

Portable Battery operated fuel & oil cleanliness analyser **Patrick Pal**

- Instant oil cleanliness monitoring
- Optimised for use with Hydrotechnik 5060*plus* / 5070
- ISO, SAE & NAS readout
- Connect offline or online (350 bar)
- 3000 reading internal memory
- 4-20mA & CAN datalogging output
- Battery operated & rugged



The ideal field service tool for real time oil cleanliness monitoring. Use offline with oil samples or connect to systems running up to 350 bar for instant cleanliness readout. Direct to PC, 4-20mA or CAN output allow for flexible datalogging options.

Plant Engineering
Industrial machinery
Agricultural machinery
Hydraulics
Automotive

Patrick Pal fuel & oil cleanliness monitor

Whether on site or in the laboratory, our range of self contained oil and fuel cleanliness monitors will provide instant ISO, SAE or NAS cleanliness code data of your oils or fuels. Sample from fluid tanks, pressurised systems or sample bottles to analyse quickly and accurately, minimising the frequency or need for laboratory analysis. Built in CAN/RS232 and 4-20mA connections allow for many different data capture options, either direct to PC, any display or instrument. Optimised for use with the Hydrotechnik MultiSystem 5060plus, cleanliness data can be recorded in real time along with pressures, flow rates, temperatures etc. 3000 readings can be stored internally for long term system cleanliness logging.

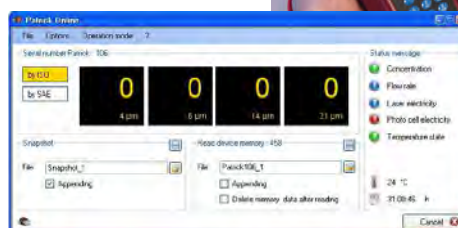
Patrick-Pal Component Identification



The Patrick-Pal comes equipped with Minimesse® 1604 Test Points for safe, quick, leak free, hand tight only connection



The Patrick-Pal-HP option allows connection directly to a running high pressure system up to 350 bar max using an optional pressure reducing valve and simply fits to the inlet Minimesse® connection.



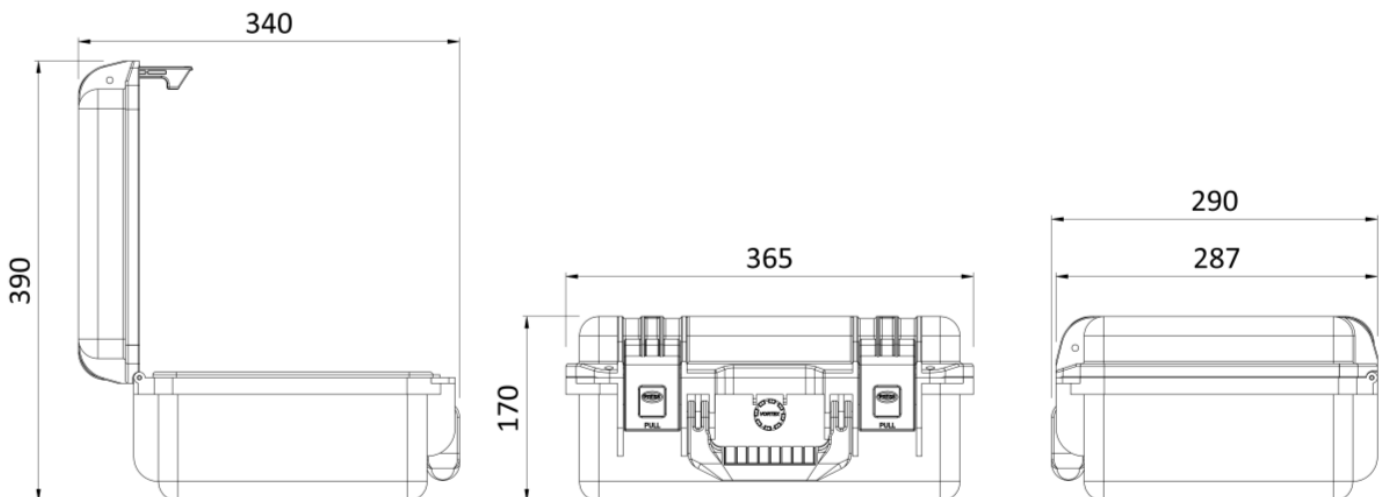
CAN, 4-20mA and USB outputs offer a multitude of logging options to Hydrotechnik dataloggers, standard plc/instrumentation & Windows PC's

1.) On/Off Switch
2.) Charging port
3.) CAN/RS232 Output Connection
4.) Patrick Particle Counter
5.) 4-20mA Output Connection
6.) Outlet (1604 Minimesse® Test Point)
7.) Suction / Inlet (1604 Minimesse® Test Point)

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Technical Specifications

Specification	Detail
Dimensions	(w)365 mm x (d)290 mm x (h)170 mm
Weight	5.5 kg
Finish	Black HPX resin
Nominal Battery Voltage	15.0 VDC
Charge Voltage	16.8 VDC
Capacity	5.2 Ah
Charge time	2 hours (80%) 5 hours (100%)
Run time	3 hours
Modes of operation	Tank sampling Bottle sampling (1000ml minimum sample bottle recommended)
Cleanliness standards	ISO 4406, NAS 1638, SAE AS4059
Pump type	Gear pump
Duty cycle	Continuous
Viscosity range	1-320 cSt
Fluid compatibility	Diesel & oil (hydraulic, lubrication, mineral, synthetic)
Fluid temperature	-10 to 55°C (oils) -10 to 50°C (diesel)
Connections	1604 Minimes® test points, with 0.6m long 8mm tubing
Pressure	2.5 bar max (up to 350 bar with optional High Pressure device)
Operating temperature	0°C to +50°C
Environment	Lid closed – IP67 Lid open – IP54
Maximum humidity	97% relative humidity, non-condensing
Certification	Factory calibration certificate CE declaration
Verification frequency	12 months recommended



Patrick-ACC-KIT I Accessories Case

The Patrick-ACC-KIT I is an essential piece of equipment to allow for best practice and repeatable preparation of oil samples prior to running through the Patrick-Pal particle counter. The hotplate allows for stable heating of oil samples and comes with a magnetic stirrer included. A viscosity cup & temperature probe allows for checking simply if the oil is too thick or too cold to run through Patrick and requires further heating. Sample flasks and bottles allow for removing air bubbles prior to testing using the vacuum pump, flasks and piping assembly. Essential items for preparing oil samples to the optimum repeatable conditions on site or in the lab are all included.



1.) Hotplate (requires mains power)	8.) Stoppers with 8mm hole (x2)
2.) Temperature probe	9.) Viscosity cup
3.) Magnetic stirrer	10.) 350 bar pressure reducing valve (sold separately)
4.) 100mm wide funnel	11.) Solid stoppers (x2)
5.) 100ml sample bottles (x2)	12.) 500ml flasks (x2)
6.) Sampling/vacuum pump	13.) Storage compartment for hoses and cables with lockable lid
7.) USB memory stick	