

Product

Introducing the FluidInspectIR®_MINI, a plug & play inline Oil Condition Monitoring System designed for all lubrication systems on **mobile vehicles**. This innovative system boasts exceptional temperature control and on-system edge computing, enabling seamless transmission of parametric data directly to the vehicle's control system.

One of the standout features of the FluidInspectIR®_MINI is its versatility. Compatible with a wide array of lubricants such as mineral, PAO, PAG, Phosphate Ester, and Polyolester, this system ensures users can effortlessly monitor different oil types without limitations.

Furthermore, users benefit from the system's advanced capabilities in delivering crucial oil degradation parameters in a user-friendly format. With consistent units and accuracy comparable to standard oil analysis laboratory reports, monitoring oil condition has never been more accessible.

Stay ahead of the curve and take charge of your oil maintenance with the FluidInspectIR®_MINI. Stay informed, stay proactive.



Summary Information

- Key OCM parameters in lubricants on mobile vehicles.
- Exceptional Temperature Control
- Embedded Predictor / edge computing functionality
- Oil temperature up to 120C, higher optional

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

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)

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

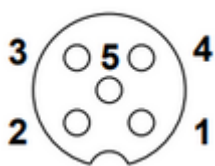
Typical Oil Condition Sensor Parameters

- Measurable Parameters: Note that not all of these parameters can be measured all at once with same device.
- Repeatability: $\pm 5\%$ of measured value
- Accuracy: $\pm 5\%$ 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
 - 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)		

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

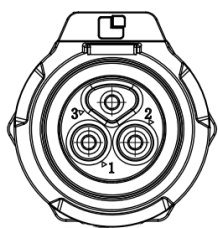


Pin assignment of the
Cable connector

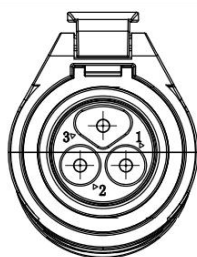
Pin	Function
1	24V DC
2	GND
3	D+
4	D-

Pin Assignment 3 pol 100-230V AC

- 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