



IPxxx-, IL230x-B/C810 | Fieldbus Box modules for RS232



The RS232 input/output modules in the Fieldbus Box series use a simple, open serial communication protocol based on a master/slave architecture. It is quick and easy to implement for any serial interface, since only a few functions are required. Because of the low transmission rate, which has a maximum of 38.4 kbaud, this network is best employed in circumstances where low demands are placed on response time.

KS8000

The KS8000 communication library for Windows 2000/XP is available for communication with the Fieldbus Box modules. The library offers functions with which it is possible to establish a simple connection from PC applications via the serial PC interface to the Fieldbus Box modules. The OCX interface can be utilised within any programming language that works with the specifications of the Component Object Model (COM) from Microsoft (e.g. Visual Basic, Visual C, Delphi, Java, etc.). The KS8000 library also has a DLL interface for any other C/C++ programs. KS8000 LV also makes an interface available for the graphical programming system LabVIEW from National Instruments.

Multiplexer function

As an additional operating mode, autonomous master/slave communication can be established between two serial Fieldbus Box modules. The input data from one device are copied directly to the outputs of the other, without the aid of an additional master – and vice versa. This kind of communication does not require any extensive configuration – it is only necessary for the node addresses to be appropriately selected.

Configuration

The node address is set in the range from 1 to 69 using two decimally coded rotary switches. The transmission rate is set to 38,400 baud by default. Like the other system parameters, it can be altered if required using the KS2000 software tool through the serial configuration interface of the Fieldbus Box.

Diagnostics

A status byte is transmitted with each telegram, providing information about the node and communication states. The status of the network connection, the device status, the status of the inputs and outputs and of the power supply are displayed by LEDs.

Compact Box

Compact Box modules with serial interfaces are available for all relevant industrial signals. In addition to digital and analog input and output modules including thermocouple and RTD inputs, there are also incremental encoder interfaces available for displacement and angle measurement in addition to serial interfaces to solve a large number of communication tasks.

Coupler Box

The serial Coupler Box gathers the I/O data from the Extension Box modules over the interference-free IP-Link fibre optic cable. It detects the connected modules and automatically allocates the input and output data to the process image. Both data consistency and a clear separation of input and output data are ensured. The Coupler Box has four digital inputs and four digital outputs. Other kinds of signals are available in the Extension Box.

PLC Box

The PLC Box is an intelligent RS232 coupler that can perform non-central decentralised processing of I/O data and execute control tasks. It has four digital inputs and four digital outputs. Up to 120 further Extension Box modules can be connected via IP-Link. The I/O data can be made available either to the local PLC program or to the supervising controller. The PLC Box is programmed using TwinCAT through the configuration interface.

System data	RS232 IPxxxx-B810, IL230x-B810, IL230x-C810
Number of I/O stations	1 (peer-to-peer connection)
Number of I/O points	depending on controller
Data transfer medium	shielded copper cable, 2 x 0.25 mm ²
Cable length	15 m
Data transfer rates	9.6 kbaud, 19.2 kbaud, 38.4 kbaud (default)
Software tool	KS8000: provides ActiveX control, DLL and LabView interfaces for Windows NT/2000/XP

Technical data	IPxxxx-B810	IL230x-B810, IL230x-C810
Extension modules	–	max. 120 with max. 512 byte input and 512 byte output data
Digital peripheral signals	according to I/O type	max. 960 inputs and 960 outputs
Analog peripheral signals	according to I/O type	max. 252 inputs and 252 outputs
Protocol	open, documented protocol	
Configuration possibility	via KS2000	
Bus interface	1 x M12 socket, 5-pin, B-coded	
Power supply	control voltage: 24 V DC (-15 %/+20 %); load voltage: according to I/O type	
Power supply connection	feed: 1 x M8 male socket, 4-pin; downstream connection: 1 x M8 female socket, 4-pin	
Box supply current	45 mA + current consumption of sensors, max. 0.5 A	
Auxiliary power current	according to I/O type	
Electrical isolation	control voltage/fieldbus: yes, control voltage/inputs or outputs: according to I/O type	
Weight	approx. 210 g	
Operating/storage temperature	0...+55 °C/-25...+85 °C	
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27	
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4	
Protect. class/installation pos.	IP 65/66/67 (conforms to EN 60529)/variable	
Approvals	CE, UL	

Accessories	
KS2000	configuration software for extended parameterisation
KS8000	Active-X control, DLL and LabView interface
TX1200	programming system conforms to IEC 61131-3
Cordsets	cordsets and connectors

System	
RS232	For further RS232 products please see the system overview .

Compact Box

The Compact Box modules for RS232 offer a wide range of I/O functionalities. All relevant industrial signals are supported. The digital inputs and outputs can be connected either with snap type 8 mm diameter plugs, screw type M8 or M12 connectors. For analog signals the M12 version is used.

IPxxx-B810	Compact Box for RS232 systems	Plug
Digital input		
IP1000-B810	Compact Box, 8 digital inputs 24 V DC, 3.0 ms filter	8 mm
IP1001-B810	Compact Box, 8 digital inputs 24 V DC, 3.0 ms filter	M8
IP1002-B810	Compact Box, 8 digital inputs 24 V DC, 3.0 ms filter	M12
IP1010-B810	Compact Box, 8 digital inputs 24 V DC, 0.2 ms filter	8 mm
IP1011-B810	Compact Box, 8 digital inputs 24 V DC, 0.2 ms filter	M8
IP1012-B810	Compact Box, 8 digital inputs 24 V DC, 0.2 ms filter	M12
IP1502-B810	Compact Box, 2 up/down counter, 24 V DC, 100 kHz	M12
Digital output		
IP2000-B810	Compact Box, 8 digital outputs 24 V DC, I _{MAX} = 0.5 A	8 mm
IP2001-B810	Compact Box, 8 digital outputs 24 V DC, I _{MAX} = 0.5 A	M8
IP2002-B810	Compact Box, 8 digital outputs 24 V DC, I _{MAX} = 0.5 A	M12
IP2020-B810	Compact Box, 8 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 4 A)	8 mm
IP2021-B810	Compact Box, 8 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 4 A)	M8
IP2022-B810	Compact Box, 8 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 4 A)	M12
IP2040-B810	Compact Box, 8 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 12 A)	8 mm
IP2041-B810	Compact Box, 8 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 12 A)	M8
IP2042-B810	Compact Box, 8 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 12 A)	M12
IP2512-B810	Compact Box, 2 digital pulse width outputs 24 V DC, I _{MAX} = 2.5 A	M12
Digital combi		
IP2300-B810	Compact Box, 4 digital inputs 24 V DC, 3 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 0.5 A	8 mm
IP2301-B810	Compact Box, 4 digital inputs 24 V DC, 3 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 0.5 A	M8
IP2302-B810	Compact Box, 4 digital inputs 24 V DC, 3 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 0.5 A	M12
IP2310-B810	Compact Box, 4 digital inputs 24 V DC, 0.2 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 0.5 A	8 mm
IP2311-B810	Compact Box, 4 digital inputs 24 V DC, 0.2 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 0.5 A	M8
IP2312-B810	Compact Box, 4 digital inputs 24 V DC, 0.2 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 0.5 A	M12
IP2320-B810	Compact Box, 4 digital inputs 24 V DC, 3 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 4 A)	8 mm
IP2321-B810	Compact Box, 4 digital inputs 24 V DC, 3 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 4 A)	M8
IP2322-B810	Compact Box, 4 digital inputs 24 V DC, 3 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 4 A)	M12
IP2330-B810	Compact Box, 4 digital inputs 24 V DC, 0.2 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 4 A)	8 mm
IP2331-B810	Compact Box, 4 digital inputs 24 V DC, 0.2 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 4 A)	M8
IP2332-B810	Compact Box, 4 digital inputs 24 V DC, 0.2 ms filter, 4 digital outputs 24 V DC, I _{MAX} = 2 A (Σ 4 A)	M12
IP2400-B810	Compact Box, 16 digital combination inputs/outputs 24 V DC, 3 ms filter, I _{MAX} = 0.5 A	8 mm
IP2401-B810	Compact Box, 16 digital combination inputs/outputs 24 V DC, 3 ms filter, I _{MAX} = 0.5 A	M8
Analog input		
IP3102-B810	Compact Box, 4 differential analog inputs ±10 V, 16 bit	M12
IP3112-B810	Compact Box, 4 differential analog inputs 0/4...20 mA, 16 bit	M12
IP3202-B810	Compact Box, 4 analog inputs for resistance thermometer (RTD), PT100...1000, Ni100, 16 bit	M12
IP3312-B810	Compact Box, 4 analog inputs for thermocouple, types J, K, L, B, E, N, R, S, T, U, 16 bit	M12
Analog output		
IP4112-B810	Compact Box, 4 analog outputs 0/4...20 mA, 16 bit	M12
IP4132-B810	Compact Box, 4 analog outputs ±10 V, 16 bit	M12
Special functions		
IP5009-B810	Compact Box, 1 SSI encoder interface	M23
IP5109-B810	Compact Box, 1 incremental encoder interface with complementary inputs, 1 MHz	M23
IP5209-B810	Compact Box, 1 SinCos encoder interface, 1 V _{SS}	M23
IP6002-B810	Compact Box, 1 serial interface RS232C	M12
IP6012-B810	Compact Box, 1 serial interface, 0...20 mA (TTY)	M12
IP6022-B810	Compact Box, 1 serial interface, RS422, RS485	M12

Coupler Box

The Coupler Box for RS232 has four digital inputs and four digital outputs, optionally with snap type 8 mm diameter connectors, screw type M8 or M12 connectors. Up to 120 Extension Box modules can be connected via the IP-Link communication facility.

IL230x-B810	Coupler Box for RS232 systems	Plug
Digital combi		
IL2300-B810	Coupler Box, 4 digital inputs 24 V, 3 ms filter, 4 digital outputs 24 V, 0.5 A	8 mm
IL2301-B810	Coupler Box, 4 digital inputs 24 V, 3 ms filter, 4 digital outputs 24 V, 0.5 A	M8
IL2302-B810	Coupler Box, 4 digital inputs 24 V, 3 ms filter, 4 digital outputs 24 V, 0.5 A	M12

PLC Box

The PLC Box for RS232, programmable in accordance with IEC 61131-3, has four digital inputs and four digital outputs, optionally with snap type 8 mm diameter connectors, screw type M8 or screw type M12 connectors. Up to 120 Extension Box modules can be connected via the IP-Link communication facility.

IL230x-C810	PLC Box with controller IEC 61131-3 for RS232 systems	Plug
Digital combi		
IL2300-C810	PLC Box, 4 digital inputs 24 V, 3 ms filter, 4 digital outputs 24 V, 0.5 A	8 mm
IL2301-C810	PLC Box, 4 digital inputs 24 V, 3 ms filter, 4 digital outputs 24 V, 0.5 A	M8
IL2302-C810	PLC Box, 4 digital inputs 24 V, 3 ms filter, 4 digital outputs 24 V, 0.5 A	M12

System overview

