



1105

LOOP TESTER

Fire alarm solutions
technical description

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1. INTRODUCTION

This document describes the Loop tester, type number 1105.

The document contains information about the product and instructions on how to connect and use it.

2. ABBREVIATIONS

CIE	Control and indicating equipment	= control unit
SSD	Site Specific Data	= configuration
S/W	Software	= system program

3. GENERAL DESCRIPTION

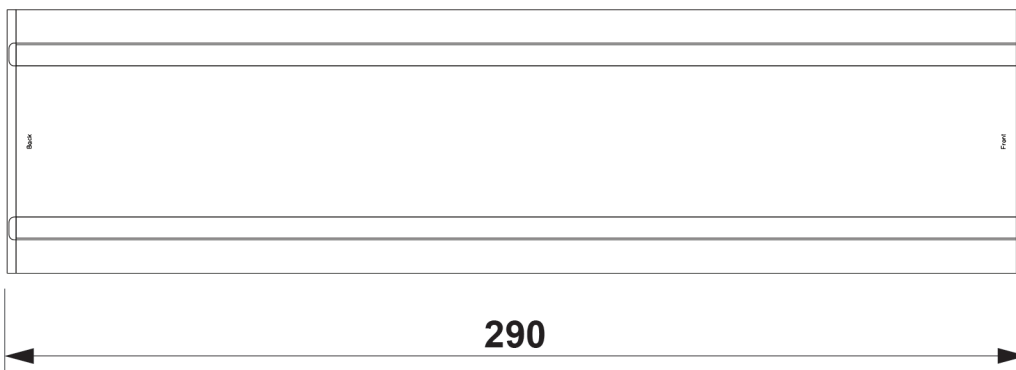
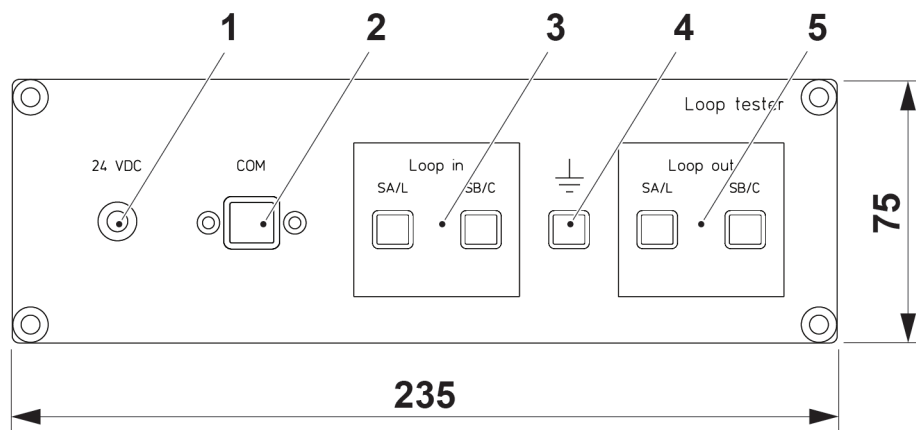
The loop tester can be used for testing, fault-search, and commissioning of a COM loop, before the CIE is installed.

The loop tester is connected between the COM loop and a PC, and allows the user to quickly verify the cabling and loop units during the installation. A report for documentation of the COM loop installation can be created and signed.

The scan loop function in EBLWin will find all units, except expansion boards, that are connected on the selected COM loop. A SSD file can be created with the units that are scanned on the COM loop.

The loop tester can also be used for auto addressing of COM loop units.

The unit is intended for indoor use and in dry premises.



(Measure in mm)

1. 24 V DC
2. USB port for communication with a PC
3. COM Loop in
4. Earth
5. COM Loop out

3.1. POWER

The loop tester is powered with 24 V DC (nominal).
A 24 V DC adapter is included.

Voltage	Allowed Normal	23.5 – 24.5 V DC 24 V DC
Current	Max Min (internal)	700 mA 80 mA

3.2. COM LOOP

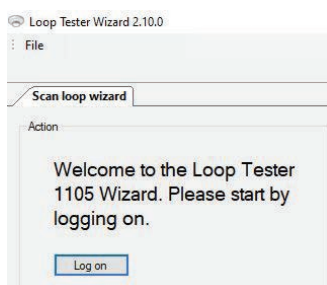
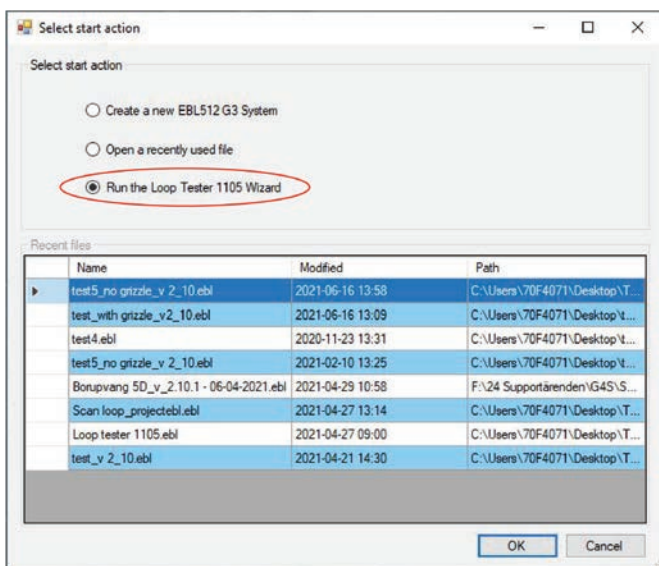
The loop tester has terminals to connect the wires of the COM-loop (SA (L), SB (C), SA (L) and SB (C)).

The loop tester can detect an open circuit, L/C mix or short circuit on the COM-loop. The COM-loop will be powerless if the current outtake is too high.

Voltage		24.0 V DC
Current	Max outtake	350 mA

3.3. LOOP TESTER 1105 WIZARD

From version EBLWin 2.10.0, the Loop tester 1105 Wizard can be selected on the EBLWin startpage. The wizard will guide the user through the scan loop and auto address procedure.

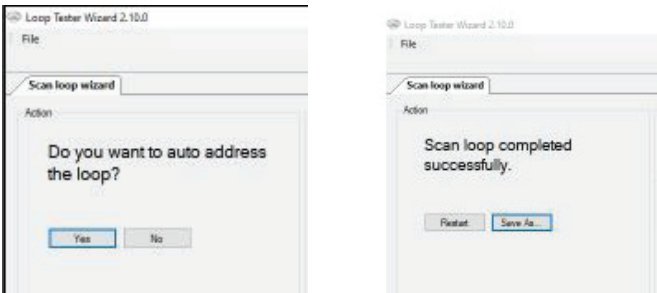


Log on to the Loop tester.

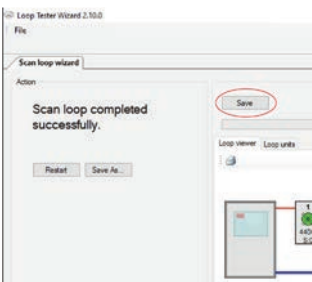
It is possible to auto address units with and/or without short circuit isolators.

The auto addressing will be finalized by a “scan loop” procedure.

Click “Save as” to save the loop as a XML-file. Choose a name so that it’s easy to identify the control unit/loop number.



Click “save” to generate a report and save it as a PDF.



The report will include information about the loop units; current consumption, technical number, sequence number, serial number. Also a graphical illustration of the loop.

CU 0, Loop 0 - Scan loop
Result: Scan loop completed successfully.

Summary of loop units

Type	Amount	Quiescent consumption	Max consumption
MCP 4433-4439	1	1,6	15,7
VAD 4482	1	2,5	27,0
ASD 4400	3	1,0	4,0
Total	5	5,1	55,7

Loop units

Technical number	Sequence number	Serial number	Loop
000001	0	119081303123	001: AMD 4400 (Advanced mode) [001-011]
000002	1	519081303132	002: AMD 4400 (Advanced mode) [001-011]
000003	2	619081303129	003: AMD 4400 (Advanced mode) [001-011]
000004	3	3811 SE 5025	004: Visual alarm device with open 4x87
000005	4		005: MCP 4433-4439 [001-011]

4. SET THE COM LOOP ADDRESS

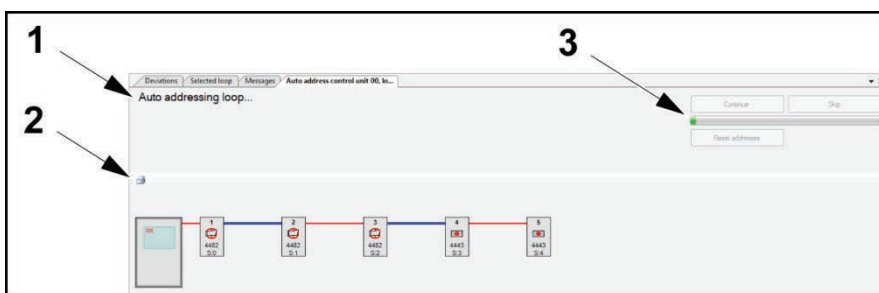
Each COM loop unit has to have a unique COM loop address (001-253). The address is manually set with the Address Setting Tool (4414), or by the auto addressing function in EBLWin.

The COM loop units can be set in different modes, for example Advance mode or NORMAL mode. Set the mode with the address setting tool (4414). The auto addressing function will keep the default mode for each addressable unit.

The units function different depending on the mode setting. Make sure to set the units in the correct mode.

4.1. AUTO ADDRESSING

Automatic addressing via EBLWin.



1. Wizard text
2. Print
3. Progress bar

4.1.1. GENERAL

Routine for automatically setting addresses on a loop with units that have isolators.

Units without isolators may be connected if they already have an address in the upper address span, 129-248, set by the address setting tool. Alternatively (for units in bases) they could be connected later and be addressed automatically by a separate routine: 'Adding units without isolators'.

All units with isolators must have default address before starting the routine of auto address setting. All units have default address from factory. Units with isolators gets address 1 to 128 with auto address routine.

Units without isolators must have address 129 to 248.

The wizard text will guide the user through the auto address procedure. Click 'Start Wizard' to begin.

The 'Auto address' wizard will go through the following steps;

- Start
- Auto address loop units with short circuit isolators
- Auto address loop units without short circuit isolators

For more information, see the Planning Instructions for the system.

4.1.2. LIMITATIONS

There are some limitations for the COM loop units:

- Units with isolators must have default address
- Units without isolators must have address 129 to 248, if they already have an address.
- Wireless base stations 4620 must have address 144, 161, 178 or 195
- Max 128 units with isolators
- Sounder base 4479 and Indicator 4418 consumes one address in the span of isolators

4.1.3. WORKFLOW FOR NEW INSTALLATIONS

a) Mount:

- units with isolators (default address)
- units without isolators (address set with address setting tool to 129-248), except 4400, 4401, 4402 which can be added by the 'Add loop units' procedure

b) Run 'Auto address' procedure. Follow the wizard in EBLWin.



After the auto address procedure, the wizard will also suggest 'check loop' procedure and 'create SSD'. If something in the procedure fails, correct the error and then try again.

4.1.4. ADD UNITS WITHOUT ISOLATORS

Procedure for automatically setting addresses on units without isolator:

- c) Connect the sockets/bases onto the COM loop.
- d) Connect the units one by one. The unit must have default address (factory setting).
- e) The units will be given an address from 129 to 248.

Only units connected to a socket/base are allowed. For other units the address must be set manually with the address setting tool.

4.2. MANUAL ADDRESSING

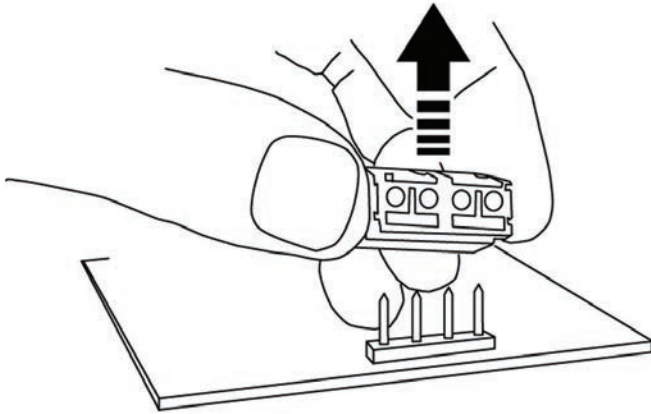
If auto addressing is not used, there is a possibility to manually set the address.

The COM loop address and mode settings have to be done before the unit is connected to the COM loop.

Each COM loop unit has to have a unique COM loop address (001-253). Use the Address setting tool (4414).

To manually address a unit, see each technical description respectively. This is an example:

- a) Make sure the unit is connected to the 24 V DC power supply or the batteries.
- b) Unplug the terminal block on the addressable unit.



- c) Connect the Address Setting Tool's SA and SB terminals with the SA and SB terminals of the addressable unit. Use the connection cable with crocodile clips.
- d) Set the address.

4.2.1. SET THE MODE

Set the mode to all units according to the Technical description for each unit.

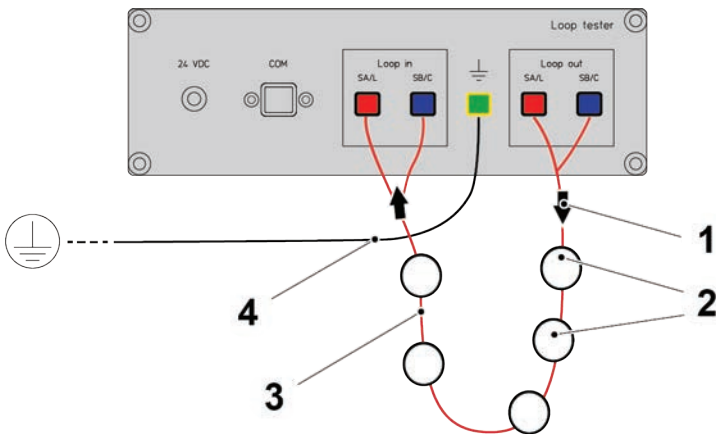
4.3. INSTALLATION AND WIRING

Connect the units to the loop according to the Technical description for each unit.

5. CONNECTING

This overview is an example of how the loop tester is connected. The COM loop is scanned in the A-direction, from Loop out to Loop in.

According to electrical safety standard EN 62368-1 must all signal cabling (i.e detector loops) remain in the same building.



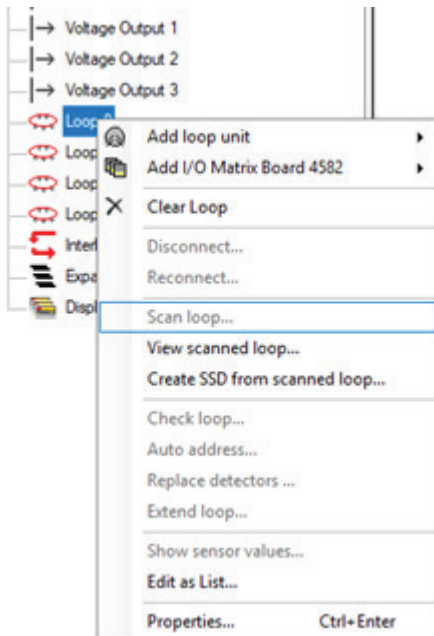
1. COM loop A-direction (Loop out)
2. Addressable COM-loop units
3. COM loop
4. Earth cable

Before use, ensure a proper connectivity to a protective earth point.

- a) Connect the Loop tester to earth. The cable should be connected to the closest earth point (protective earth), a maximum of 2 meter cable is recommended.
- b) Connect the Loop tester to the COM loop.
- c) Connect the main cable to 24 V.
- d) Connect the USB cable between the Loop tester and the PC.

6. IN EBLWIN

Some commands are disabled and greyed out if you have not logged on to the control unit.



6.1. SCAN LOOP

This overview is an example of how the loop tester is connected. The COM loop is scanned in the A-direction, Loop out to Loop in. The loop tester will find all units that are connected on the selected COM loop. The search is always performed in the A-direction.

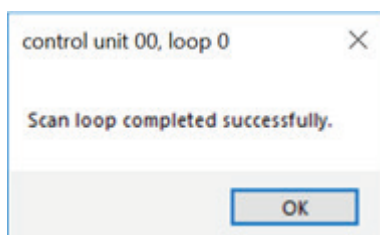
- a) Open EBLWin in your PC.

An EBLWin key 5094 is required to log on to EBLWin. This key is plugged in a USB-port in your PC / Laptop. Make sure you have the EBLWin key driver installed on your computer. The EBLWin key driver is available to download from our home page www.panasonic-fire-security.com.

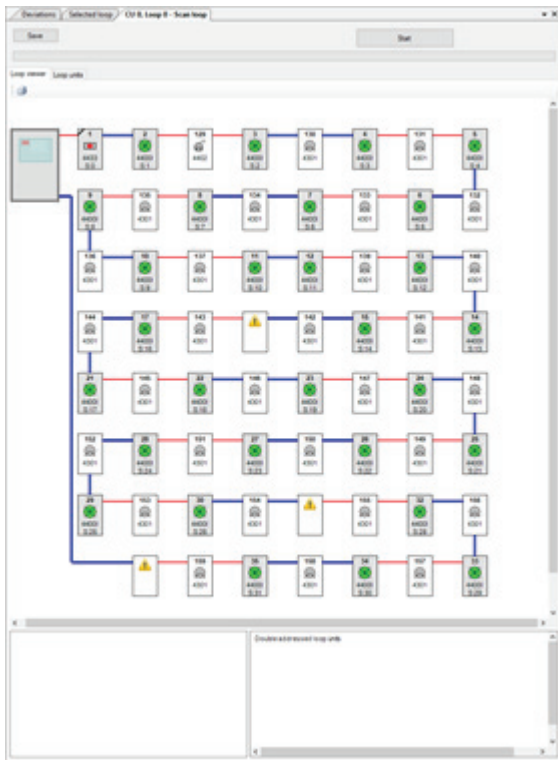
- b) Connect the PC to the USB connector in the Loop tester.
c) In EBLWin, go to Tools menu / Log on control unit...

From version EBLWin 2.10.0, the Loop tester 1105 Wizard can be selected on the EBLWin startpage. The wizard will guide the user through the scan loop and auto address procedure.

- d) In the Tree view to the left, right click on the loop.
e) Select Scan loop to start the scan loop function in EBLWin.
f) When the scan loop function is finalized without errors, the pop up dialog window 'Scan loop completed successfully' is shown.



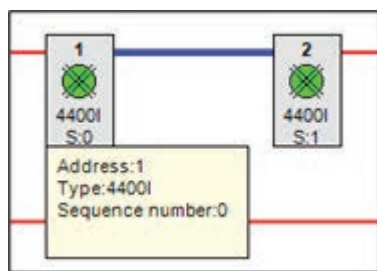
The result of the scan loop is shown graphically and in a list view.



Technical number	Sequence number	Serial number	Loop
00000	1	21770CC2198	001 MCF 4033 4438 (S1-01)
00002	1	001	MSD 4000 (Unbranded model) (S1-01)
00003	1	029	MSD 4000 (Unbranded model) (S1-01)
00004	2	001	MSD 4000 (Unbranded model) (S1-01)
00005	2	130	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00006	3	004	MSD 4000 (Unbranded model) (S1-01)
00007	3	131	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00008	4	009	MSD 4000 (Unbranded model) (S1-01)
00009	4	132	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00010	5	006	MSD 4000 (Unbranded model) (S1-01)
00011	5	133	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00012	6	007	MSD 4000 (Unbranded model) (S1-01)
00013	6	134	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00014	7	008	MSD 4000 (Unbranded model) (S1-01)
00015	7	135	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00016	8	009	MSD 4000 (Unbranded model) (S1-01)
00017	8	136	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00018	9	010	MSD 4000 (Unbranded model) (S1-01)
00019	9	137	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00020	10	011	MSD 4000 (Unbranded model) (S1-01)
00021	10	138	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00022	11	012	MSD 4000 (Unbranded model) (S1-01)
00023	11	139	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00024	12	013	MSD 4000 (Unbranded model) (S1-01)
00025	12	140	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00026	13	014	MSD 4000 (Unbranded model) (S1-01)
00027	13	141	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00028	14	015	MSD 4000 (Unbranded model) (S1-01)
00029	14	142	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00030	15	000	Unbranded model of loop unit
00031	15	143	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00032	16	017	MSD 4000 (Unbranded model) (S1-01)
00033	16	144	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00034	17	021	MSD 4000 (Unbranded model) (S1-01)
00035	17	145	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00036	18	022	MSD 4000 (Unbranded model) (S1-01)
00037	18	146	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00038	19	023	MSD 4000 (Unbranded model) (S1-01)
00039	19	147	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00040	20	024	MSD 4000 (Unbranded model) (S1-01)
00041	20	148	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00042	21	025	MSD 4000 (Unbranded model) (S1-01)
00043	21	149	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00044	22	026	MSD 4000 (Unbranded model) (S1-01)
00045	22	150	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00046	23	027	MSD 4000 (Unbranded model) (S1-01)
00047	23	151	DPT 4301 4401 (2MS) (Normal model) (S1-01)
00048	24	028	MSD 4000 (Unbranded model) (S1-01)
00049	24	152	DPT 4301 4401 (2MS) (Normal model) (S1-01)

When scan loop is performed on COM loop 0, and there are expansion boards connected, the expansion boards, except for I/O matrix, will not be shown.

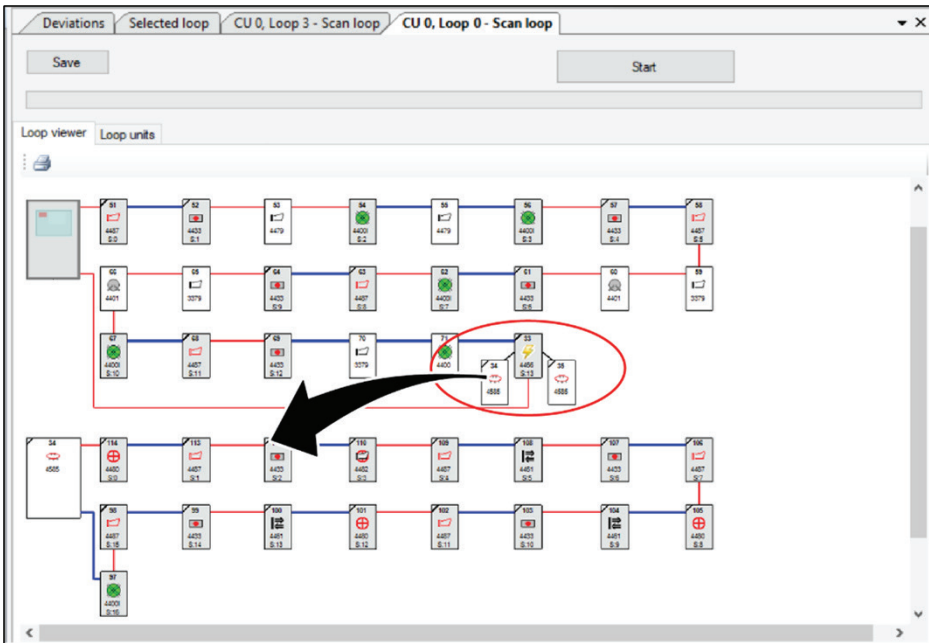
You can hover over the unit in EBLWin to see an explanation of the different numbers.



Units containing isolators are numbered (sequence number). These units will always come in correct order.

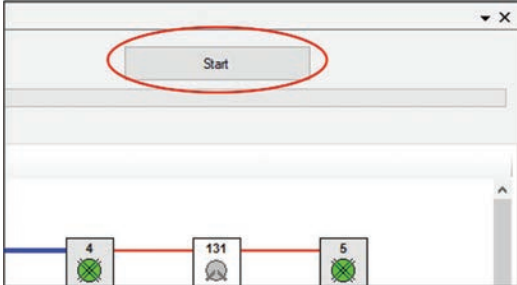
6.1.1. SUB LOOP

The SUB-loop is shown below the COM loop.



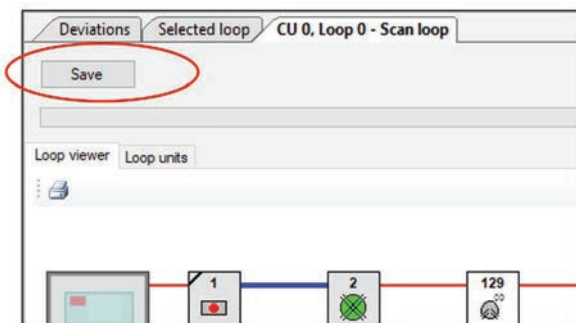
6.1.2. START

Restart the scan loop function, for example when a fault or break where found on the loop.



6.1.3. SAVE

It is possible to create an installation report that can be saved, either as an PDF for a graphic report or as XML to generate a data file for later import, see 6.3. CREATE SSD FROM SCANNED LOOP on page 18.



The documentation shall be saved and printed for the inspection and handover of the system.

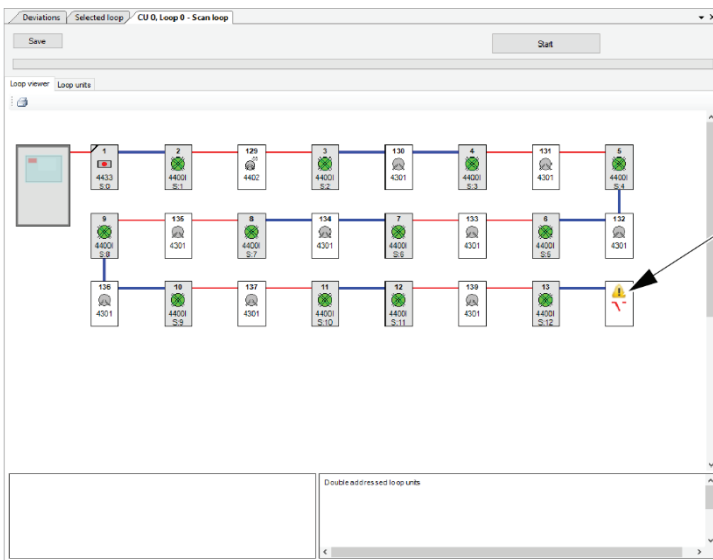
6.1.4. FAULTS - SCAN LOOP

A fault; a break (cut-off) or short circuit on the loop, will be shown graphically. Repair the fault and press start to restart the scan loop function.

The following faults can be found with the scan loop function:

OPEN CIRCUIT

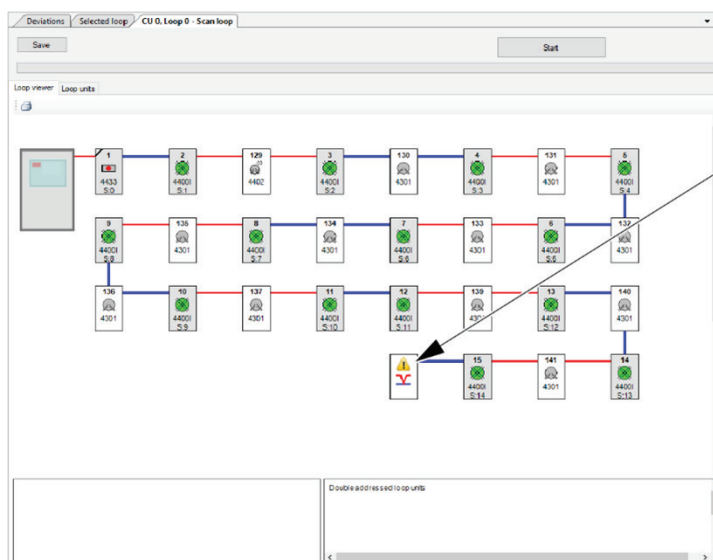
If the system detects an open circuit, the check loop function cannot be completed. The open circuit will be indicated graphically by a sign at the end of the loop.



1. Sign indicating open circuit

SHORT CIRCUIT

If the system detects short circuit, the scan loop function cannot be completed. The short circuit will be indicated graphically by a sign at the end of the loop.



1. Sign indicating short circuit

DOUBLE ADDRESS

A unit has got the same address as another unit on the COM loop.



1. Yellow warning sign indicating address not found
2. 'Double addressed loop units' area

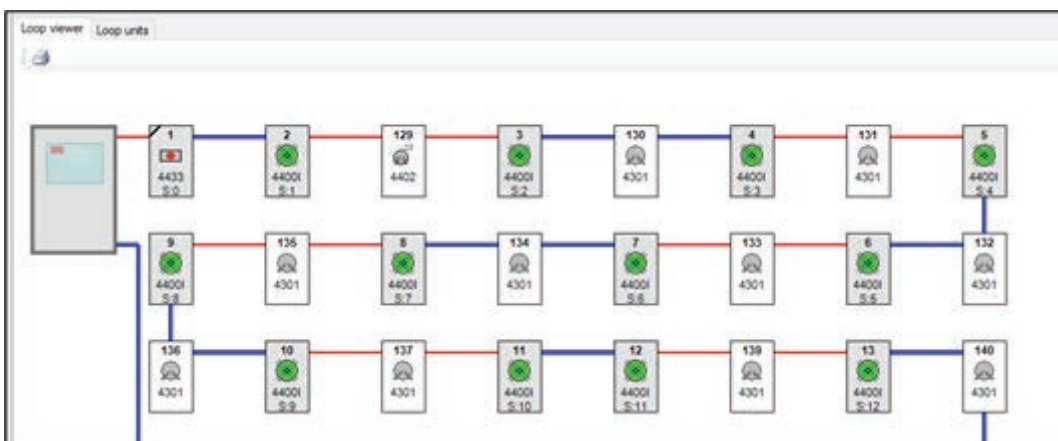
The double address detection requires support from the loop units. Not all units support this feature today; therefore a double address fault may occur as 'Unknown unit' or 'Unknown unit unknown address' (see above).

6.2. VIEW SCANNED LOOP

Select View scanned loop, and in the pop up window, select an XML-file to import.

6.2.1. LOOP VIEWER

Graphic view of the COM loop.



It is possible to print the result of 'scanned loop' in this tab.

6.2.2. LOOP UNITS

List view of the COM loop.

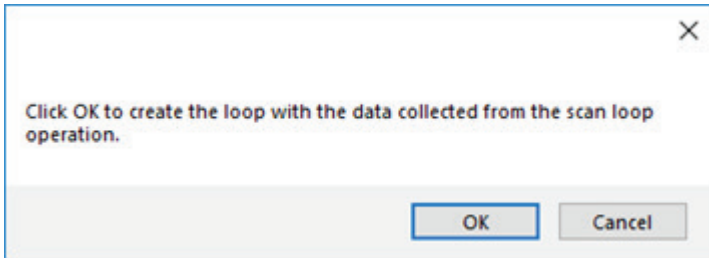
Technical number	Sequence number	Serial number	Loop
003001	0		001: MCP 4433/4439 [001-01]
003002	1	2171013C07199	002: AMD 4400 (Advanced mode) [001-01]
003129			129: 4402 Multi detector with CO [001-01]
003003	2	5171013C02513	003: AMD 4400 (Advanced mode) [001-01]
003130			130: OPT 4301/4401/2840 (Normal mode) [001-01]
003004	3	1171013C07207	004: AMD 4400 (Advanced mode) [001-01]
003131			131: OPT 4301/4401/2840 (Normal mode) [001-01]
003005	4	5171013C02512	005: AMD 4400 (Advanced mode) [001-01]
003132			132: OPT 4301/4401/2840 (Normal mode) [001-01]
003006	5	2171013C07198	006: AMD 4400 (Advanced mode) [001-01]
003133			133: OPT 4301/4401/2840 (Normal mode) [001-01]
003007	6	1171013C07203	007: AMD 4400 (Advanced mode) [001-01]
003134			134: OPT 4301/4401/2840 (Normal mode) [001-01]
003008	7	5171013C02511	008: AMD 4400 (Advanced mode) [001-01]
003135			135: OPT 4301/4401/2840 (Normal mode) [001-01]

It is possible to save the result of 'scanned loop' as a signable HTML file in the "loop units"-tab (list view)

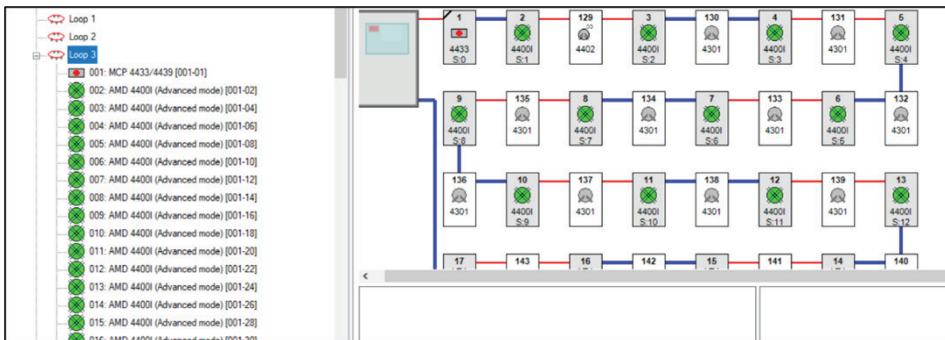
6.3. CREATE SSD FROM SCANNED LOOP

Select Create SSD from scanned loop, to add the scanned units to the SSD.

- a) Right click on the loop and select Create SSD from Scanned loop.
- b) In the dialog window, press OK.



- c) Select the XML-file, and press Open.
- d) When the SSD is created, all the loop units are shown in the tree view to the left. Click + to expand and - collapse the tree view.



7. TECHNICAL DATA

All current consumptions are valid by nominal voltage and by 25 °C.

Voltage: Allowed Normal Current: Min: (internal) Max:	23.5 – 24.5 V DC 24V DC 80 mA 700 mA
COM loop Voltage: Allowed Normal COM loop Current:	12 - 30V DC 24V DC < 6 mA
Short circuit isolator	Yes
Internal battery	No
Material	Aluminum housing
Ambient temperature: Operating Storage	0 to +40 °C 0 to +40 °C
Ambient humidity	Maximum 95 % RH (Non condensing)
Size: H x W x D	290 x 235 x 75 mm
Weight:	2240 g

8. APPROVALS

Applicable directive/ Approval	Applicable standards	Notified body
EMC	EN61000-6-3 (Emission) EN61000-6-1 (Immunity)	Self declaration Self declaration
RoHS	EN IEC 63000	Self declaration



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