



PRODUCT SPECIFICATION SHEET

PRODUCT NAME	Smoke Control Lamp Driver (SCS-8LAU)
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USAGE

The SCS-8LAU module is used to drive lamps/LEDs on a mimic panel. This specification outlines the application of SCS-8LAU on an AFP-2800 system.



NOTE: SCE-8LAU expander module is not supported on the AFP-2800 Fire Indicator Panel (FIP).

OPERATION

Each SCS-8LAU has two rotary decimal switches for addressing and 8 dipswitches for mode configuration (see Figure 1).

Each SCS-8LAU module has eight independent switch groups that consist of the following:

- Contacts for three position switch (ON/AUTO/OFF)
- Contact for an On LED (Red)
- Contact for an Off LED (Green)
- Contact for a Trouble LED (Amber)

Each SCS-8LAU also has contacts for two LEDs and one momentary switch with the following functions:

- Contact for an All Auto LED (Green)
- Contact for a Communication Fault LED (Amber)
- Contact for an AC Reset switch

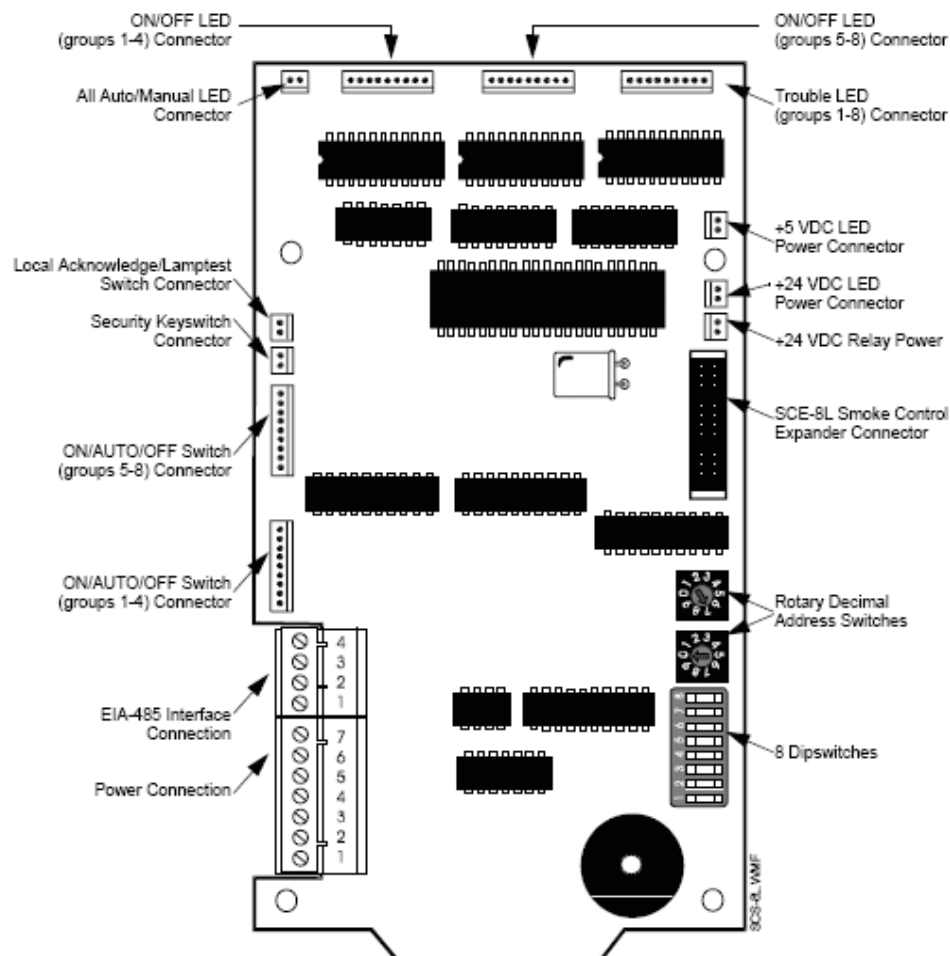


Figure 1 - SCS-8LAU PCB Layout

CONNECTION INFORMATION

EIA-485

Communication between the FACP and the SCS-8LAU is accomplished over a two-wire EIA-485 serial interface. Up to 32 EIA-485 devices may be installed on an EIA-485 circuit. The data communication and wiring are supervised by the fire alarm control panel.

Wiring Specifications

The EIA-485 circuit cannot be T-Tapped; it must be wired in a continuous fashion from the control panel to the SCS-8LAU. The maximum wiring distance between the panel and the last SCS-8LAU or annunciator is 1000 meters @ 1.5 mm². The wiring size must be a 1.0 to 4 mm² twisted pair cable having Characteristic Impedance of 120 ohms, +/-20% (Shielded cable is recommended). Limit the total wire resistance to 100 ohms on the EIA-485 circuit, and 10 ohms on the SCS-8LAU power circuit. Do not run cable adjacent to, or in the same conduit as, 240 volts AC service, noisy electrical circuits that are powering mechanical bells or horns, audio circuits above 25 volts (RMS), motor control circuits, or SCR power circuits.

Terminal Wiring

The following should be considered when connecting terminal wiring:

- Do not "T-Tap" the EIA-485 circuit; it will not function properly. Wire it as shown in Figure 4.
- Connect Earth Ground to a mounting screw on the backbox or cabinet.
- Connect 24 VDC Power to the SCS-8LAU. This power need not be supervised by a power supervision relay since it is inherently supervised by the control panel (loss of communications is registered during loss of power to the SCS-8LAU).

Terminate the shield at the outside of the FACP backbox (ground). Do not allow the shield to enter or even touch the cabinet. Between Smoke Control Stations, wire-nut multiple shields together outside of the respective enclosures.

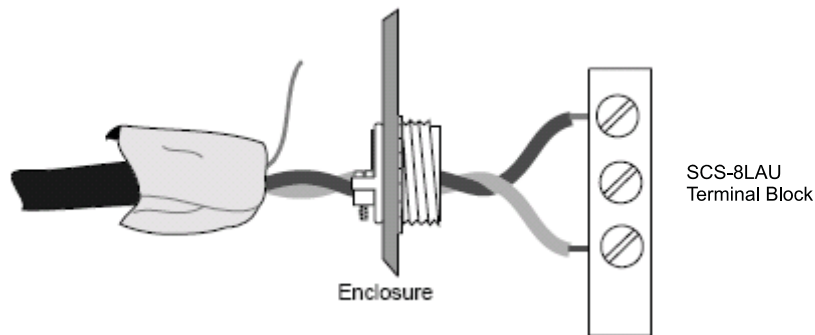


Figure 2 - Terminating the Shield



NOTE: All enclosures, including the FACP backbox, must be connected to earth ground! Never use the shield for grounding purposes. Terminate the EIA-485 shield at the Fire Alarm Control Panel only.

Power Supply

Power for the Smoke Control Station is provided via a separate power loop from the control panel which is inherently supervised (loss of power also results in a communication failure at the control panel). If the SCS-8LAU is powered remotely, it must be powered by a Power Limited power supply listed for fire protective signaling and there must be a common connection between the negative battery terminals of each supply. Use of the RPT-485 isolator/repeater in the control panel to isolate the EIA-485 line eliminates the need for the common connection between power supplies.

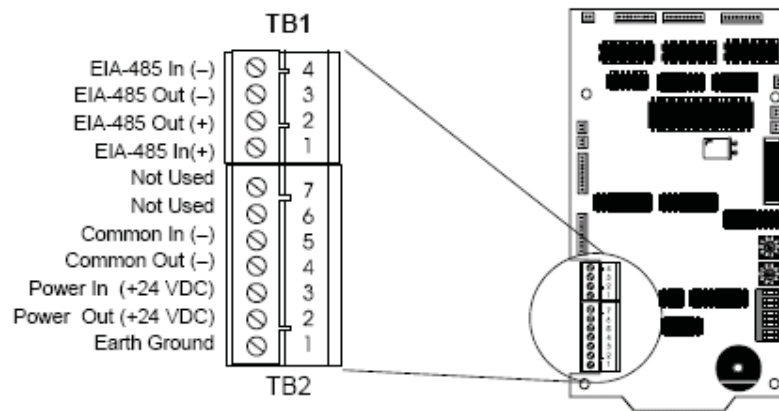


Figure 3 - SCS-8LAU Terminal Blocks

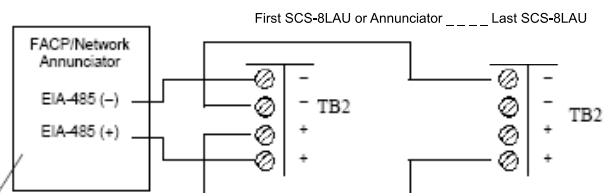
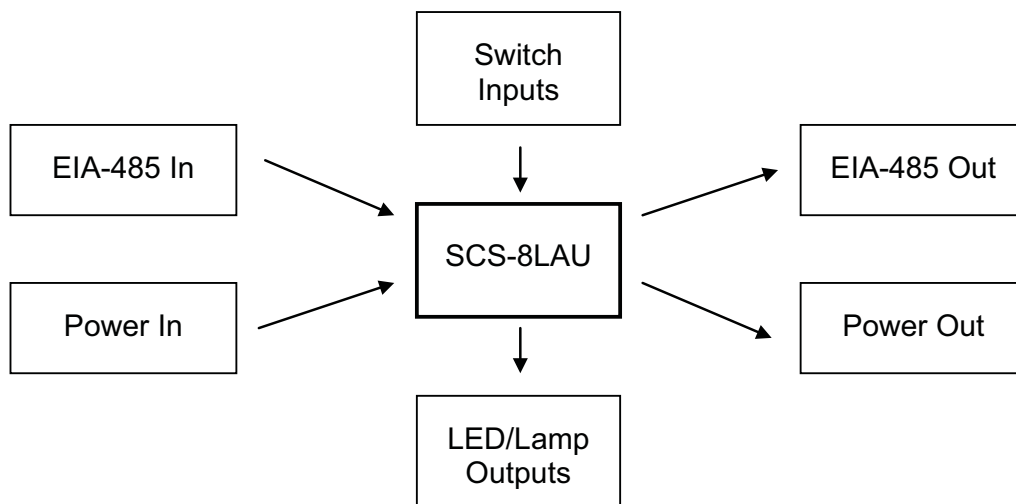


Figure 4 - Wiring Multiple Smoke Control Stations (SCS-8LAU)/Annunciators

OVERALL BLOCK DIAGRAM



SPECIFICATION:

The input voltage and current draw (used for battery calculations) for the SCS-8LAU is listed below:

Input Voltage: 18-32 VDC
 Input Current: 33 mA
 Maximum LED Current :
 20 mA @ 5 V (per LED)
 50 mA @ 24 V (per LED)

INPUTS***Wiring the Switches***

The connectors and pin assignments used to wire switches to the SCS-8LAU are shown in Figure 5. The switches for each switch group wired to J1 and J2 must be single pull, double throw, center-off type as shown in Figure 5. The center-off position is used for Automatic Control. Switches can be obtained from any company which manufactures graphic annunciator panels.

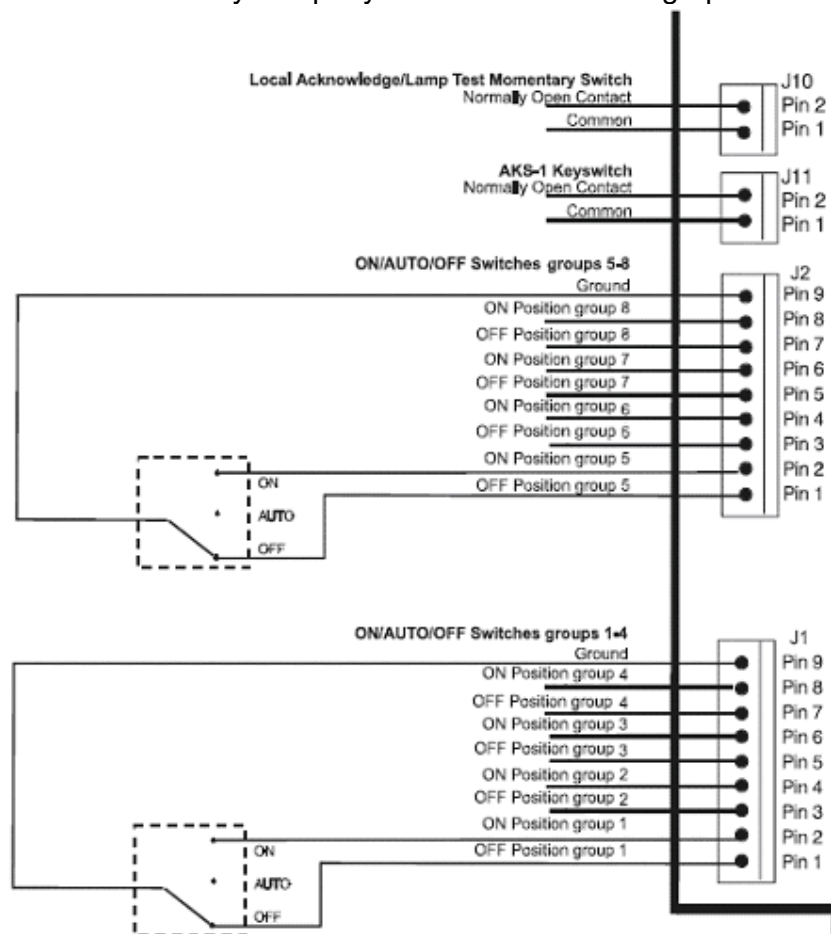


Figure 5 - Switch Wiring for SCS-8LAU

The switch input addresses are the same as normal SCS-8 card, shown in Table 1. The switch input positions correspond with the switches being wired as per Figure 5. The logic combinations for those addresses to become active are also shown in Table 1.

SCS-8LAU Switch Inputs	Logic Combinations to Become Active	Notifier AFP-2800 Program Address
On Position Group 1	J1P9 – J1P2 Closed	1.1YY.I1
Auto Position Group 1	J1P1 & J1P2 Both Open	1.1YY.I2
Off Position Group 1	J1P9 – J1P1 Closed	1.1YY.I3
On Position Group 2	J1P9 – J1P4 Closed	1.1YY.I4
Auto Position Group 2	J1P3 & J1P4 Both Open	1.1YY.I5
Off Position Group 2	J1P9 – J1P3 Closed	1.1YY.I6
On Position Group 3	J1P9 – J1P6 Closed	1.1YY.I7
Auto Position Group 3	J1P5 & J1P6 Both Open	1.1YY.I8
Off Position Group 3	J1P9 – J1P5 Closed	1.1YY.I9
On Position Group 4	J1P9 – J1P8 Closed	1.1YY.I10
Auto Position Group 4	J1P7 & J1P8 Both Open	1.1YY.I11
Off Position Group 4	J1P9 – J1P7 Closed	1.1YY.I12
On Position Group 5	J2P9 – J2P2 Closed	1.1YY.I13
Auto Position Group 5	J2P1 & J2P2 Both Open	1.1YY.I14
Off Position Group 5	J2P9 – J2P1 Closed	1.1YY.I15
On Position Group 6	J2P9 – J2P4 Closed	1.1YY.I16
Auto Position Group 6	J2P3 & J2P4 Both Open	1.1YY.I17
Off Position Group 6	J2P9 – J2P3 Closed	1.1YY.I18
On Position Group 7	J2P9 – J2P6 Closed	1.1YY.I19
Auto Position Group 7	J2P5 & J2P6 Both Open	1.1YY.I20
Off Position Group 7	J2P9 – J2P5 Closed	1.1YY.I21
On Position Group 8	J2P9 – J2P8 Closed	1.1YY.I22
Auto Position Group 8	J2P7 & J2P8 Both Open	1.1YY.I23
Off Position Group 8	J2P9 – J2P7 Closed	1.1YY.I24
Local Acknowledge/ Lamp Test Momentary Switch	J10P2 – J10P1 Closed	1.1YY.I25

Table 1 - SCS-8L Switch Input Address

Where:

- YY is the SCL-8LAU address, which corresponds to the Rotary Decimal Address Switch positions in Figure 1

OUTPUTS

The LEDs or Lamps can be powered from 24 VDC or 5 VDC, depending on the load required. Figure 7 and Figure 8 illustrate connection of the desired voltage. The following connectors and pin assignments are used to wire LEDs or Lamps to the SCS-8LAU:

J6	+24 VDC LED Power
pin 1	+24 VDC
pin 2	+24 VDC
J8	+5 VDC LED Power
pin 1	+5 VDC
pin 2	+5 VDC

The maximum output current for each LED or Lamp is 50 mA if powered by 24 VDC or 20 mA if powered by 5 VDC.



NOTE: All LEDs must be located in the same room as the modules.

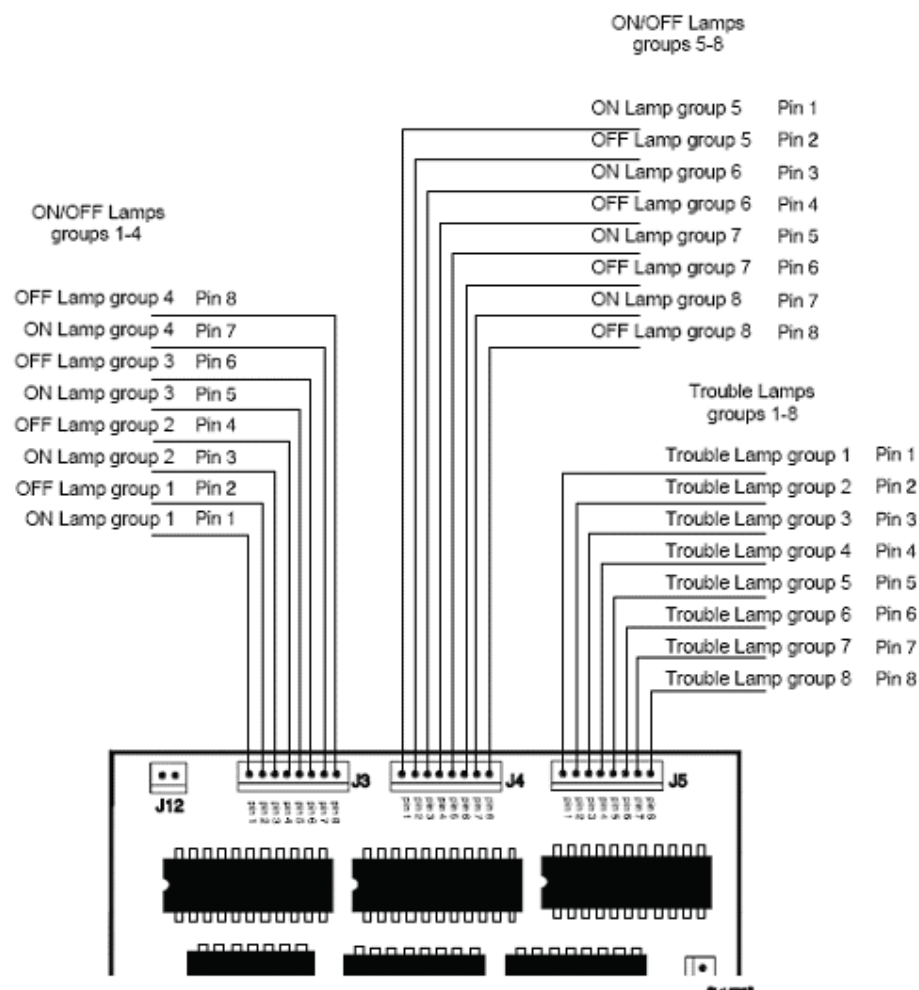


Figure 6 - Lamp Wiring for SCS-8LAU

The address of the output drivers when programming the SCS-8LAU with the AFP-2800 PC Interface is shown in Table 2. The pin locations on the PCB can be seen in Figure 6.

SCS-8LAU Pin Outputs	Normal Fan Switch Output	Logic State	Notifier AFP-2800 Program Address
J3 – Pin 1	On Group 1	Active High	1.1YY.O1
J3 – Pin 2	Off Group 1	Active High	1.1YY.O2
J3 – Pin 3	On Group 2	Active High	1.1YY.O4
J3 – Pin 4	Off Group 2	Active High	1.1YY.O5
J3 – Pin 5	On Group 3	Active High	1.1YY.O7
J3 – Pin 6	Off Group 3	Active High	1.1YY.O8
J3 – Pin 7	On Group 4	Active High	1.1YY.O10
J3 – Pin 8	Off Group 4	Active High	1.1YY.O11
J4 – Pin 1	On Group 5	Active High	1.1YY.O13
J4 – Pin 2	Off Group 5	Active High	1.1YY.O14
J4 – Pin 3	On Group 6	Active High	1.1YY.O16
J4 – Pin 4	Off Group 6	Active High	1.1YY.O17
J4 – Pin 5	On Group 7	Active High	1.1YY.O19
J4 – Pin 6	Off Group 7	Active High	1.1YY.O20
J4 – Pin 7	On Group 8	Active High	1.1YY.O22
J4 – Pin 8	Off Group 8	Active High	1.1YY.O23
J5 – Pin 1	Fault Group 1	Active Low	1.1YY.O3
J5 – Pin 2	Fault Group 2	Active Low	1.1YY.O6
J5 – Pin 3	Fault Group 3	Active Low	1.1YY.O9
J5 – Pin 4	Fault Group 4	Active Low	1.1YY.O12
J5 – Pin 5	Fault Group 5	Active Low	1.1YY.O15
J5 – Pin 6	Fault Group 6	Active Low	1.1YY.O18
J5 – Pin 7	Fault Group 7	Active Low	1.1YY.O21
J5 – Pin 8	Fault Group 8	Active Low	1.1YY.O24

Table 2 – SCS-8LAU Output Pin Addresses

Where:

- YY is the SCS-8LAU address, which corresponds to the Rotary Decimal Address Switch positions in Figure 1



NOTE: Jumper 3 and 4 outputs are active high outputs. Jumper 5 is an active low output and consideration for this must be made when programming.

LED Connection for 5VDC (see Figure 7)

Use red for ON, green for OFF, Amber for Trouble, green for All AUTO and amber for MANUAL. When using high efficiency 2mA LEDs, Use 2.2K ohm, 1/4-watt resistors for each point.

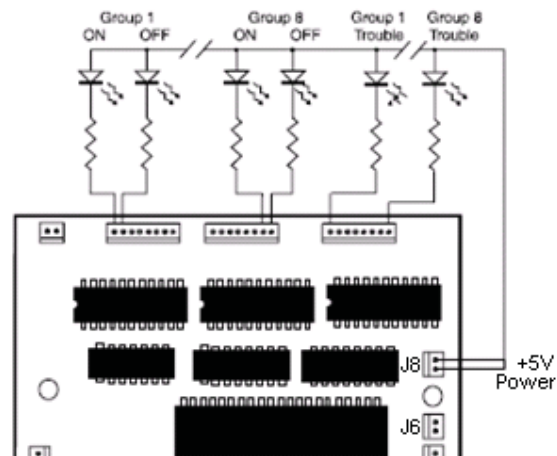


Figure 7 - LED Connection for 5VDC

LED Connection for 24VDC (see Figure 8)

Use red for ON, green for OFF, amber for Trouble, green for All AUTO and amber for MANUAL. When using high efficiency 2mA LEDs, Use 10K ohm, 1/4-watt resistors for each point

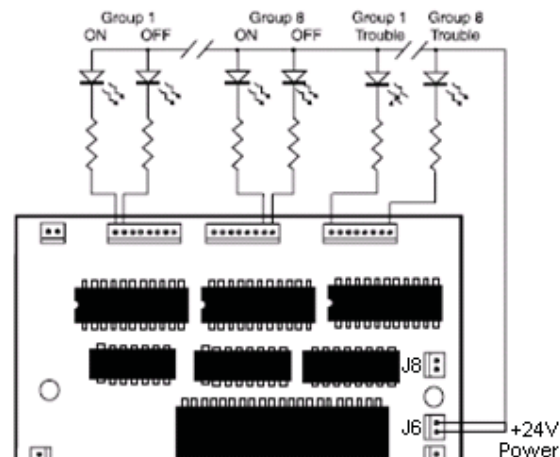


Figure 8 - LED Connection for 24VDC

Programming

To program the fan control so that the switches and the LEDs are correct, the fan wizard would be used as per normal, however, we must compensate for the active low outputs on J5. If you want to use different fan LED outputs than those shown in Table 2, match the desired output pin on the SCS-8LAU board to the AFP-2800 PC Interface program address in Table 2.

To change a pin on Jumper 5 to be active high from active low, the script must first be put into brackets, leaving any timer functions out of the brackets, and then a not symbol '!' placed in front of the brackets. For example, if required to use the following script as active high for an output pin on jumper 5:

```
((1.18.O1 AND !1.18.Z1 AND !1.18.O2) OR (1.18.O2 AND 1.18.Z1)) AND T10;
```

add the brackets and the '!' below:

```
!(((1.18.O1 AND !1.18.Z1 AND !1.18.O2) OR (1.18.O2 AND 1.18.Z1))) AND T10;
```