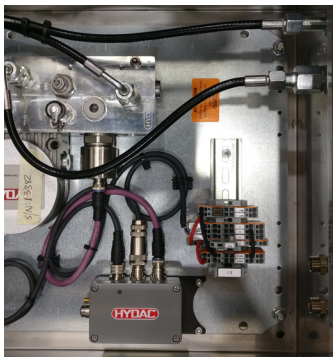
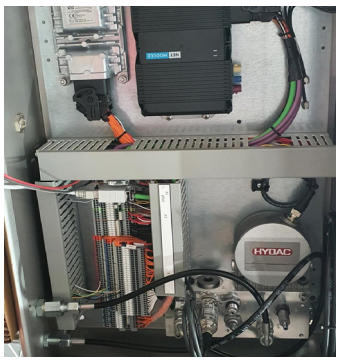
HYDAC INTERNATIONAL





CMExpert Hydraulic Mobile CME-M2000

Description

The CMExpert Hydraulic Mobile (CME-M2000) fluid condition monitoring unit is designed to provide a complete package solution for mobile vehicle's hydraulic and lubrication system monitoring. The CMExpert Hydraulic Mobile combines air bubble suppression with oil condition sensors and multiple communication options in a unit that can be installed with minimal impact on an existing system.

The package can be installed in both low pressure and high-pressure systems (maximum pressure is 250 bar) as the sensors are protected from pressure and flow fluctuations. System options include 12V or 24 V electric motor power option.

It is available in three different communication package options: Level 1, Level 2 and Level 3. Level 1 option includes local monitoring with CSI-C-11. Level 2 option is local and cloud monitoring with embedded gateway (NG800) and Hydac IO module (HY-TTC32). Level 3 option is also local and cloud monitoring with embedded gateway (NG800) and PLC.

The CS1000 and Aqua Sensor in combine provides following monitored parameters:

- Particle count
- Saturation level
- Temperature

Technical Specifications:

Hydraulic Data

Maximum Pressure Pump Inlet	80 bar
Pump Outlet	50 Bar
Pump Drain	<0.5 Bar
Manifold Return	20 Bar
Minimum Inlet Pressure	Pump inlet conditions must have a positive $NPSH_A$. For applications that may result in a vacuum suction state, please contact HYDAC.
Hydraulic Connections System Inlet	3/8" BSP Male
System Outlet	1/4" BSP Male
Pump Inlet	1/8" BSPP Male
Pump Outlet	1/8" BSPP Male
Pump Drain	1/8" BSPP Male
Permissible viscosity range	10 – 500 cSt For higher viscosities, please contact HYDAC. Consider start-up delays to allow the system to warm-up the oil.
Nominal flow rate	~240 ml/min
Permitted fluids	Hydraulic and lubrication fluids based on mineral oil. For other fluids please contact HYDAC.
Pump type	Internal gear pump
Fluid temperature range for operation	0°C – 70°C

General Data

Protection Class	IP65 on control panel. If a higher IP rating is required, please contact HYDAC.
Ambient temperature range	0°C – 50°C
Storage temperature range	-20°C – 65°C
Relative humidity	0 – 70%
Kit Weight	~40kg

Model code

CME - M2000 - 1 - 0 - 0 - 0 - 1 - 0

Series Number

Communication Package

1 = Level 1 - Local (CSI-C-11)
2 = Level 2 - Local and Cloud with IO (NG800 + HY-TTC32)
3 = Level 3 - Local and Cloud with PLC and/or IO (NG800 + PLC and/or HY-TTC32)

Manifold Material

0 = Aluminium (<250 Bar Operating Pressure)

Electric Motor

0 = 24VDC 1500 RPM
1 = 12VDC 1500 RPM

CSI-C-11 Input Options

0 = CSI-C-11-0-0-0/-000 Standard (Level 1)
1 = CSI-C-11-0-0-1/-000 Additional Analogue Inputs (Level 1)
2 = No CSI-C-11 (Level 2 & Level 3)

Sensor - HLB/AS

0 = HLB1400 Hydac Lab
1 = AS1000 Aquasensor
2 = No HLB/AS Sensor

Sensor - CS1000

0 = CS1210 - Contamination Sensor, without display.
1 = CS1220 - Contamination Sensor, with display.
2 = No CS1000 Sensor

*Contact HYDAC for further information.

Australian marketed range

2363617 CME-M2000-1-0-0-0-1-0
2363618 CME-M2000-2-0-0-2-1-0

System connectivity levels

For level 1, additional 4-20 mA sensors can be configured. For Level 2 or Level 3, Additional sensors can be installed to the control panel dependant using HY-TTC32, extra wiring may be required; including signals (4-20mA/ 0-10V), frequency (value and pulse count), digital IOs (Pull-up/ Pull-down). Moreover, existing systems' sensors data can be integrated using communication methods like Modbus TCP/IP and raw CAN signals.

All the measured values are made available via Modbus (TCP/IP) across an Ethernet connection or WiFi signal.

The CME-M2000 kit includes the following items:

- Control panel
  - Connectivity package (Level 1/2/3)
  - Power distribution
  - CME-AU Manifold
- DC Electric motor c/w bellhousing & pump

Level 1 System Connectivity

The Level 1 package includes a HYDAC CSI-C-11 communications module which interprets two HYDAC condition monitoring sensors (CS1000/AquaSensor/HYDAC LAB) and up to four 4-20mA Analogue sensors. The values are stored on the CSI-C-11, but made available in Modbus (TCP/IP) and HSI (HYDAC Sensor Interface) (TCP/IP) across an Ethernet connection or WiFi signal. The HSI signal can be interpreted by the FluMos PC software or the FluMos mobile app, providing access to the logged data and a visual interface of numerical sensor values and graphed sensor values.

Level 2 System Connectivity

The connectivity of the Level 2 system is based on a rugged embedded gateway (NG800), which has been equipped with software to provide access to our online dashboard. This dashboard can be customised by HYDAC to suit your requirements to show sensor values, data trending and the addition of end-user customisable alarm points.

To fully utilise the dashboard, a HY-TTC 32 controller is included in the package allowing easy expansion with many inputs beyond the standard HYDAC condition monitoring sensors.

Features

- Inputs:

- 5 x 4-20mA Analog inputs (3 Reserved for the CS1000 and AS1008 sensors)
- 4 x 0-10V Analog inputs
- 2 x Analog frequency input (Pull-up)
- 2 x Analog frequency inputs (Pull-down) or 1x Analog count and 1x Frequency
- 8 x Digital inputs, pin logical output possible to inverse in software (Pull-up)
- 6 x Digital inputs, pin logical output possible to inverse in software (Pull-down)

- Local configuration by any device with an internet browser and Wi-Fi.

- Local communications for sensor values possible using Modbus (TCP) and CAN

- 10 x Digital and 10 x Analog Modbus (TCP) channels
- 10 x Digital and 10 x Analog raw CAN channels

- SMS & E-mail alarm notifications

- CME-M2000 gateway is 3G/4G/Wi-Fi capable

Level 3 System Connectivity

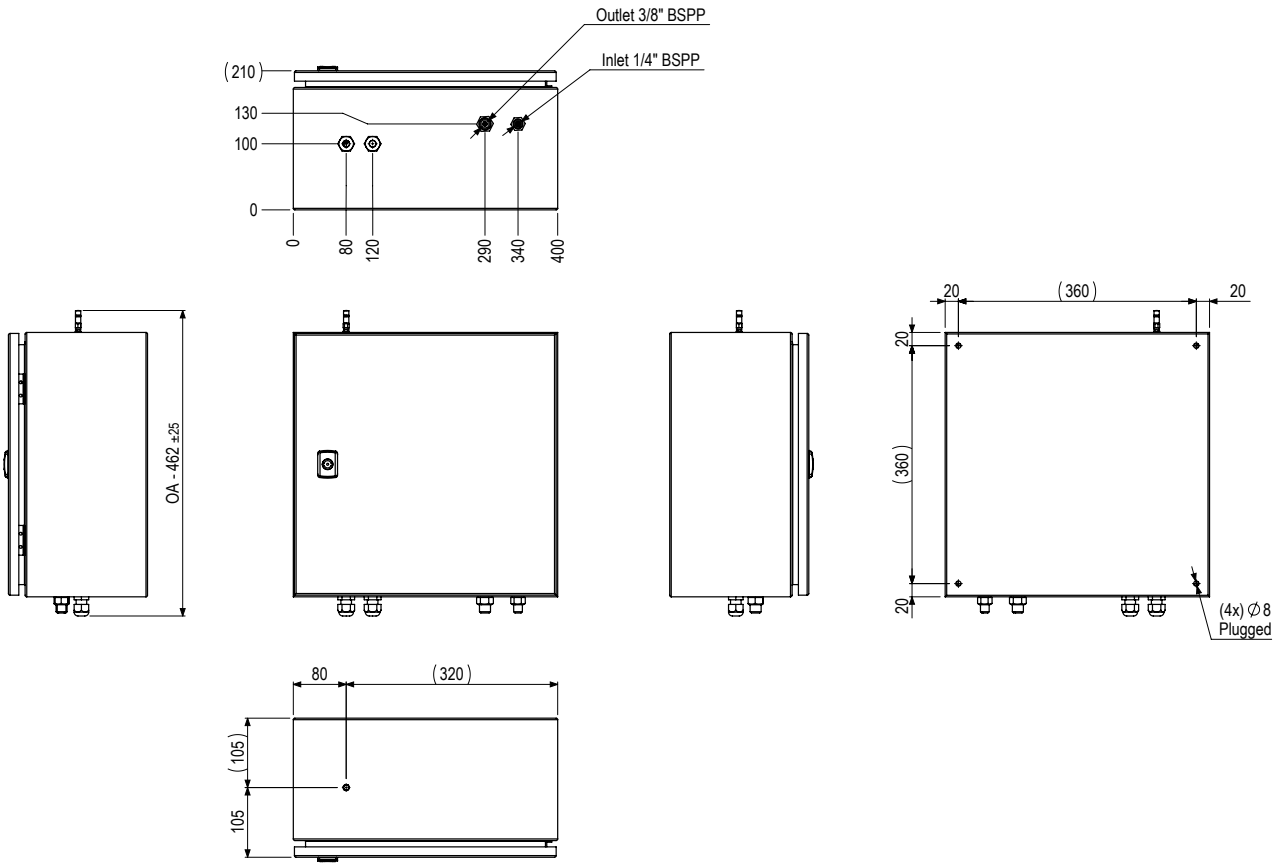
The Level 3 offering is an application-specific solution that provides Local and Cloud monitoring. It has embedded gateway (NG800) and it utilizes industrial PLC that may already exist in the customer system or Hydac can also provide PLC system. Furthermore, with the potential of many inputs, the IO module (HY-TTC32), Level 1 CME-M2000, etc. can also be incorporated to provide full functionality.

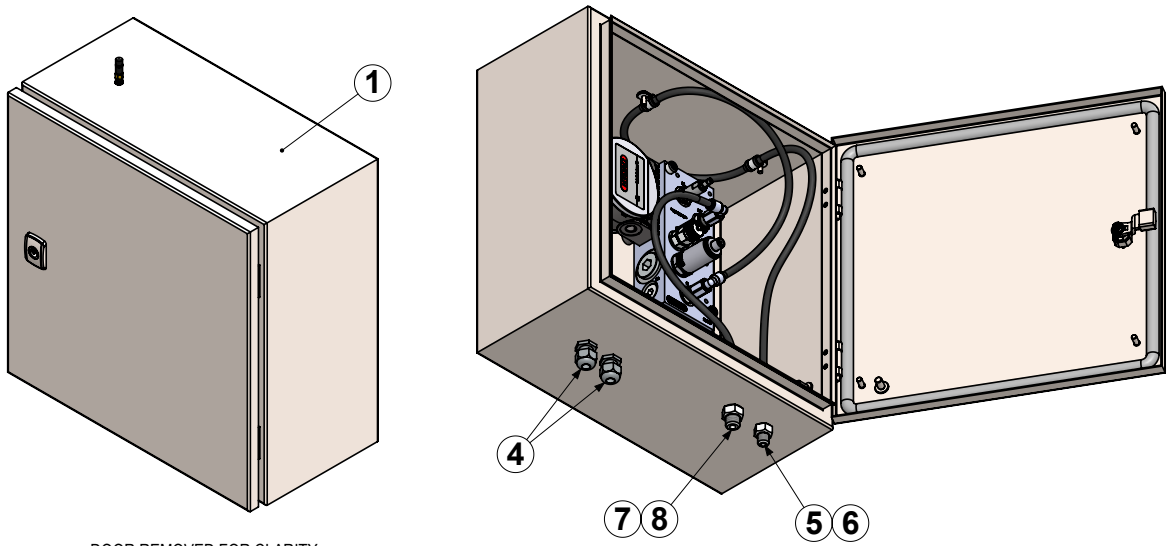
Should an application require a large volume of sensors, or consists of many small installations that require individual monitoring, the Level 3 solution can combine all of the various inputs and upload it to a single overseeing dashboard.

Please contact HYDAC for further information and assistance.

Drawings

2363617 CME-M2000-1-0-0-0-1-0





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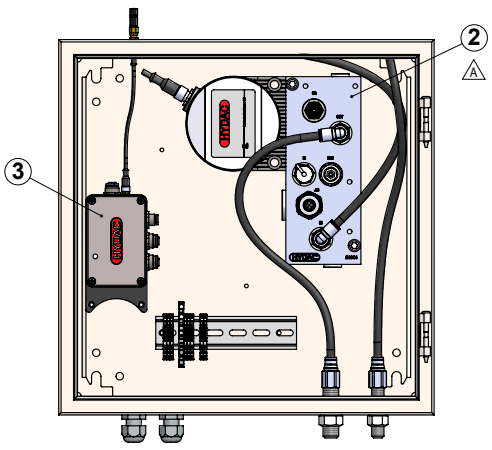
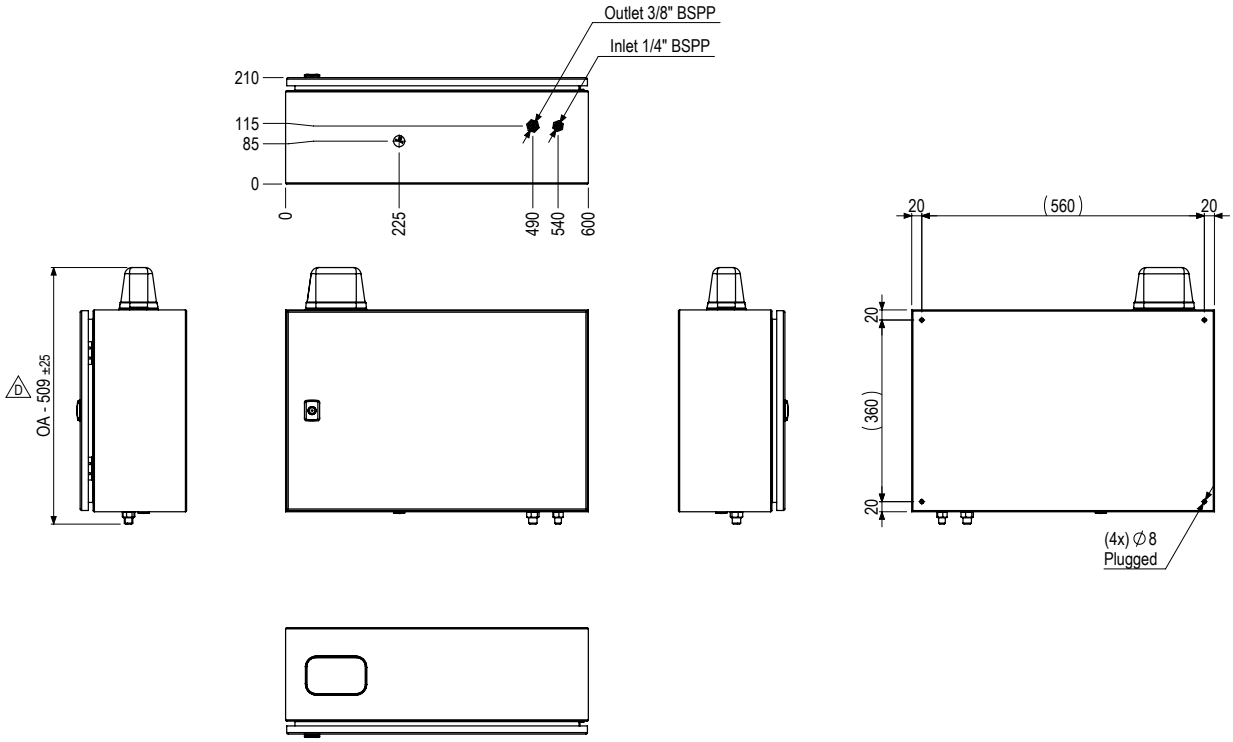
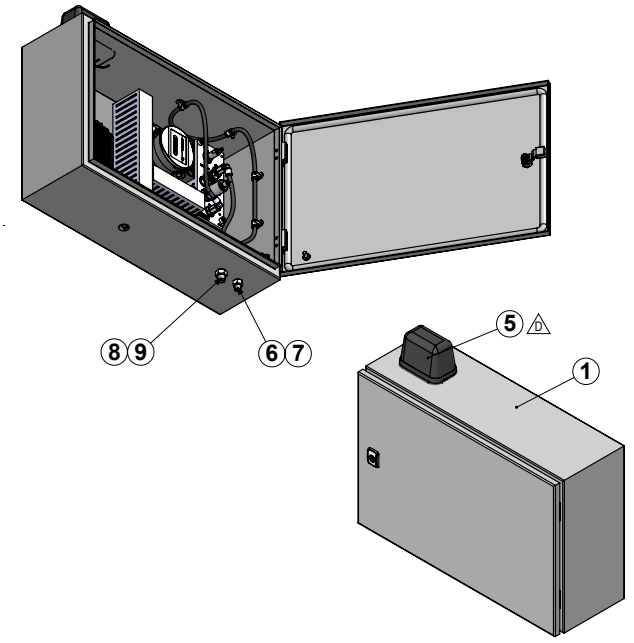
SCALE 1 : 5

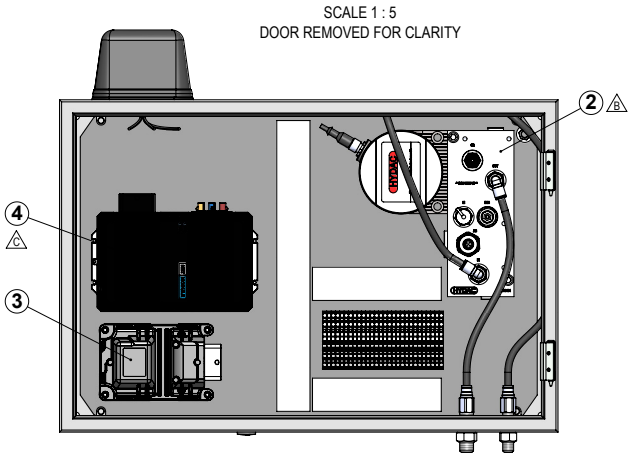


Drawings

2363618 CME-M2000-2-0-0-2-1-0







Note

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

HYDAC Australia / New Zealand

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