

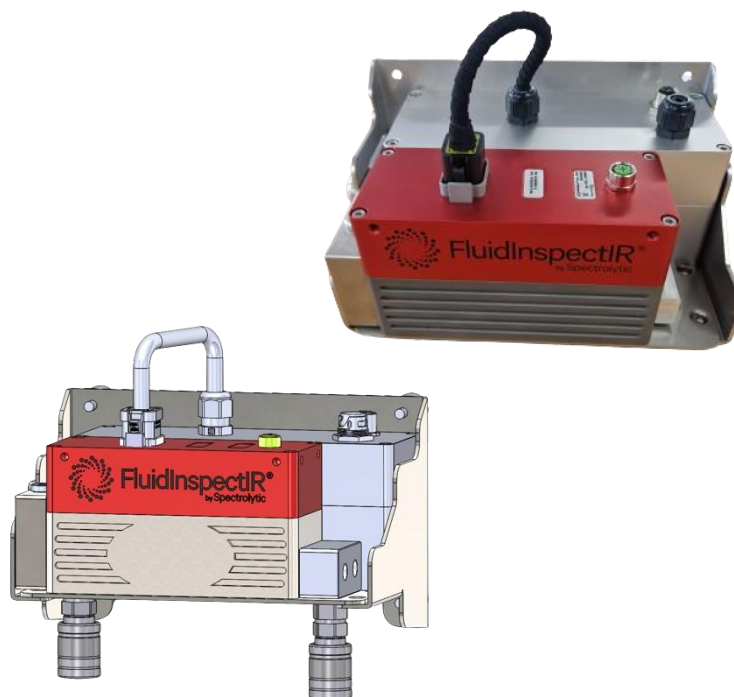
## Product – Pump / Valve Version

The **FluidInspectIR<sup>®</sup>\_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<sup>®</sup>\_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<sup>®</sup>\_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

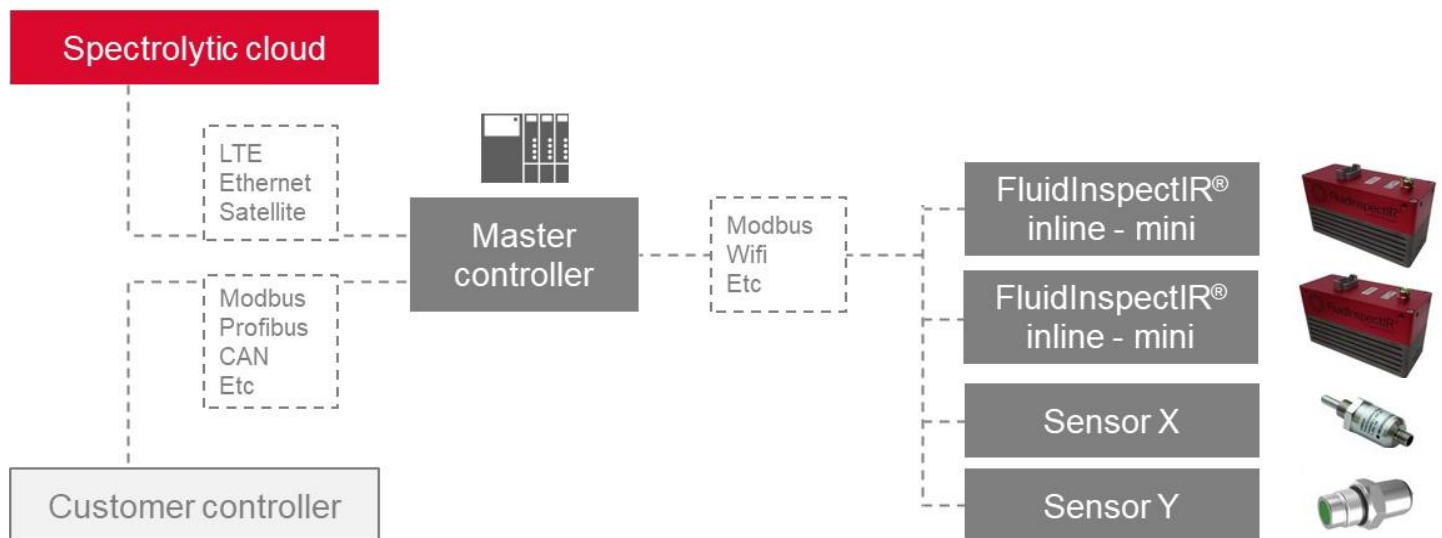
## Typical Oil Condition Sensor Parameters

- Measurable Parameters: Note that not all of these parameters can be measured all at once with same device.
- Repeatability: <math>\pm 5\%</math> of measured value
- Accuracy: <math>\pm 5\%</math> 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
  - Aluminium Rolling additives
  - Water based cooling and cleaning solution parameters such as Brix%, % concentrate and additives.

Base Oil Changes	Additives	Contaminants
Oxidation (abs/cm)	Anti-oxidants % (phenol/amine/ZDDP)	Soot (wt%)
Nitration (abs/cm)	Anti-wear % (ZDDP)	Water (ppm)
Sulphation (abs/cm)	Others upon Request	Ethylene Glycol(ppm)
TAN (mgKOH/g)		
TBN(mgKOH/g)		
ipH(mgKOH/g)		
Kinematic Viscosity 40/100°C (cSt)		

## 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.

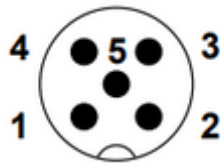


## Pin Assignment 5 pol M12

- 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)



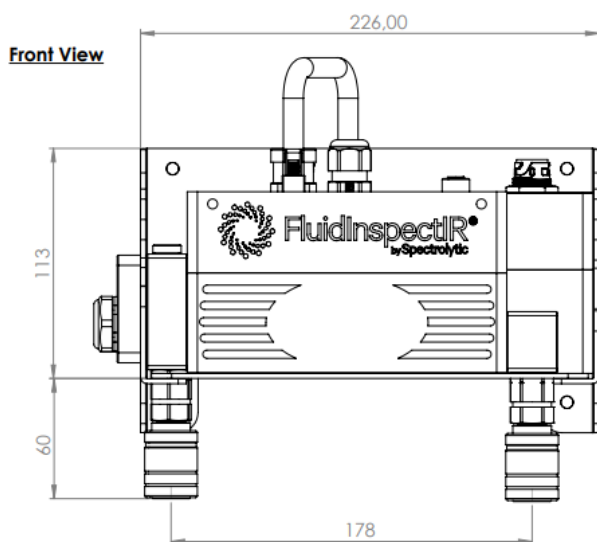
Pin assignment of the  
Sensor connector



Pin assignment of the  
Cable connector

Pin	Function
1	Earth
2	Neutral
3	Live

## Technical Drawings



Left Side View

