



Packing List

The main system is supplied with a bracket and anti-vibration mounts featuring M6 threads, allowing for easy installation at the desired location.



1. FluidInspectIR system

2. G1/8 6mm Pipe Connectors

3. Sealing Washers

4. (Optional) Anti Vibration Mounts

5. Power Cable

6. Mounting Brackets

7. (Optional) Modem

8. (Optional) Ethernet cable for cloud connection



Quick Installation Guide

Technical requirements and warnings

● HOSE INSTALLATION

- Recommended maximum length: 3m (ideal: 1m)

● MOUNTING POSITION

- Mount maximum 1m above or below inlet oil connection (sampling point)
- Preferred: Mounted in-line with sampling point (eliminates head pressure issues)
- Avoid significant vertical offset to prevent positive/negative head effects
- Install horizontally (screen facing up) or vertically (wall-mounted), do not install device at an angle
- Ensure brackets and anti-vibration legs are installed

● PUMP VERSION

- Do not install on pressurised line
- Ensure neither inlet or outlet are blocked at any time to avoid potential system damage

● VALVE VERSION

- Ensure there is enough pressure differential to drive oil through the system.
- Recommended pressure differential: 2-5 bar, Max absolute pressure: 7 bar.
- Recommended flow rate: $50 < x < 150$ ml/min (optimal: 100 ml/min)
- Flow is application dependent and varies with oil type and temperature.
- Installation best practice: Install needle valve on inlet line.

● FLOW CONTROL

- To fine-tune flow: Enter circulation mode via menu buttons
- Monitor flow rate displayed on screen and adjust needle valve accordingly
- Verify final flow rate is within recommended range before entering runtime mode

● MODEM CONNECTION

- If supplied with modem, ensure no external device is connected to the modem. Doing otherwise could incur data charges.
 - Ensure that FluidInspectIR unit is connected to the LAN port of the modem and nothing is connected to the modem WAN port unless explicitly instructed by Spectrolytic.
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Quick Installation Guide

Network / Cloud Connectivity

System either comes with a provided LTE modem or can connect to existing network to establish connection to the cloud.

Default configuration is as a DHCP client, so a valid DHCP server is required on the network if not using the LTE modem. In this case it is recommended to have ports 8883 and 9993 open (TCP and UDP) to allow data upload to the cloud.

Standard RJ45 Ethernet cable required. IP67 cover provided.

Main System Installation

- 1) Before mounting system visually check system for damage.
- 2) Add the provided hydraulic fittings, making sure to include the provided sealing washers.
- 3) Secure the anti-vibration mounts to the frame, add the provided mounting brackets to the front of the device with the screw holes aligned. Ensure that the extruding part of each bracket is positioned along the outer edge of the device and is facing downwards. At the bottom-right mounting hole, attach a protective earth (PE) bonding conductor using an M6 ring crimp terminal. Connect the other end to the installation's protective earth terminal.
- 4) Mount system in desired location. Orientation should be either horizontal with the screen facing upwards or vertical with the oil inlet and outlet facing downwards (depending on application, please confirm with Spectrolytic).
- 5) Attach the hydraulic supplies to the quick connectors and attach to system making sure sample supply is in the left side **INLET** and sample return is on right side **OUTLET**.



- 6) Connect desired plug to provided power cable.

- 7) Provide power to the system.

- 8) Screen will turn on showing welcome message, and the system will default, ready in its safe mode.

System User Notification

The system notifies the user of its current status by displaying the relevant status message on the display during operation. In addition, the user is notified directly as the system can send any status messages and error codes either via cloud connections or via MODBUS / alternative digital communication protocol (available on request) to the end user.

The screen starting page shows the current state of the system and the latest data results from the sensors.

```

+-----+
| Status : Safe Mode |
| Latest Results :   |
| Oxidation = 5.27 abs/cm |
| Water = 757.50 ppm |
+-----+
  
```

Using the navigation buttons, it is possible to change states, see information of the system and change configurations.

System Initialization

By default, the system comes in safe mode, where no captures take place, and the valve is closed, or pump is off.

Using the screen and buttons, the user can manually prime the system by entering a circulation mode or start the runtime operation routine.

- Circulation Mode

From the home screen enter the menu by pressing the enter button ↵

```

+-----+
| Status : Safe Mode |
| Menu :             |
| -> Operating Mode  |
|   System Settings  |
+-----+
  
```

Select "Operating Modes" using the up ↑ and down ↓ buttons and the enter button ↵

```

+-----+
| Status : Safe Mode |
| Operating Modes :   |
| -> Normal Runtime   |
|   Safe Mode         |
+-----+
  
```

Select "Circulation Mode" using the up ↑ and down ↓ buttons and the enter button ↵

```

+-----+
| Status : Safe Mode |
| Operating Modes :   |
|   Safe Mode         |
| -> Circulate        |
+-----+
  
```

Quick Installation Guide

System now opens the valve or starts the pump until mode exits. Current flow of sample is shown on the display. If flow shows 0 it indicates no sample through the system yet.

```

+-----+
| Status : Circulating |
| Circulation Mode:   |
|   Current Flow = 82.75ml/min |
|   Exit with Enter or Back key |
+-----+

```

Exit the circulation mode by pressing back ← or enter ↵ button. System returns to Operating Modes menu and in Safe Mode.

Warning: Please ensure the device is not kept in circulation mode for more than 10 minutes.

- Runtime Mode

From the home screen enter the menu by pressing the enter button ↵

```

+-----+
| Status : Safe Mode |
| Menu :             |
| -> Operating Mode |
|   System Settings |
+-----+

```

Select "Operating Modes" using the up and down buttons and the enter button

```

+-----+
| Status : Safe Mode |
| Operating Modes : |
| -> Normal Runtime |
|   Safe Mode       |
+-----+

```

Select "Runtime Mode" using the up and down buttons and the enter button

```

+-----+
| Status : Initialise |
| Runtime :           |
|   Started Runtime Operation |
+-----+

```

System now starts the normal runtime operation.

Returning to home screen will show the latest data results and system information

MODBUS Integration

MODBUS integration can either be done via MODBUS RTU or MODBUS TCP.

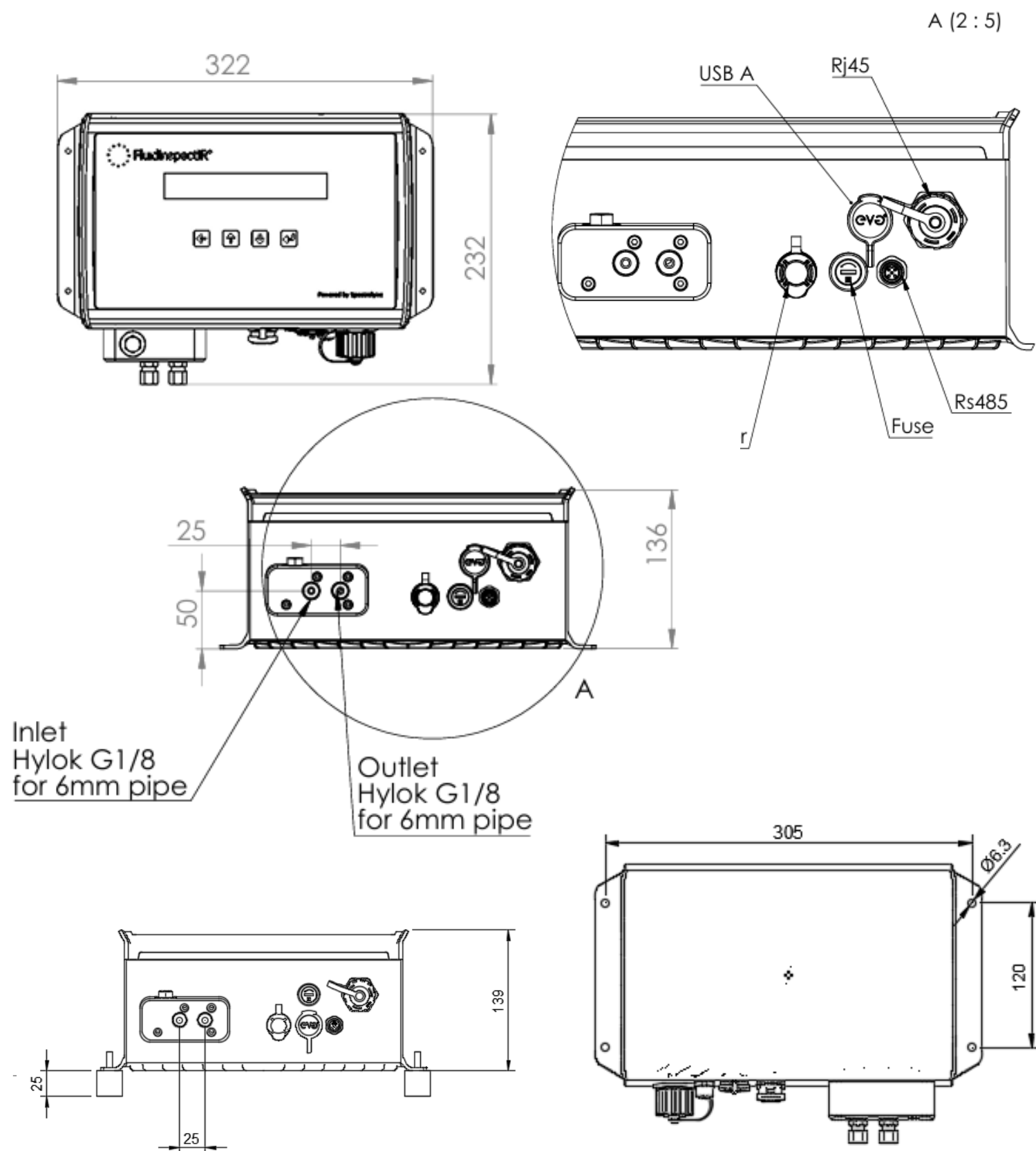
We recommend to verify and set up the MODBUS communication protocol prior to installing the FluidInspectIR_PLUS by using our dedicated system FluidInsepctIR_INT.

Default MODBUS Settings

- Modbus TCP
- Slave Address – 100
- DHCP Client
- Port – 502
- Modbus RTU (RS485)
- Baud Rate – 57600
- Data Bits – 8
- Stop Bit – 1
- Parity – None
- Bytes are stored Big Endian and Little Word order were applicable
- Each Parameter has the value stored as a float and an unsigned 32 bit integer
- For uint32 conversion take the value and divide by 1000 to get the floating-point value
 - Float = uint32 / 1000

Quick Installation Guide

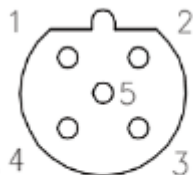
Technical Drawings



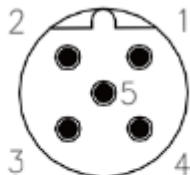
Quick Installation Guide

Pin Assignment 5 pol RS485 M12

- M12 female for RS485 Modbus communication (unterminated)



Pin assignment of the
Sensor connector

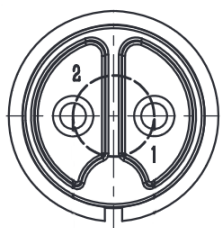


Pin assignment of the
Cable connector

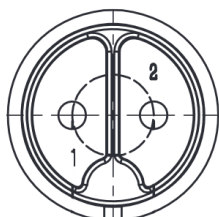
Pin	Function
1	+5V DC
2	A
3	GND
4	B
5	Shield

Pin Assignment 2 pol 24V DC Version

- 2 pol LP-16 02 Series female connector.
- Cable provided with open endings (pig tails)



Pin assignment of the
Sensor connector

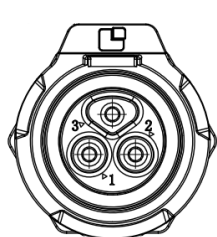


Pin assignment of the
Cable connector

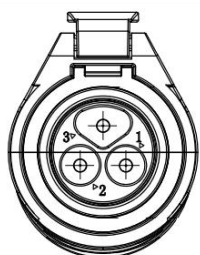
Pin	Function
1	24V
2	GND

Pin Assignment 3 pol 100-230V Version

- 3 pol LP-16 02 Series female connector.
- Cable provided with open endings (pig tails)



Pin assignment of the
Sensor connector



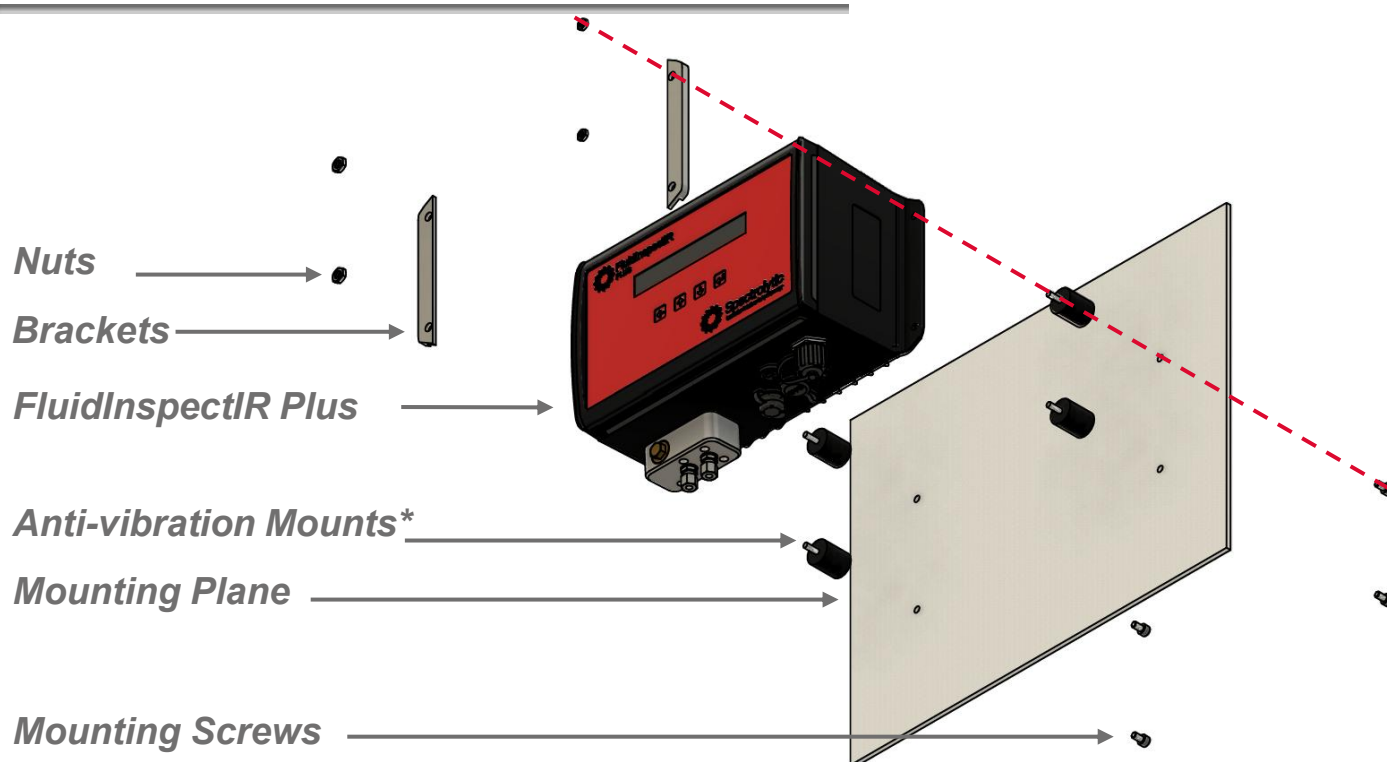
Pin assignment of the
Cable connector

Pin	Function
1	Live
2	Neutral
3	Earth

Note: For the 100–230V AC variant, Pin 3 (Earth PE) provides the protective earth connection through the power connector. For the 24V DC variant, the 2-pin connector does not include a PE pin - the chassis bonding conductor at the bottom-right mounting hole is therefore the sole protective earth connection for this variant. In both cases, a chassis bonding conductor must be connected to the bottom-right mounting hole using an M8 ring crimp terminal as described in Main System Installation Step 3. Both connections (where applicable) are required for safe and compliant operation.

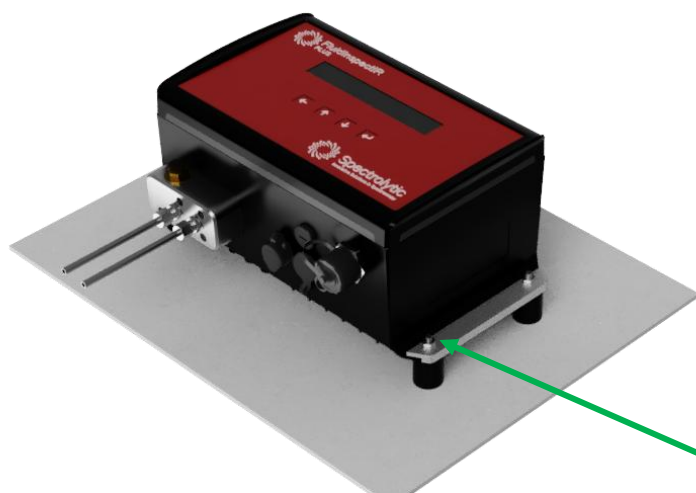
Quick Installation Guide

Mounting guide



* Anti-vibration Mounts orientation is flexible and should be adjusted to best suit the installation context

Horizontal orientation



Vertical orientation



Chassis earth (PE)
Attach M6 ring
crimp terminal here

**The extruding part of each
bracket is positioned along
the outer edge of the device
and is facing downwards**