

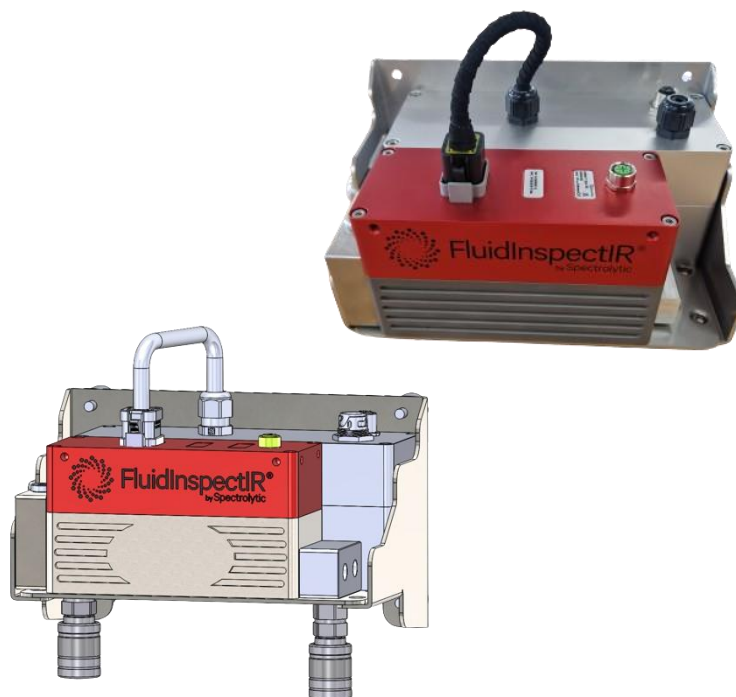
Product – Pump / Valve Version

The FluidInspectIR® Inline-mini is a compact system for real-time monitoring of the oil condition either as a stand-alone sensor or as part of a distributed network for multiple asset monitoring.

The FluidInspectIR® Inline-mini is a plug & play analyser and can be installed remotely in the oil circuit bypass line with sampling via an electric valve or with a pump from oil tank / reservoir.

The FluidInspectIR® Inline-mini can be used with any type of lubricant (mineral, PAO, PAG, Phosphate Ester, Polyolester)

It provides the user with key oil degradation parameters in the same format, units and accuracy as per standard oil analysis laboratory reports.



Summary Information

- Key parameters in oils and lubricants in gears, engines, turbines, hydraulic and transmission systems, metal working (see overleaf)
- Correlates to ASTM / DIN
- Oil temperature up to 120C, higher optional
- Pump or electric valve integrated.
- Viscosity sensor integration optional:
 - KV40C/100C range from 1cST to 320cST

Electrical / Mechanical Data

- Voltage: 85V to 240V AC or 24V DC
- Power: 60W Max
- Interfaces : Ethernet, RS485
 - Optional external LTE / WiFi
- LxWxH = 160mm x70mm x 100mm / 2.5kg
- Fluid Connections : G1/4 Female Thread
 - Optional quick release connectors (ISO 7241-A)

Key Benefits

- No need to use valuable resources for oil sampling
- Reduction in Human–Machine interaction
- Data driven maintenance resulting in
 - Reduce unplanned downtime
 - Extended oil drain intervals
 - Reduction of CO2 footprint
- Support for warranty claims
- Deep dive trends and parameter slopes for asset efficiency

Communication

- MODBUS (RTU, TCP), Profibus
- Master or Slave device
- Cloud integration via MQTT or Web API
- Azure &AWS integration, others optional;
- Direct integration into on-side controllers

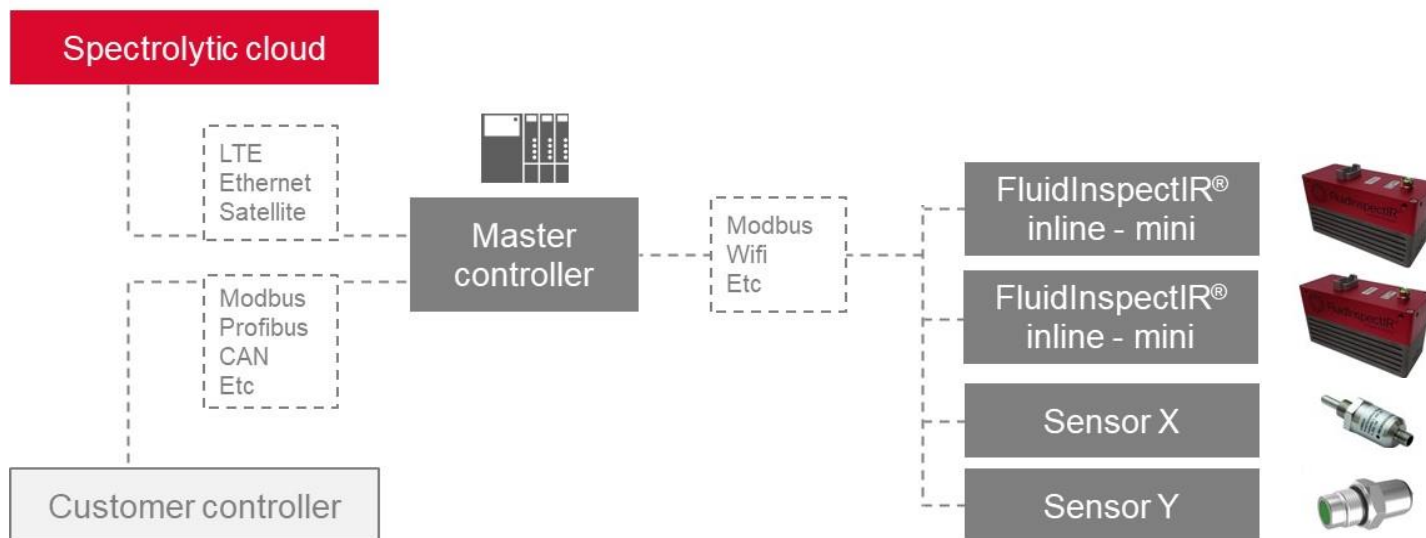
Oil Condition Sensor Parameters

- Measurable Parameters: Note that not all of these parameters can be measured all at once with same device.
- Repeatability: <+-5% of measured value
- Accuracy: <+-5% of measured value
- Methodology Default: DIN 51453/51451
– can be calibrated to ASTM/DIN
- Configurations available in common metal working applications for specialised additive packages and accurate water in oil measurements

Measurable Parameters	Correlates to Standard	Unit
Group I-IV Oils including PAO (PolyAlphaOlefins)		
Base Oil Changes		
Oxidation	ASTM E2412, DIN 51453	A/cm or A/0.1mm
Nitration	ASTM E2412, DIN 51453	A/cm or A/0.1mm
Suplhation	ASTM E2412, D7415	A/cm or A/0.1mm
Properties		
TBN	ASTM D664	mgKOH/g
TAN	ASTM D2896	mgKOH/g
ipH		
Viscosity	ASTM D445	mm ² /s
Additives		
ZDDP AW	ASTM E2412	A/cm or A/0.1mm
Phenol / Amine AO	/	%
Others Upon Request	Correlates to reference analysis	A/cm or A/0.1mm, mg/kg or %
Contaminants		
Soot	ASTM E2412	A/cm or A/0.1mm, wt%
Water	ASTM E2412	A/cm or A/0.1mm, wt% or ppm
Ethylene Glycol	ASTM E2412	A/cm or A/0.1mm, wt%
Diesel	ASTM E2412	A/cm or A/0.1mm, wt%
Gasoline	ASTM E2412	A/cm or A/0.1mm, wt%
Group V Polyolester and Phosphate Ester		
Ester Breakdown 1	ASTM E2412	A/cm or A/0.1mm
Water	ASTM E2412	A/cm or A/0.1mm, ppm
Phenol AO	/	%
Amin AO	/	%
TAN	ASTM D2896	mgKOH/g

Distributed Network

- The system can form part of a distributed network that can contain an array of systems and other sensors(Optical particle counter, wear sensor etc) all controlled by a master box.



Pin Assignment 5 pol M12

- M12 female for ethernet communication with PoE+ following IEEE 802.3at standard
- M12 to standard RJ45 ethernet cable available for easier integration.



Pin assignment of the Sensor connector



Pin assignment of the Cable connector

Pin	Function
1	Tx +
2	Rx +
3	Tx -
4	Rx -
5	n.c.

Pin Assignment 4 pol M12

- M12 female for RS485 communication and DC power supply
- M12 cable with comms and power separator available



Pin assignment of the Sensor connector



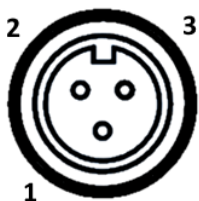
Pin assignment of the Cable connector

Pin	Function
1	24V DC
2	GND
3	D+
4	D-



Pin Assignment 3 pol Bulgin

- Bulgin 3 pol male connector. Buccaneer 4000 series (PXP2010)
- Cable provided with open endings (pig tails)



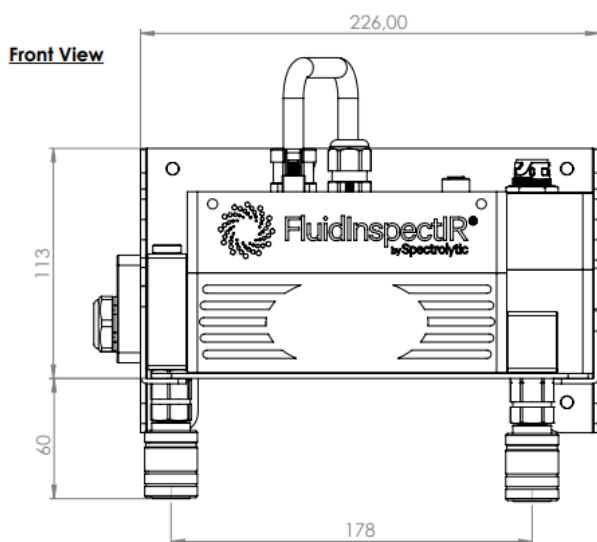
Pin assignment of the
Sensor connector



Pin assignment of the
Cable connector

Pin	Function
1	Earth
2	Neutral
3	Live

Technical Drawings



Left Side View

