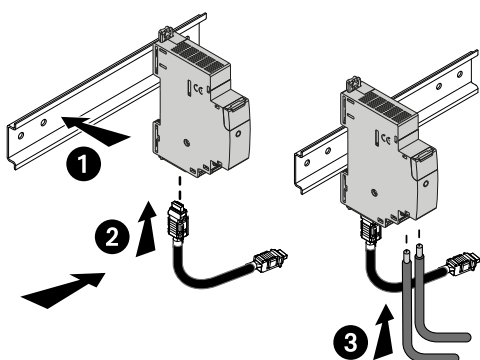
KNX standard connector

Interconnection between the modules:

By means of the specific prewired connection cables (Item SXAC250)



Specific wire supplied with KIT



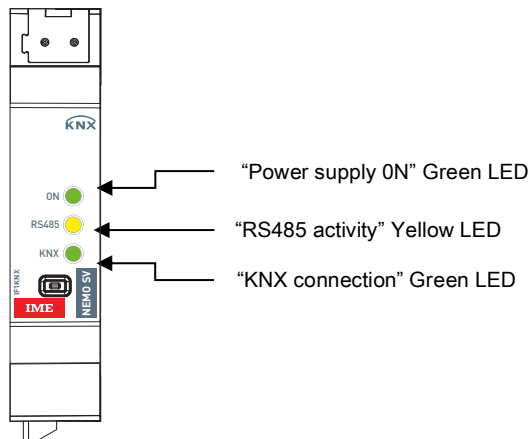
Power supply:

- 12Vd.c., by means of specific power supply module item **SXAA230**
- Modules connected by specific wires supplied (item SXAC250)
- And specific dedicated ports (*) on the devices themselves.

6. GENERAL FEATURES (continues)

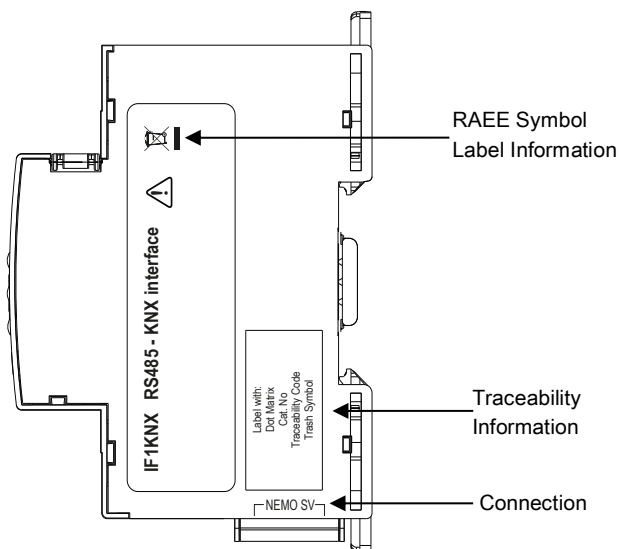
Front part marking:

Marking by indelible tampography and laser.



Side marking:

Right side: installation and traceability information



Self consumption SXAA230:

2VA 95...250V ac

Operating room temperatures:



- Min. = - 25 °C Max. = + 55 °C.

Room storage temperatures:

- Min. = - 40 °C Max. = + 70 °C.

6. GENERAL FEATURES *(continues)***Multifunction key:**

Possible statuses:

Colour	Status	Meaning
 red	On Pressing the key	The key LED remains on during the "COMMISSIONING" phase
 grey	Off	Normal operation

Features of the RS485 communication port:

- The devices connected on the RS485 BUS must have the programming (9600,N,8,1)
- Communication speed: 9.6 kbps
- Parity bit: none
- Data bits 8
- Stop bit: 1
- Address: 1...32

Protection class:

- Terminal protection index against direct contacts: IP2X (IEC/EN 60529)
- Terminal protection index against solid bodies and liquids (wired device): IP 20 (IEC/EN 60529).
- Housing protection index against solid bodies and liquids: IP 40 (IEC/EN 60529).
- Class II, front part with closing panel

Room: Mechanical M1 – Electric E2**Housing material:** Self-extinguishing polycarbonate.**Packaged volume:** 0,43 dm³.**6. GENERAL FEATURES****KNX Communication****Standard:**

- EN 50090 – EN 13321-1 ISO/ IEC 14543

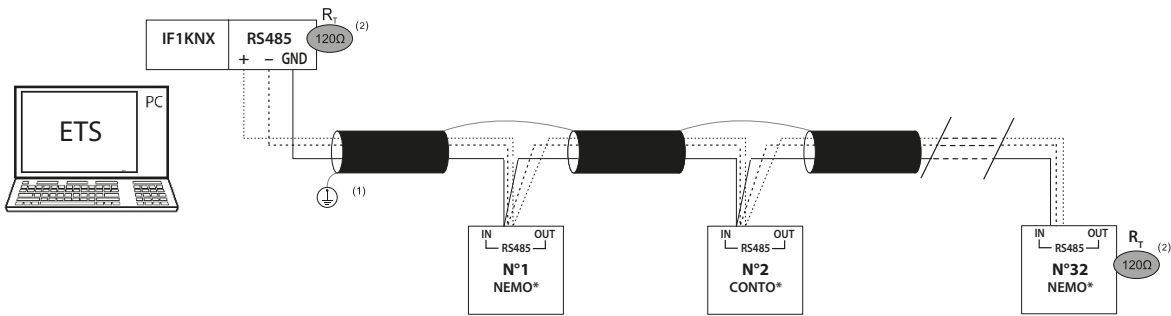
Maximum distance from the supervisor

- according to KNX standard

Configuration	W
Stand-by	< 0,4
In communication	< 0,5

7. SYSTEM ARCHITECTURES

RS485 Modbus Wiring diagram



* Modbus Address: 1 ÷ 32

(1) BELDEN 9842, BELDEN 3106A (or equivalent) max. 1000 m Cat. 6 (FTP/UTP) max. 50 m

(2) Resistance not supplied to be connected between “+ and -” of the first and last device of the line

7.1. MEASUREMENT POINTS

Magnitudes	Description	Profils					ID	Name	Unit
		Conto D1	Conto D2	Meters	Multifunction	Generic			
V1	Phase Voltage 1 [V]	•	•	•	•	•	14.028	DPT_Value_Electric_PotentialDifference	V
V2	Phase Voltage 2 [V]			•	•	•	14.028	DPT_Value_Electric_PotentialDifference	V
V3	Phase Voltage 3 [V]			•	•	•	14.028	DPT_Value_Electric_PotentialDifference	V
I1	Phase Current 1 [A]	•	•	•	•	•	14.019	DPT_Value_Electric_Current	A
I2	Phase Current 2 [A]			•	•	•	14.019	DPT_Value_Electric_Current	A
I3	Phase Current 3 [A]			•	•	•	14.019	DPT_Value_Electric_Current	A
V12	Chained Voltage 12 [V]			•	•	•	14.028	DPT_Value_Electric_PotentialDifference	V
V23	Chained Voltage 23 [V]			•	•	•	14.028	DPT_Value_Electric_PotentialDifference	V
V13	Chained Voltage 13 [V]			•	•	•	14.028	DPT_Value_Electric_PotentialDifference	V
P+	Positive Active Power [W]	•	•	•	•	•	14.056	DPT_Value_Power	W
P-	Negative Active Power [W]		•	•	•	•	14.056	DPT_Value_Power	W
Q+	Positive Reactive Power [var]	•		•	•	•	14.056	DPT_Value_Power	W
Q-	Negative Reactive Power [var]			•	•	•	14.056	DPT_Value_Power	W
S	Apparent Power [VA]	•		•	•	•	14.056	DPT_Value_Power	W
PM	Average Power [W]			•	•	•	14.056	DPT_Value_Power	W
PMD	Maximum Power Demand [W]			•	•	•	14.056	DPT_Value_Power	W
PF	Power Factor	•	•	•	•	•	14.057	DPT_Value_Power_Factor	-
EA +	Positive Active Energy [Wh]	•	•	•	•	•	13.010	DPT_ActiveEnergy	Wh
EA+	Positive Active Energy [kWh]	•	•	•	•	•	13.013	DPT_ActiveEnergy [kWh]	kWh
ER+	Positive Reactive Energy [varh]	•		•	•	•	13.012	DPT_ReactiveEnergy	varh
ER+	Positive Reactive Energy [kvarh]	•		•	•	•	13.015	DPT_ReactiveEnergy [kWh]	kvarh
EA-	Negative Active Energy [Wh]				•		13.010	DPT_ActiveEnergy	Wh
EA-	Negative Active Energy [kWh]				•		13.013	DPT_ActiveEnergy [kWh]	kWh
ER-	Negative Reactive Energy [varh]				•		13.012	DPT_ReactiveEnergy	varh
ER-	Negative Reactive Energy [kvarh]				•		13.015	DPT_ReactiveEnergy [kWh]	kvarh
Frequency	Frequency [Hz]	•	•	•	•	•	14.033	DPT_Value_Frequency	Hz
Hour Counter	Hour Counter [s]	•	•	•	•	•	13.100	DPT_LongDeltaTimeSec	s
THD V	Voltage THD [%]				•		5.004	DPT_Percent_U8	-
THD I	Current THD [%]				•		5.004	DPT_Percent_U8	-
Status	Device status	•	•	•	•	•	6.020	status with mode	

NOTE: the hours count of ACCOUNT 72SH and ACCOUNT 72 are not supported. For the energies the product of the transformation ratios must be <1000-

7.2. STATUS_WATCHDOG

- Enabling WATCHDOG the data read must not be considered valid in the absence of declarations for more than 30 seconds.

Format:	8 bit: B ₅ N ₃		
octet nr	1		
field names	a	b	c d e f
encoding	B	B	B B N N N
Range:	a, b, c, d, e = {0,1}		
	f = {001b,010b,100b}		
Unit:	none		
Resol.:	(not applicable)		
PDT:	PDT_GENERIC_01		
Datapoint Types			
ID:	Name:	Encoding:	Use:
6.020	DPT_Status_Mode3	A,B,C,D,E: 0 = set 1 = clear FFF 001b = mode 0 is active 010b = mode 1 is active 100b = mode 2 is active	FB

STATUS

A	ONLINE
B	DELAY
C	NOT READY
D	NOT FOUND
E	---
FFF	MODE 0 (fixed)

WATCHDOG

A	---
B	---
C	---
D	---
E	WATCHDOG
FFF	MODE 0 (fixed)

Ex: device ONLINE -> status = 0b01111001

Example: watchdog declaration -> 0b11110001

7.3. Configure the thresholds for the automatic transmission of the values of data points on the network.

- The types of thresholds are applicable :

a) On real type values

1.1.2 IF1KNX > Configuration > Thresholds

+ Devices selection - Configuration General Thresholds	Phase Voltage 1:	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
		<input type="text" value="40"/> [%]
	Phase Voltage 2:	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
	Phase Voltage 3:	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
	Phase current 1:	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled

In the above example, the setting of 40‰ means 4% on voltage 1. If the value of this quantities exceeds or goes lower than the previous value, there will be an automatic issue of the data point value on the network.

This value is settable between 1 and 1000 ‰ and to have effect, the choice must be enabled.

b) On accumulated quantities

Thresholds	Positive active energy (Wh):	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
	Positive active energy (kWh):	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
	Positive reactive energy (Varh):	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
	Positive reactive energy (kVarh):	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled

This type of thresholds is allowed to be enabled or disabled.

If enabled, any variation of the quantity produces the automatic transmission of the data point on the network.

Be careful : all thresholds, once set and enabled, are applied to all devices on the network. For instance, the threshold on V1 is valid for all devices on the network.

8. CONFORMITY AND CERTIFICATIONS

Insulation:

- Measurement categories: III
- Level of pollution: 2
- Insulation voltage, U_i : 300V, Phase-Neutral

Dielectric rigidity: 2,8kV

In compliance with the standards:

- Conformity with the Directive on electromagnetic compatibility (EMC) No. 2014/30/EU
- Conformity with the low-voltage Directive No. 2014/35/EU
- Electromagnetic compatibility: EN 50491-5-2
- Safety: EN 63044-3 / EN 50491-3

Respecting the environment – Conformity with the CEE directives:

- Conformity with directive 2011/65/CE known as "RoHS 2" on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
- Conformity with the REACH regulation: at the date of publication of this document no substance in the list of candidates is found in these products.

Plastic materials:

- Plastic materials without Halogens.
- Part marking according to standards ISO 11469 and ISO 1043.
- Resistance to heat and fire according to standard IEC/EN 60695-212 incandescent wire test at 960°C.
- UL 94 / IECEN 60695-11-10 classification: V1

Packagings:

- Packaging designed and produced in accordance with Decree 98-638 of 07.20.98 and directive 94/62/CE