HYDAC INTERNATIONAL

CM-Expert Hydraulic
CME-AU2000

Description

The CMExpert Hydraulic fluid condition monitoring unit was designed to provide a complete package solution for hydraulic and lubrication system monitoring. The CMExpert Hydraulic 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 as the sensors are protected from pressure and flow fluctuations.

System options include use of a HYDAC AquaSensor or HYDAC Lab, LED display on the CS1000 particle counter, CSI-C-11 with 4 x analogue inputs (level 1 only). Methods of connectivity span Modbus TCP via Ethernet, local website via Wi-Fi. Additional functionality includes local website and datalogger, remote cloud database and website; and alert notification via Email and SMS (level 2 and 3 only).

Standard Monitored Parameters Include:

- Particle count
- Absolute conductivity value
- Change in electrical conductivity
- Absolute dielectric constant value
- Relative change in dielectric constant value
- Also, saturation level
- And temperature

The 2000 series (Level 2 and Level 3) now offers easy expansion to include additional sensors (Eg. Pressure, Flow, Temperature, Vibration and more…) using Hy-TTC and optionally with existing sensors in your system using Modbus TCP and CanBus inputs.

Technical Specifications:

Hydraulic Data

	With Dosing Pump	Without Dosing Pump
Maximum Pressure System Inlet	80 bar	250 bar (Aluminum)
System Outlet	<0.5 bar	<10 bar
Minimum Inlet Pressure	0.8 bar (abs.)	> 40 bar
Hydraulic Connections	ISO 8434-1	ISO 8434-1
System Inlet	12L Metric Tube Compression	12L Metric Tube Compression
System Outlet	ISO 8434-1	ISO 8434-1
	8L Metric Tube Compression	8L Metric Tube Compression
Permissible viscosity range	10 – 500 cSt (1,000 cSt cold start)	10 – 500 cSt (1,000 cSt cold start)
	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	0°C – 85°C

General Data

	With Dosing Pump	Without Dosing Pump
Protection Class	IP54 on overall unit.	
	If a higher IP rating is required, please contact Hydac.	
Ambient temperature range	0°C – 45°C	
Storage temperature range	-20°C – 65°C	
Relative humidity	0 – 70%	
Weight	~40kg	

Model code

CME-AU 2000 - 1 - 0 - 0 - 0 - 0 - 0 - 0 - 0

Series Number

Communication package

1 = Level 1 - CSI-C-11.

2 = Level 2 - HY-TTC32 + Hydac Data Plus

3 = Level 3 - PLC + Hydac Data Plus*

Enclosure material

0 = Painted carbon steel

1 = 316 stainless steel

Manifold material

0 = Aluminium (<250 Bar operating pressure)

1 = Carbon steel, ENP

Dosing pump

0 = Pump with drain joined to outlet

1 = No pump (high stable pressure systems only)*

Electric motor (if pump included only)

0 = 415V 3 phase motor

1 = 240V 1 phase motor

3 = No motor (no dosing pump selected)

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

Sensor - CS1000

0 = CS1210 - Contamination sensor, without display

1 = CS1220 - Contamination sensor, with display

*Contact HYDAC for further information.

Australian marketed range

2364029 CME-AU2000-1-0-0-0-0-0-0

2363906 CME-AU2000-2-0-0-0-0-2-0-0

System connectivity levels

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 (available as an option when ordering) . The values are stored on the CSI-C-11, but made available via 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 HYDAC Edge Computing Device, which has been equipped with custom 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.

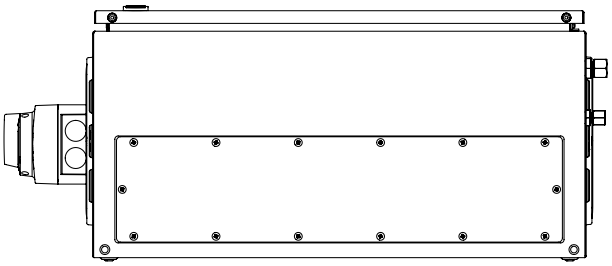
Features

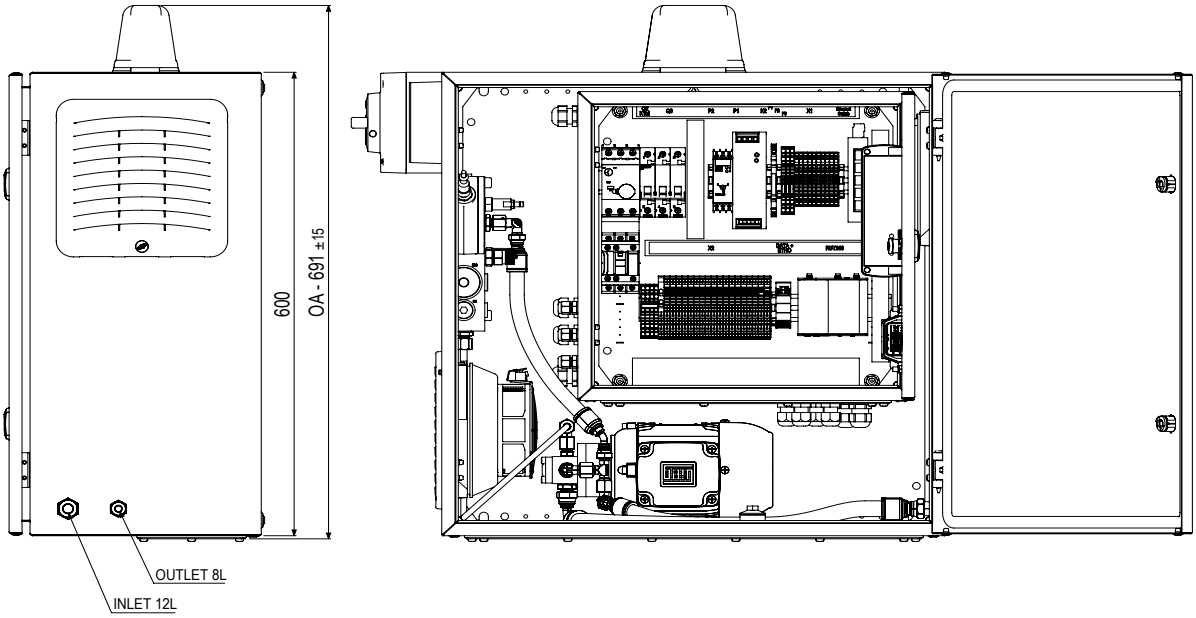
- Inputs:
  - 6 x 4-20mA Analog inputs (2 Reserved for the CS1000 and HLB1400 sensors)
  - 4 x 0-10V Analog inputs
  - 2 x Analog frequency inputs (Pull-up)
  - 8 x Digital inputs, pin logical output possible to inverse in software (Pull-up)
  - 8 x Digital inputs, pin logical output possible to inverse 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/RTU)
  - 10 x Digital and 10 x Analog Modbus (TCP) channels
- SMS & E-mail alarm notifications
- CME-AU2000 gateway is 3G/4G/Wi-Fi capable

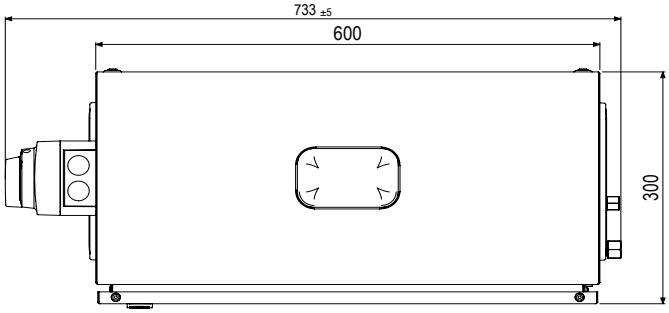
Level 3 System Connectivity

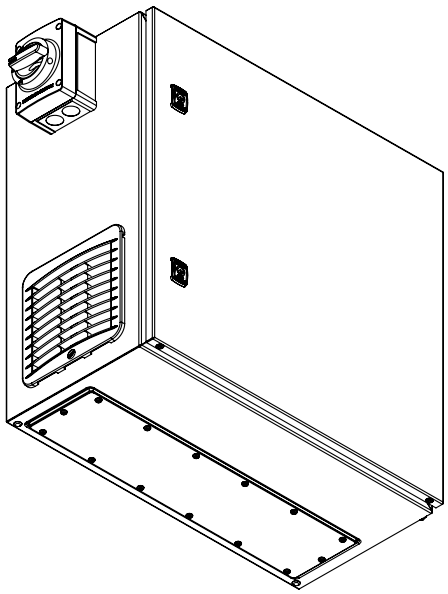
The Level 3 offering is an application-specific solution utilising a HYDAC Edge Computing Device and gateway with the potential of many inputs including other Level 1 CME-AU2000 units. Should an application require a large volume of sensors, or consists of many small installations that require individual 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.

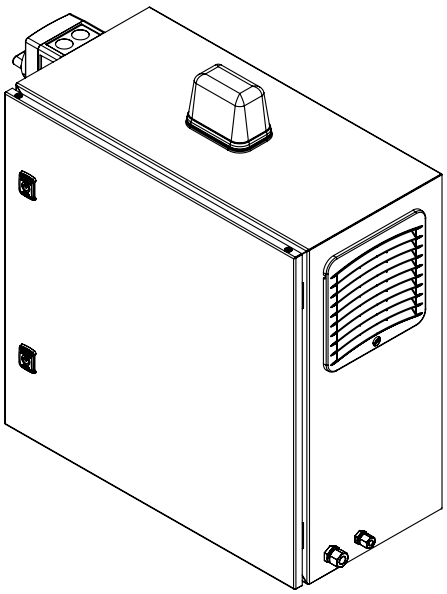
Drawings



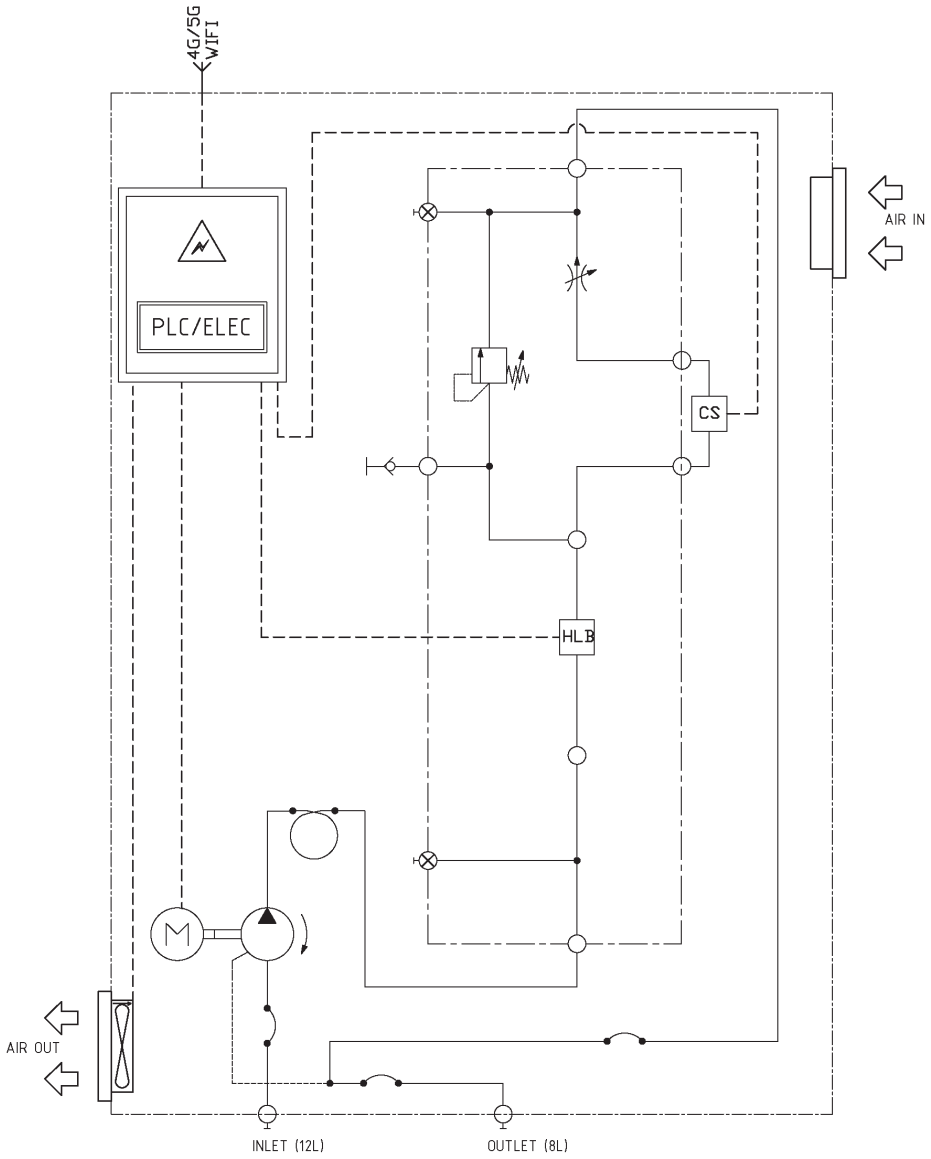








Schematics



Note: the hydraulic schematic shown above is an example of the level 2 model.

Note

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

Subject to technical modifications.

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