X-LINE Testing Device STB 01X.

Manual.

SCHRACK

S E C O N E T

Table of Contents

1 General

This user manual describes the standard functions and operating processes that can be undertaken using the STB 01X testing device.

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2 Display and Key Functions

2.1 Overview

The STB 01X is used to simply check an installed Integral loop circuit or X-LINE without a fire alarm control panel being attached. Data for up to 1,000 loop circuits can be saved on the built-in SD memory card and then supplied in XML data format using a converter. The STB 01X is supplied with power using a mains power supply. Firmware updates can be carried out very easily using the software tool and the available USB interface. Due to this function it is necessary to reset the unit prior to use (by pressing the reset button).
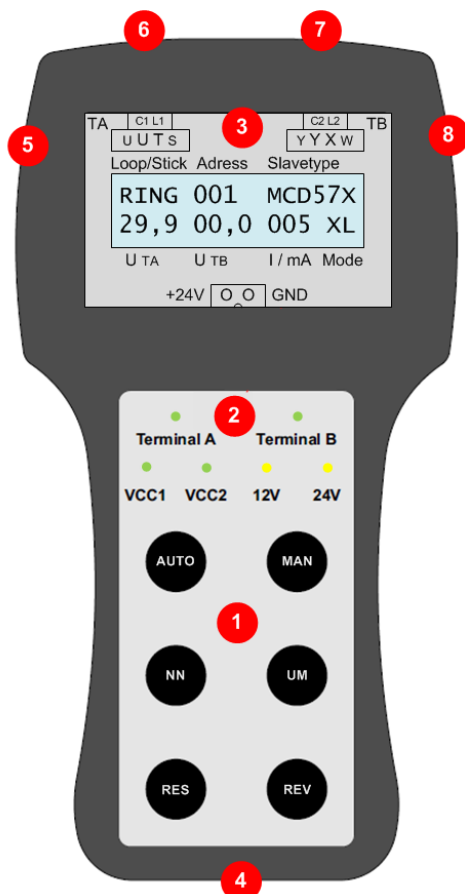
(1) Function keys
(2) Operational status and fault indicators
(3) LCD display (illuminated)
(4) Mains power supply connection
(5) USB connection
(6) Loop circuit connection (A)
(7) Loop circuit connection (B)
(8) SD card slot

2.2 Operational status and fault indicators

The operational status and fault indicators (2) give an overview of the current system status.
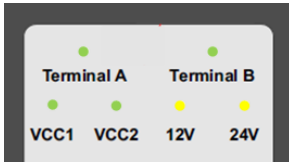
|	
Terminal A	The green LED is lit when the loop is starting to be read in.
Terminal B	The green LED is lit when the loop has finished being read in.
VCC1	Green LED: shows the state of the loop power supply voltage from terminal A as being ready for operation.
VCC2	Green LED: shows the state of the loop power supply voltage from terminal B as being ready for operation.
12V	Yellow LED: lit when 12V operation voltage has been changed over to.
24V	Yellow LED: lit when 24V operation voltage has been changed over to (standard setting).

2.3 Display

The LCD display shows all important information about the loop circuit.
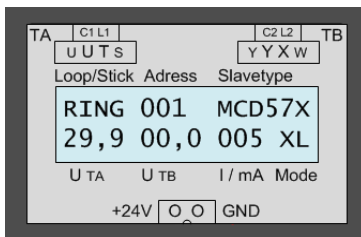
Loop/Stub	Displays whether the connected loop devices are on a loop or a stub (in the case of a stub line, then the number of the stub line is also shown.).
Address	Address of the current loop circuit device.
Slave type	Type label for the current loop circuit device (max. 6 characters in plain text).
UTA	Supply voltage to terminal A in volts after starting-up the current loop technology device.
UTB	Supply voltage to terminal B in volts after starting-up the current loop technology device.
I/mA	Indication of the loop circuit current in mA.
MODE	Displays whether the device is an X-LINE or loop circuit device.

If a loop technology device is detected on an X-LINE or the device does not conform to X-LINE specifications, then this device is switched to backward compatibility mode. The it is switched back to X-LINE mode. It should be noted, that for technical reasons, it is not possible to limit the number of devices to 128 in backward compatibility mode.

2.4 Keys
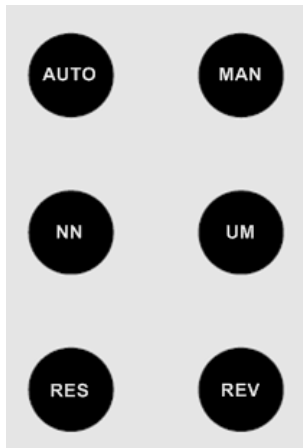
AUTO   automatic start: all loop technology devices are started fully auto-matically. No further user input is necessary.

MAN   manual start: every additional loop technology device is only started once the users has pressed the key. If the device contains an LED then it is actuated.

NN   As long as this key is pressed, then the reading in of the loop is accelerated.

UM   Voltage range toggling: the operating voltage is toggled between 12V (EMA) and 24V (BMA). Toggling the voltage is no longer possible once initialisation has been carried out. The toggle function is only available after a reset has been carried out.

RES   Reset: the STB 01X is reset to its basic start.

REV   Revision mode: the entire loop circuit is started first of all and then the revision mode is activated.

⚠️	The device must be reset (by pressing the reset key) prior to every use!

3 Interfaces

3.1   Power supply

The 2 pole connector (4) is used for connecting the external power supply unit (mains power supply). 24 VDC is required for operating the STB 01X. The maximum current uptake is not limited internally.

3.2   USB connection

The USB interface (5) is used for connecting an external PC. The bit stream of the loop circuit can be recorded using a terminal program. This interface is also used for updating the STB 01X's detector database and firmware.

3.3   Loop circuit connection A

The 4 pole connector (6) is used for connecting a loop circuit to terminal A.

Clip	Function, Purpose	Signal Limitation
Clip S	Supply lines (3rd wire)	+12/24 V DC
Clip T	X-LINE, DATA supply line, L1	+ (30 V-DC)
Clip U	X-LINE, GND supply line, C1	-
Clip U	X-LINE, GND supply line (4th wire)	-

3.4   Loop circuit connection B

The 4 pole connector (7) is used for connecting a loop circuit to terminal B.

Clip	Function, Purpose	Signal Limitation
Clip W	Supply: return line (3rd wire)	+12/24 V DC
Clip X	X-LINE DATA return line, L2	+ (30 V-DC)
Clip Y	X-LINE GND return line, C2	-
Clip Y	X-LINE, GND supply line (4th wire)	-

3.5   Connection slot for SD memory card

The SD card (8) is used for logging loop circuit communications. SDTM and SDHCTM cards with up to 4 GB capacity are supported. It is preferable, however, to used the supplied SDHCTM card.

4 Checking the Installation (Ring/Stub)

An installation can either be carried out as a stub line or as a loop circuit. The only difference in checking is that for a stub line installation there is only a connection to terminal A. Thereafter the functions of the testing device are explained using a loop circuit installation. These functions are also available for stub lines.

> ⚠ Once the testing of a stub line has been finished, the message "Timeout RING" is displayed. The data is however only saved once the "RES" key is pressed.

Then the loop circuit must be connected to terminals A and B. Then the power supply circuit must be connected and the RES key pressed. In order to then check the installation of a loop circuit, the following three possibilities exist:

4.1 Automatic Mode

The automatic mode gives the user the possibility to check the existing loop circuit installation automatically for wire breaks and short circuits.

1. In automatic mode, first of all, the connected loop circuit is started. If the start-up process has been successfully carried out, then every recognised device in the loop circuit is displayed for a few seconds (the display shows the current device address).
2. If a fault is detected in the installation (wire break, short circuit) then this is indicated on the display.
3. After all the devices have been worked thorough, the automatic mode of the STB 01X is ended and the number of devices that have been found is indicated.
4. The testing device must be reset back to the basic status for further tests using the RES key.

4.2 Manual Mode

The manual mode gives the user the possibility to check the existing loop circuit installation manually for wire breaks and short circuits.

1. In manual mode, first of all, the connected loop circuit is started. If the start-up process has been successfully carried out, the first recognised device in the loop circuit is displayed (the display shows the current device address).
2. On this device, if available an output or an LED is actuated for checking purposes. It is thereby possible to check not just whether a device is functioning properly, but also the location of the loop circuit device.
3. Each time the MAN key is pressed, then the device switches to the next loop circuit device. This process must be repeated as many times as is necessary until all devices have been checked.
4. If a fault is detected in the installation (wire break, short circuit) then this is indicated on the display.
5. After all the devices have been worked thorough, the manual mode of the STB 01X is ended and the number of devices that have been found is indicated.
6. The testing device must be reset back to the basic status for further tests using the RES key.

4.3   Revision mode

The revision mode gives the user the possibility to check whether the loop technology devices are functioning properly.

1. In revision mode, first of all, the connected loop circuit is started. If the start-up process has been successfully carried out, the first device in the loop circuit that can be place into revision is activated (the display shows the current device address).

2. On this device, if available an output or an LED is actuated for checking purposes. It is thereby possible to check not just whether a device is functioning properly, but also the location of the loop circuit device.

3. If an input or manual call point is operated on this loop technology device which is in revision mode, or if the loop technology device is actuated using suitable agents (heat, testing gas) then the output or the LED is switched off.

4. The input/manual call point should be returned to idle mode again, with no action required for an automatic detector.

5. The output/LED will switch on again after a few seconds.

6. Only once this output/LED has turned off again is the next loop technology device activated in revision mode.

7. After all devices that can be placed in revision have been gone through, the revision mode is automatically ended by the STB 01X.

8. The testing device must be reset back to the basic status for further tests using the RES key.

5 Date conversion to XML

The XML converter converts the *.stb files of the STB 01X into XML files. These files can then be processed further in the Integral software.

5.1 System Requirements

- from Integral Software V7.3
- x86 compatible PC
- 10 Mb free hard disk space
- Microsoft Windows 32 bit operating system
- Mouse or touchpad

The installation of the file conversion software takes place automatically when installing Integral Software V7.3 and higher. A manual installation can be carried out by taking the following steps.

5.2 Installation

The software is installed using a setup program. The setup.exe file must be run to do this and the instructions given by the installation assistant then observed.

Enter the destination folder in which the program should be installed.

Click on "next" to continue.

Select whether the setup program should automatically create a shortcut on the desktop.

The installation process is started by clicking on "next" and then "install".

At the end of the installation process the program can be started immediately.

5.3   Operation

First the memory card with the files to be converted must be inserted with read access. Start the program "STB 01X Converter", to begin the conversion process. The conversion assistant can be ended at any time by clicking on "Cancel".

5.3.1   Selecting the source files

Select the folder in which the STB 01X files (*.stb) are located. The available STB 01X files will appear in the right hand list once the source folder has been selected.

Select the files in the file list that are to be converted. Several files can be selected and converted at once.
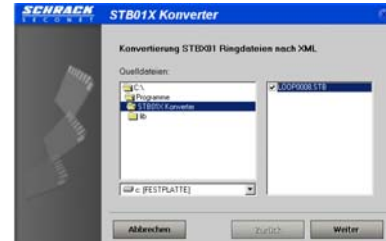
5.3.2   Destination Folder and Conversion Parameters

Select the folder in the folder and drive list, in which the converted files should be saved. A new folder name can be entered in the input field on the right hand side. This will then appear as a subfolder of the folder selected in the folder list.

The selection is finalised by clicking on "next".

5.3.3   Set conversion parameters and finish conversion

A prefix can be set which is placed in front of the filenames of the converted files. If a prefix is not entered, then the converted files will have the same filenames as the STB01X files apart from the filetype ending. They are then <filename>.xml. The prescribed prefix refers to all selected files in the current conversion process.

In addition it is also possible to determine whether files that are already contained in the destination folder should be overwritten. If the files should not be overwritten, then a new destination folder or filename must be chosen.

By clicking "back" you get back to the dialogue box (selecting the destination folder).

By clicking on "next" the assistant will show an overview of the selected files and the data conversion can be started by clicking on "Finish".

This process usually lasts a few seconds and a progress indicator is displayed.

Once the conversion process has ended, the program is closing by clicking on "Close". The program must be started again for a new conversion.

6 Firmware Update

For the STB 01X there is the possibility to carry out a firmware update over the USB interface. Two firmware files are installed on the STB 01X after one another using the serial Bootloader. Please observe the following sequence:

- Database (DATABASE_x.xx.xx.hex)
- Firmware (Firmware_x.xx.xx.hex).

Instructions:

First install the update software on the PC.

- Filename: Serial Bootloader AN1310 v1.05r.exe

1. Connect the STB 01X (driver required for use with Windows 7, 64 Bit)
2. Start update software
   - File path: C:\Microchip Solutions\Serial Bootloader AN1310 v1.05\AN1310ui.exe
3. Setup update software
   - Tab: Program → Settings [F12]

   - COM port: Select the virtual connection generated by the system → USB/Serial Port (COM x)
   - Bootloader Baud Rate: Setting → 115200 bps

4. Establish the connection
   - Tab: Program → Break/Reset Mode [F3]
   - Press the reset button on the STB 01X
   - Tab: Program → Bootloader Mode [F4]
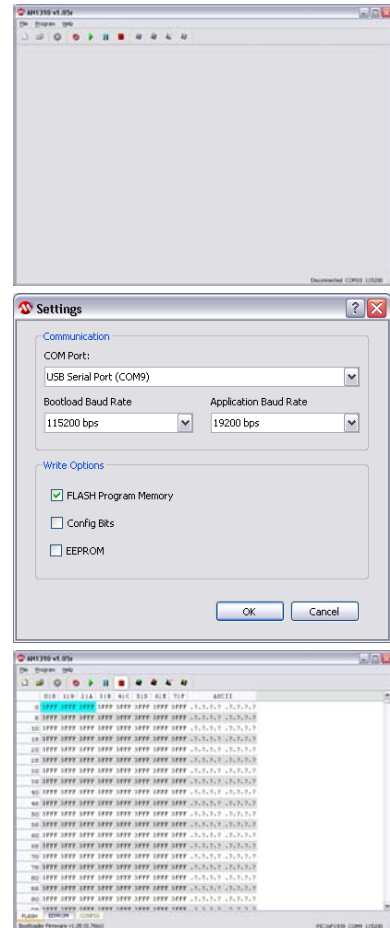
> ⚠ This part of the program may have to be executed several times in order to ensure that the connection is established correctly!

5. Firmware Update
- Tab: File → Open [CTRL+O]
  Select the required file (.hex) and confirm
- Tab: Programm → Write Device [F6]
  The duration of the transfer and programming process lasts
  approx. 20 seconds
- Tab: Programm → Run Mode [F2]
- STB 01X - Display → EEPROM filled
- Repeat these operational steps for firmware update
- STB 01X - Display → V3.01.20
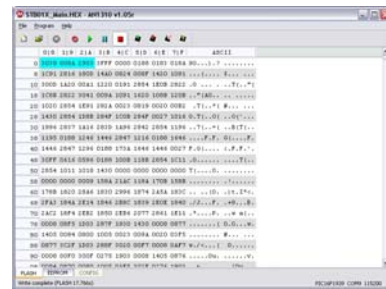
6. Exit
- Close the program and remove the STB 01X

7 Brief Operation Instructions for AUTO mode

Switch on

Power supply plug

Press the RES button

RES

Unit ready

TA	C1 L1				C2 L2		TB
	u U T s				Y Y X w		

Loop/Stick Adress   Slavetype

SecuriLineTester
v.: 3.01.20

U TA   U TB   I / mA Mode

+24V O O GND

Connecting loop

Inlet   Return

TA	C1 L1		C2 L2		TB
	u U T s		Y Y X w		

Press AUTO button
optional **MAN-button**
In the MAN mode every
additional loop technology
device is only started once the
users has pressed the key. If
the device contains an LED
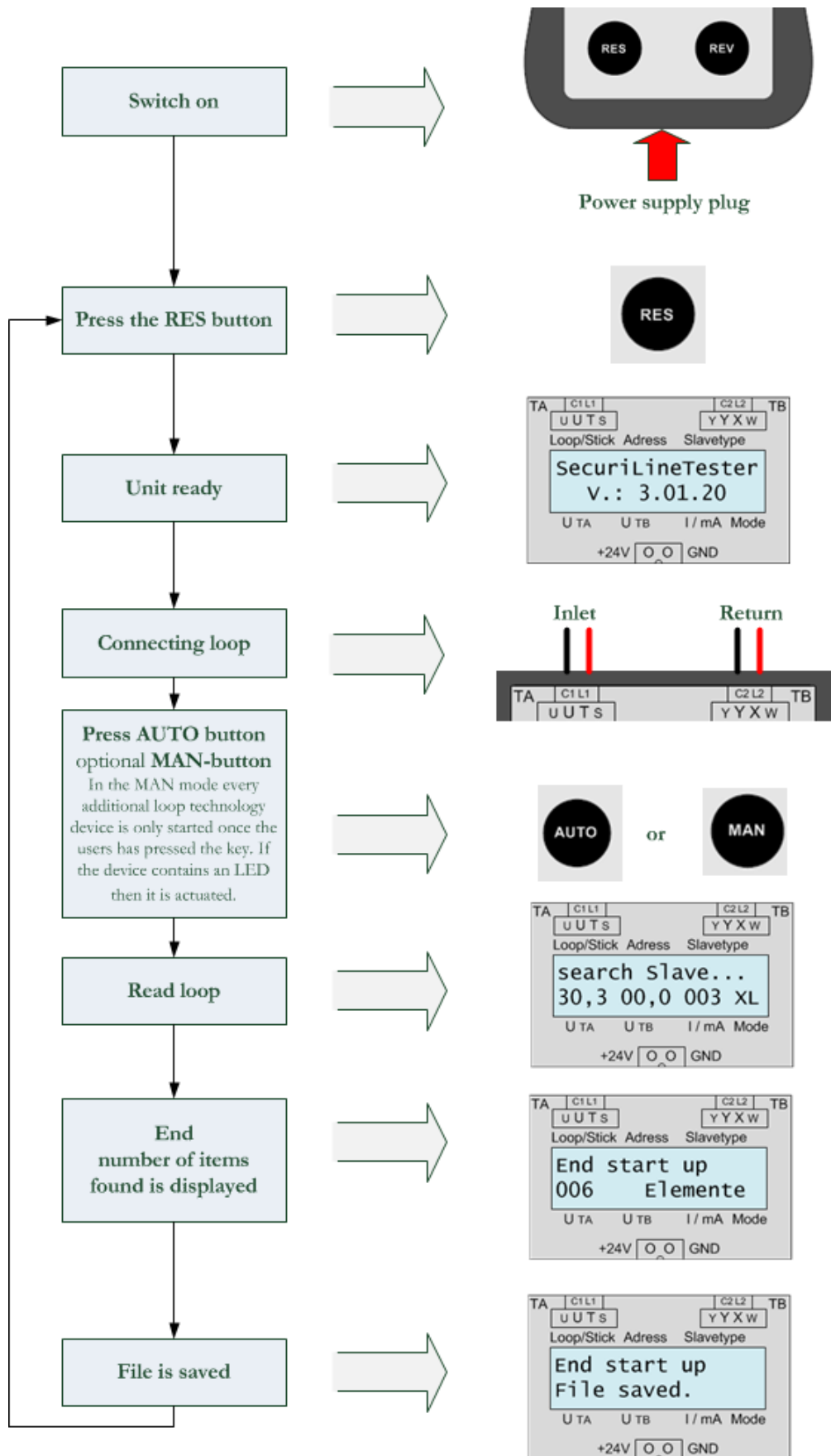then it is actuated.

AUTO   or   MAN

Read loop

TA	C1 L1				C2 L2		TB
	u U T s				Y Y X w		

Loop/Stick Adress   Slavetype

search slave...
30,3 00,0 003 XL

U TA   U TB   I / mA Mode

+24V O O GND

End
number of items
found is displayed

TA	C1 L1				C2 L2		TB
	u U T s				Y Y X w		

Loop/Stick Adress   Slavetype

End start up
006   Elemente

U TA   U TB   I / mA Mode

+24V O O GND

File is saved

TA	C1 L1				C2 L2		TB
	u U T s				Y Y X w		

Loop/Stick Adress   Slavetype

End start up
File saved.

U TA   U TB   I / mA Mode

+24V O O GND

8 Key Indicators on Display

| Indicator on Display	Notification Type / Description
Timeout Loop	A loop break has been detected before the displayed position, e.g.: RING 001 FAULT Timeout Loop = Loop break before the 1st detector or module
Detector Parallel	A parallel connection of identical detector slaves has been detected. Remedy: remove and reinsert the detectors on the displayed position an on the position before. After repeated retrials change the base!
Error message	A telegram failure has been detected - most reliable a parallel connection of unequal slaves. Remedy: remove and reinsert the detectors before the displayed position. After repeated retrials change the base!
Short Circuit Line	A short circuit on the loop line has been detected.
Number of stitches!	The max. possible number of stiches has been exceeded.

9 Shield test

> ⚠️ The specified shield line of the X-LINE won't be tested with the STB 01X!
>
> It is strongly recommended that the correct connection of the shield wire measured by manual resistance check.

The review of the shield line by measuring the volume resistance of the loop shield and measurement of insulation resistance. When measuring any standard multimeter is suitable.
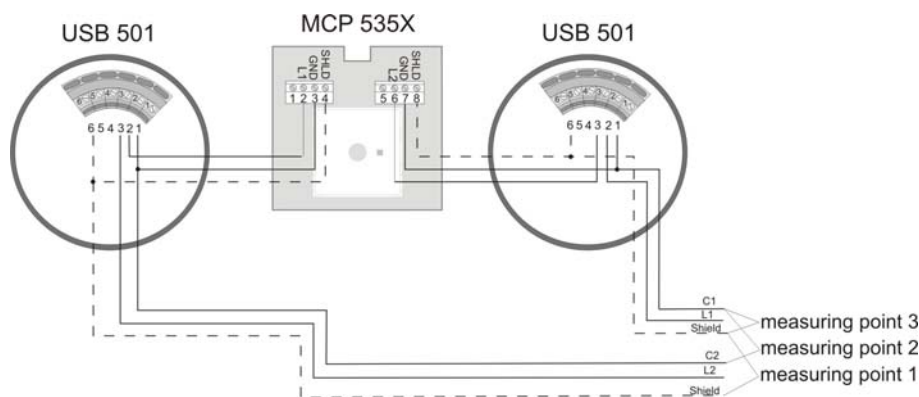
1. The X-LINE may not be connected to the X_LINE interface of the FAS or the STB 01X!
2. Measuring the resistance of the X-LINE between the beginning (C1) and the end of the loop line and shield wires at the beginning and end of line. In twisting of the specified X-LINE standard cable, the resistance of the shielding in about twice the resistance of the C-C veins.
3. Final step, the resistance value between C-wire and shield wire and between the shield wire and ground to be measured. Both values must be high impedance (> 1 MOhm).

10 Supported loop devices

Loop circuit device	Description	X-LINE device
BA-AIM	Branch module	BX-AIM
BA-FOL	Flashing lights	BX-FOL
BA-IM 4	Input module	BX-IM 4
BA-IOM	Input/Output module	BX-IOM
BA-O2I4	Input/Output module	BX-O2I4
BA-OI2	Input/Output module	---
BA-OI3	Input/Output module	BX-OI3
BA-REL 4	Relay module	BX-REL 4
BA-RGW	Radio receiver module	BX-RGW
BA-SBL	Loop siren	BX-SBL
BA-SOL	Loop siren	BX-SOL
MCP 535	Manual call points	MCP 535X
MCP 545	Manual call points	MCP 545X
MTD 533	Multiple sensor detector	MTD 533X
SDI81	Input and output module	---
SDI82	Input and output module	SDI82X
SLM 35	SoBT controller	XLM 35
STD 531	Multiple sensor detector	---
UTD 531	Temperature detector	---
SSD 531 (A)	Smoke detectors	---
MSD 533	Smoke detectors	---
UTD 533	Temperature detector	---
---	Terminal position switching module	BX-ESL

11 Technical Specifications

Operating voltage	20 to 30 V
Current uptake (without external devices)	110 mA
Loop circuit operating voltage (supply 3rd wire)	12 or 24 V
Protection class in accordance with IEC 529 / EN 60529 (1991)	IP 20
Environmental conditions in accordance with IEC 721-3-3 / EN 60721-3-3 (1995)	
Ambient temperature:	+5 to +40 °C
Connection clips:	1.5 mm² can be connected
Case material:	Polyamide
Case colour:	RAL 7021
Dimensions (H x W x D)	220 x 116 x 60 mm
Weight (without power supply):	480 g

Manual X-LINE Testing Device STB 01X • V 1.1

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