

Quick Start Guide



ENVEA SPS-SHIELD LITE SYSTEM

WARNING:

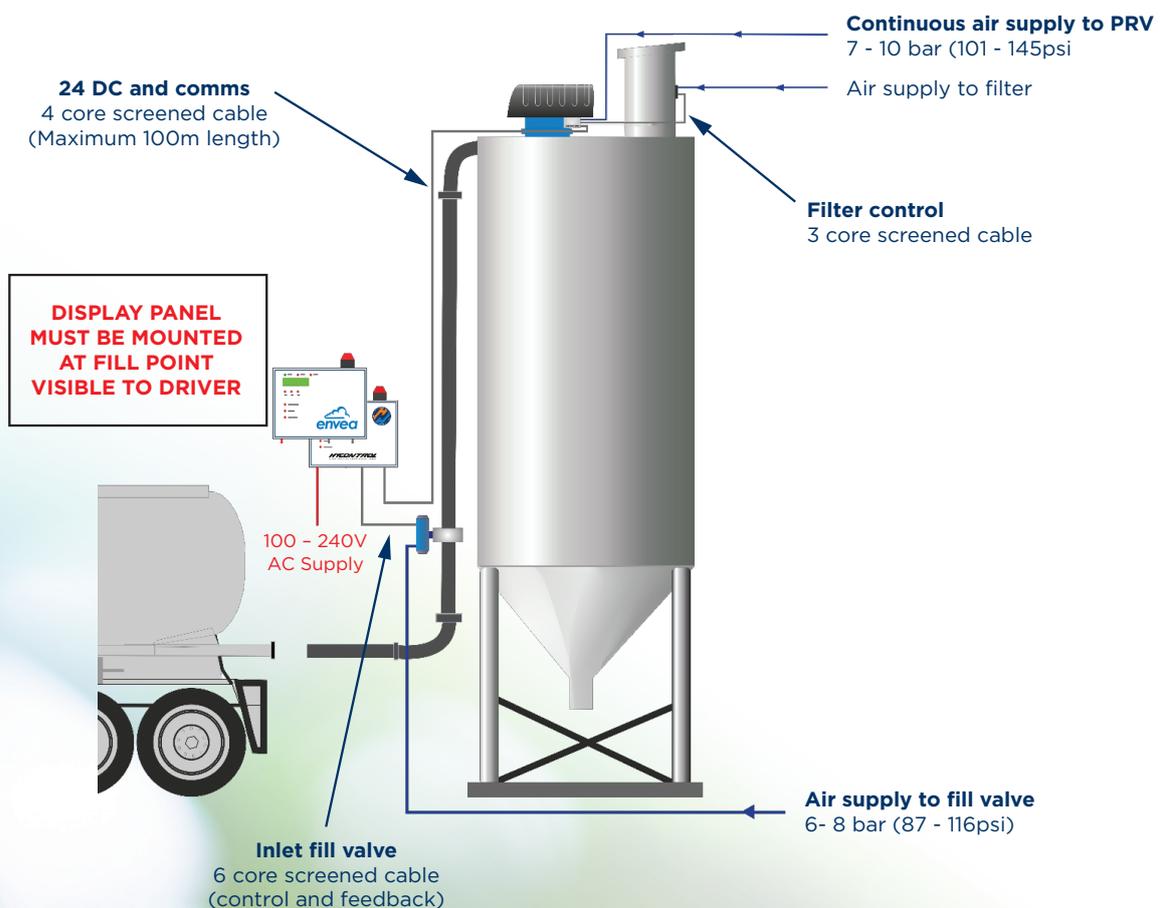
Failure to follow safe operating / installation and maintenance guidelines could result in serious injury or death

- Use suitable PPE for the tasks to be performed and for the environment you are working in.
- All installation, operation and maintenance work must be undertaken by qualified authorised personnel.
- All applicable industry and statutory regulations must be followed.
- Any site-specific equipment should be used.
- Ensure all tools are in good working order.
- DO NOT undertake any operation or work on the PRV on the silo top unless qualified and authorised to do so.
- For full manual, refer to <https://www.hycontrol.com/downloads/manuals>.

CAUTION:

The product described in this document is NOT suitable for use in an ATEX classified area.

1 SYSTEM OVERVIEW



PARTS LIST

2 PARTS LIST

Instruction manual



3 x Hand knobs
3 x Metal penny washers
3 x Rubber washers



Weather cover



Pressure sensor
Pressure relief valve
Level probe



Gasket



Upstand /
spigot flange



9 x M10 30mm
bolts & washers



Weather cover for
SPS-Shield Lite DB



SPS-Shield Lite DB



INSTALLATION

3.1 MOUNTING THE DISPLAY UNIT

3.1.1 Wiring the SPS-SHIELD LITE DB display panel

Display panel mounting considerations

- DISPLAY PANEL MUST BE MOUNTED AT FILL POINT VISIBLE TO DRIVER
- Power from an isolatable power supply
- Mount at head height so easily viewable and within comfortable reach
- Protect from the elements - use weather cover supplied

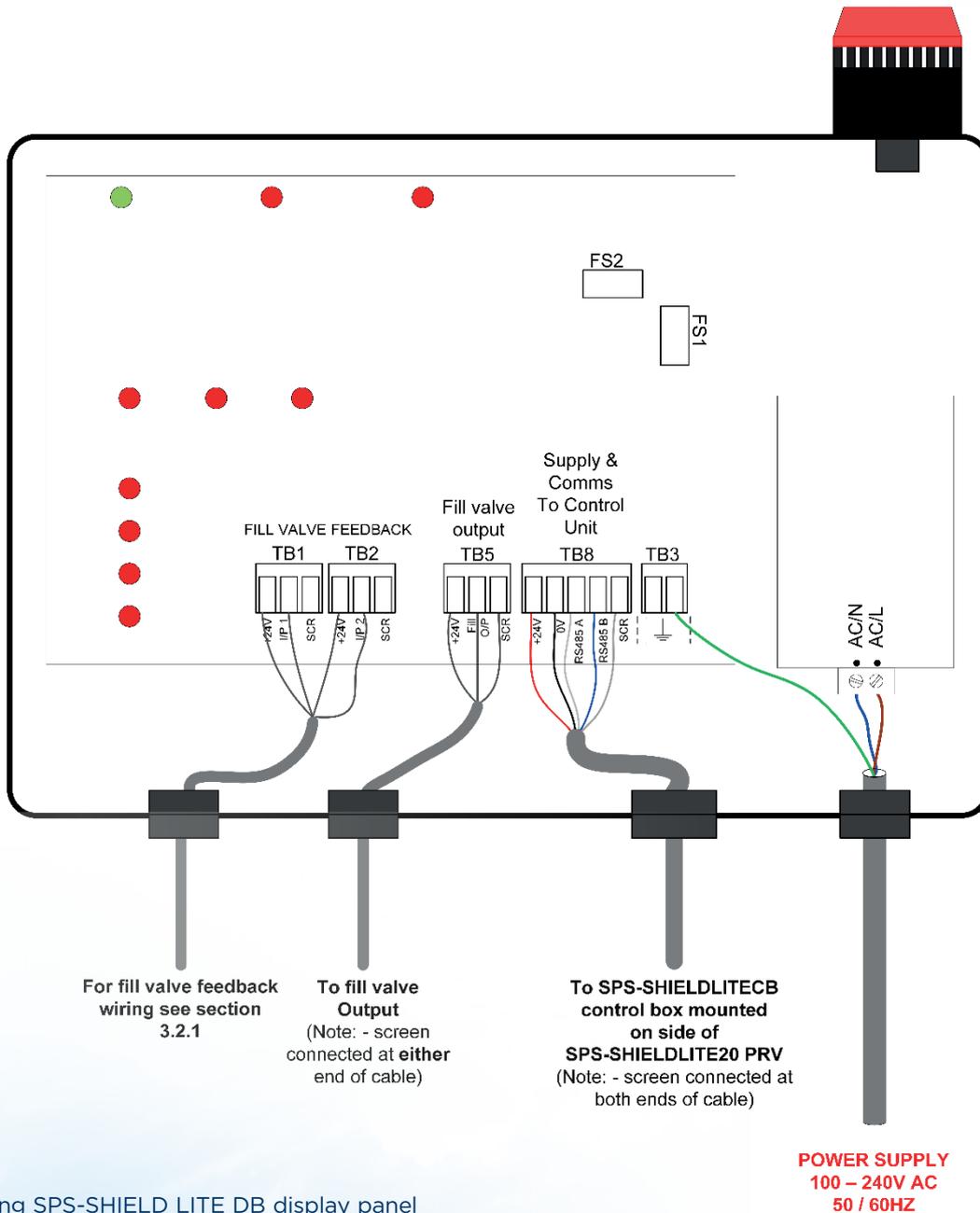


Figure 1: Wiring SPS-SHIELD LITE DB display panel

INSTALLATION

3.2 WIRING THE FILL VALVE

3.2.1 Wiring to a fill valve with open / close position switch feedback

Fill valve switch position feedback

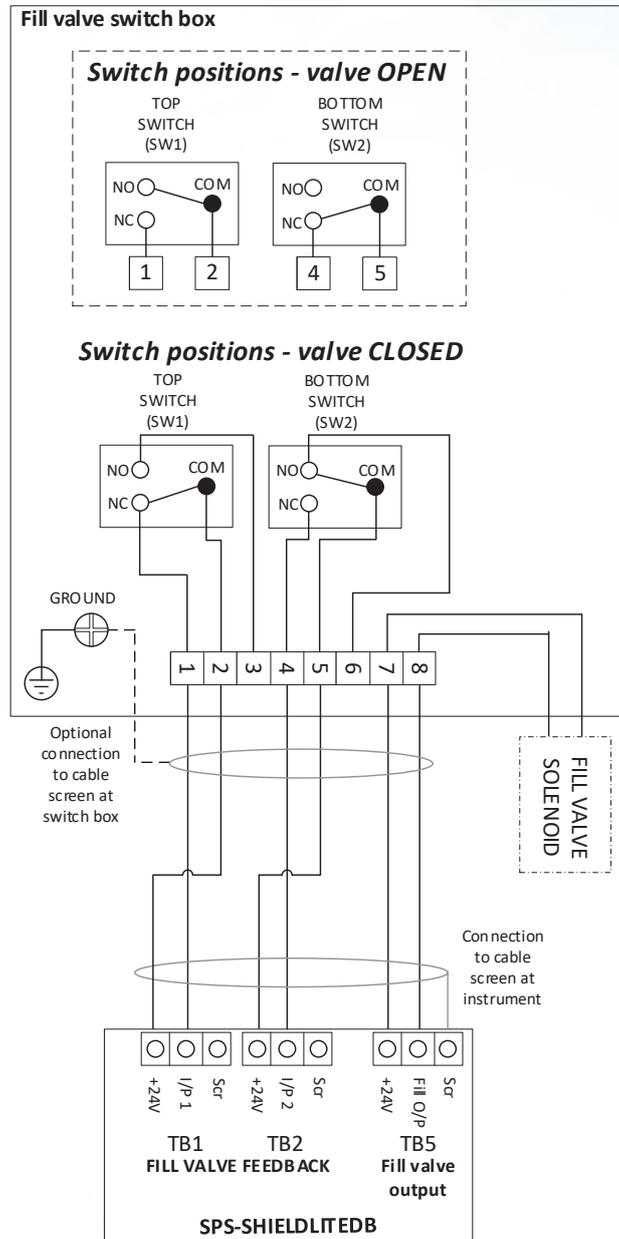


Figure 2: Fill valve switch box wiring

Expected voltages

Fill valve closed	Fill valve open
24V DC on I/P 1	0V DC on I/P 1
0V DC on I/P 2	24V DC on I/P 2

Note: - All voltages measured with respect to Terminal TB5 Scr on SPS-SHIELD LITE DB PCB.

TB1, TB2 and TB5 connections can share the same cable requiring only one screen connection at the display panel end. If separate cables are used, each cable must have its own screen connection e.g. TB1 Scr, TB2 Scr and TB5 Scr.

INSTALLATION

3.3 PRV MOUNTING CONSIDERATIONS

When positioning the spigot, allow for a 40" (1.0m) diameter footprint free of any obstructions for correct positioning, wiring, and removal of covers. Be aware of the following points:

- **DO NOT** mount probe in fill path of the material, as this will cause premature wear and failure.
- **Ensure** there is sufficient space to remove and install probes for maintenance.
- **DO NOT** install in front of ladder access.
- We recommend removal of old PRVs to prevent false venting.
- Mount as close to filter as possible but not in way of fill.
- Beware of internal fill pipes, ladders, split silos etc.

We recommend cutting the main access hole after welding on the spigot.

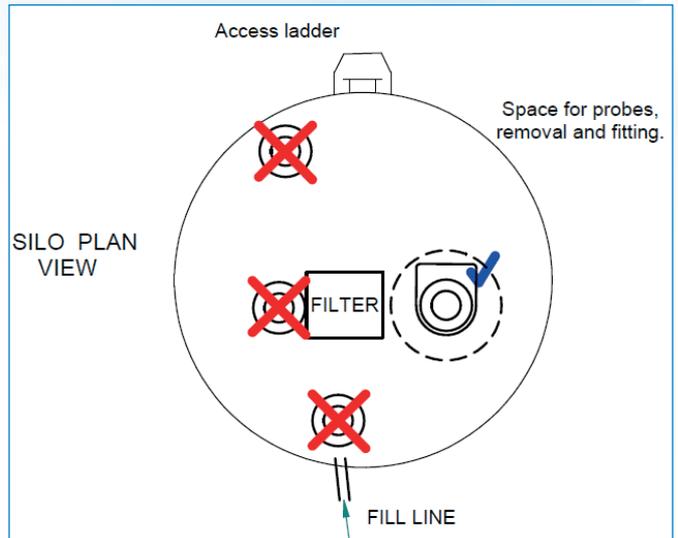


Figure 3: Ideal location of PRV on silo top

3.4 REMOVING THE HIGH-LEVEL PROBE FROM UNDERSIDE OF PRV

The high-level probe of the SPS-SHIELD LITE 20 system comes pre-fitted on the side of the PRV and already wired to the PRV control box. Make sure to remove the level probe sensor from the underside of the PRV prior to installation by cutting the three cable ties and removing the plastic tip protector.

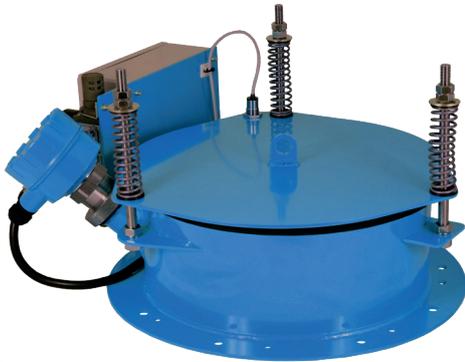


Figure 4: Shows level probe mounted on side of PRV



Figure 5: Shows level probe sensor underside of PRV secured by 3 cable ties and with tip protector

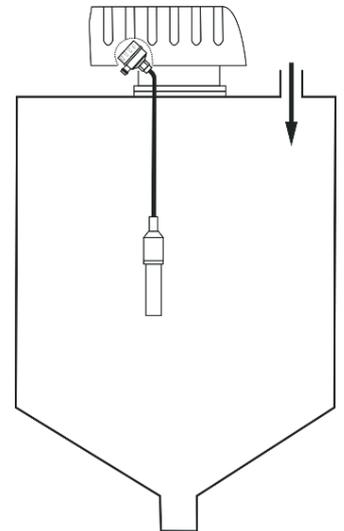


Figure 6: DP probe mounting

INSTALLATION

3.5 WIRING THE SPS-SHIELD LITE CB PRV CONTROL BOX

Remove cover of control box and wire the following cables to the control box's PCB using the glands as shown in Figure 8:

- 1) Wire 4-core screened supply and communications cable from the SPS-SHIELD LITE DB display panel TB8 to control box TB11.
- 2) Wire 3-core screened cable between control box TB3 and ENVEA HYVENT silo filter - see section 3.6.1.

The control box wiring is now complete.

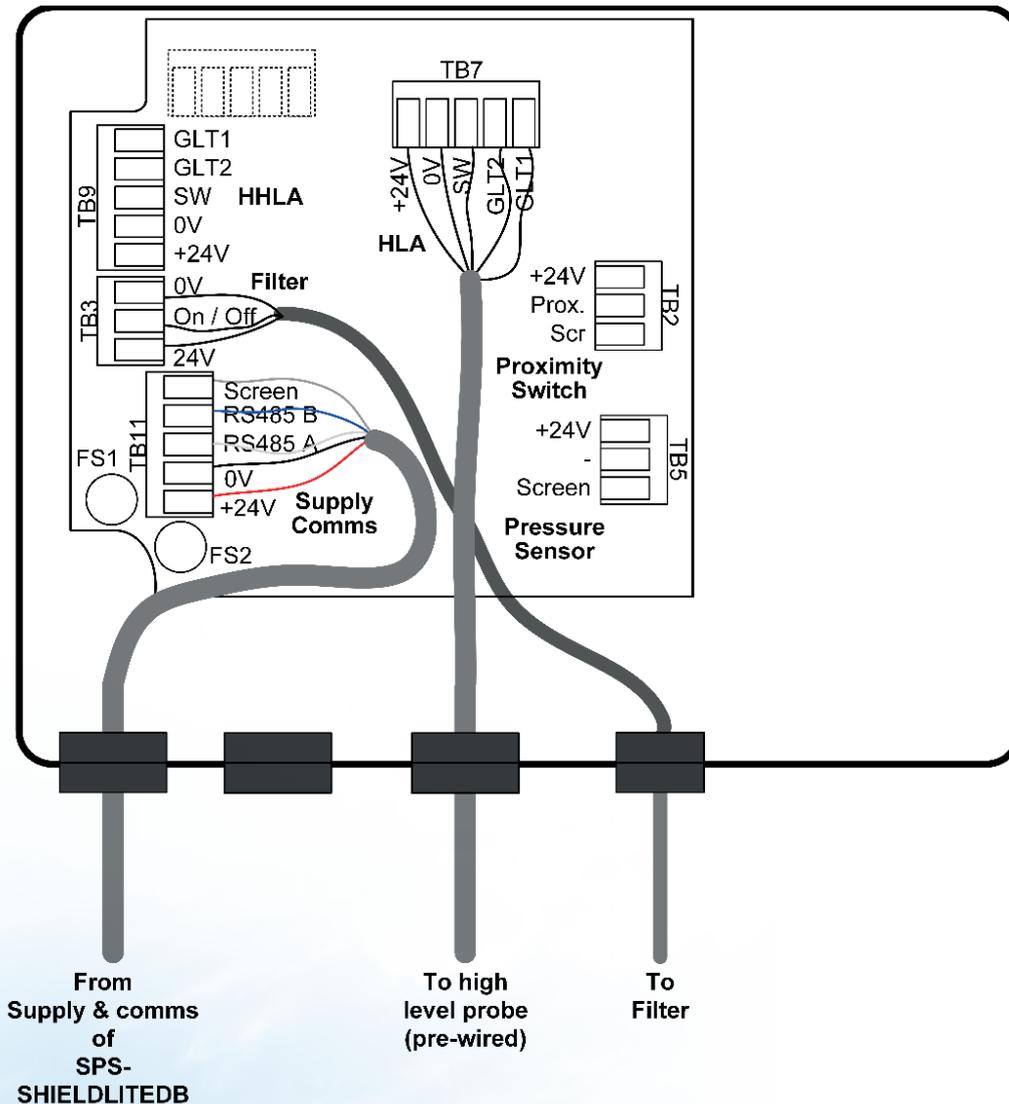


Figure 8: SPS-SHIELD LITE CB terminal wiring

INSTALLATION

3.6 WIRING THE ANCILLARIES

3.6.1 Wiring the 24V DC HYVENT silo filter



Controller program	
Parameter	Setting
F01	0
F02	0.5
F03	30
F04	3
F05	0
F06	1
F07	1
F08	24

Table 1: Hyvent program

3.6.1.1 24V DC ENVEA Hyvent filter connection using external ON/OFF control

Connect TB3 as in diagram below. Link pins 12 to 13 on Hyvent 24V DC Filter controller.

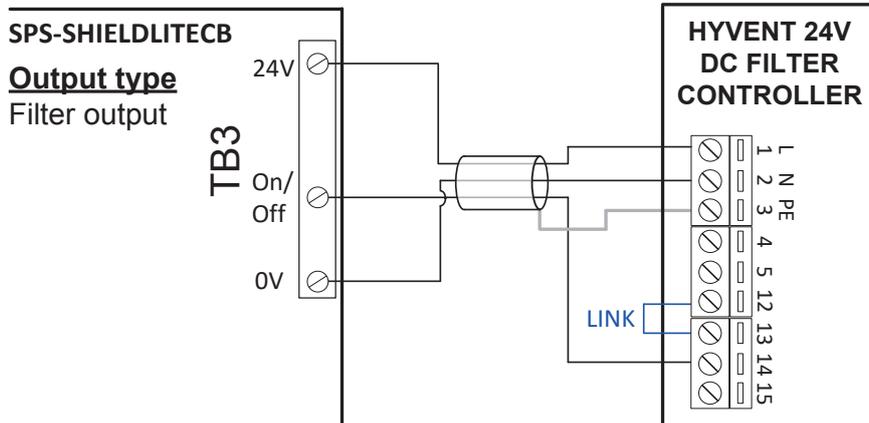


Figure 9: Wiring to a 24V DC powered ENVEA Hyvent silo filter

3.6.2 WAM SiloTop zero / R03 filter connection

Connect TB3 as in diagram below. Link pins 3 to 4 on WAM silo. The filter should be set to sequence automatically on power up.

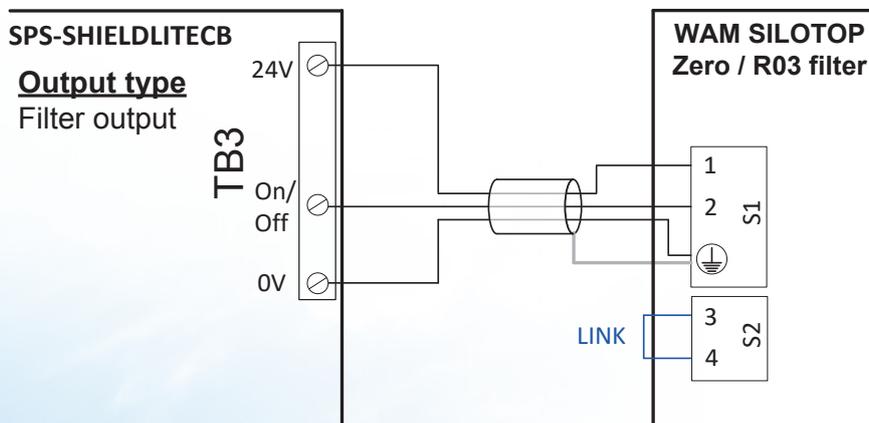


Figure 10: Wiring to a WAM SILOTOP zero / R03 filter

INSTALLATION

3.7 CONNECTING THE AIR-LINE

Connect the air-line into the pressure regulator as shown in Figure 11 and check pressure on gauge is at 6 bar.

Note: - The air supply MUST be clean and dry and filtered to 25 microns.



Figure 11: Connecting the air-line

4 COMMISSIONING

After completing the mechanical, electrical and pneumatic installation perform the following checks:

Pre commissioning checks

1. Air pressure regulator on the SPS-SHIELD LITE PRV should be set at 6.0 bar (87psi).
2. Air pressure at the fill valve should be at least a constant 6 bar (87psi). Consider other demands on the air supply which might affect this.
3. Confirm the specified AC voltage to the display panel (100V-240V AC 50Hz/60Hz).
4. Confirm the 24VDC output from the display panel at TB8 between pins 0V and +24V. See section 3.1.1 for connector location.

Commissioning checks

5. At start-up, ensure the display shows the **“SPS SHIELD LITE GLT key to start”** screen.
6. Switch the GLT key-switch clockwise and release. If the initial check passes then the beacon and siren will flash for five seconds during the test.
7. If the test is successful, the display will show **“Safe to fill 90 min remaining”**; the fill valve will open and a delivery can commence.
8. If the test fails, a message will be displayed and the fill valve will remain closed. At this point further investigation is required as to the cause of the test failure. See troubleshooting section of full manual for further details.

5 FURTHER INFORMATION

ENVEA provides complete documentation and instructional videos for installing, commissioning, and operating the SHIELD Lite system. Rather than multiple manuals for different components, SHIELD Lite requires only one.

All these resources are available through ENVEA's specialist website, www.envea.global.



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