



**Unicla eDrive**

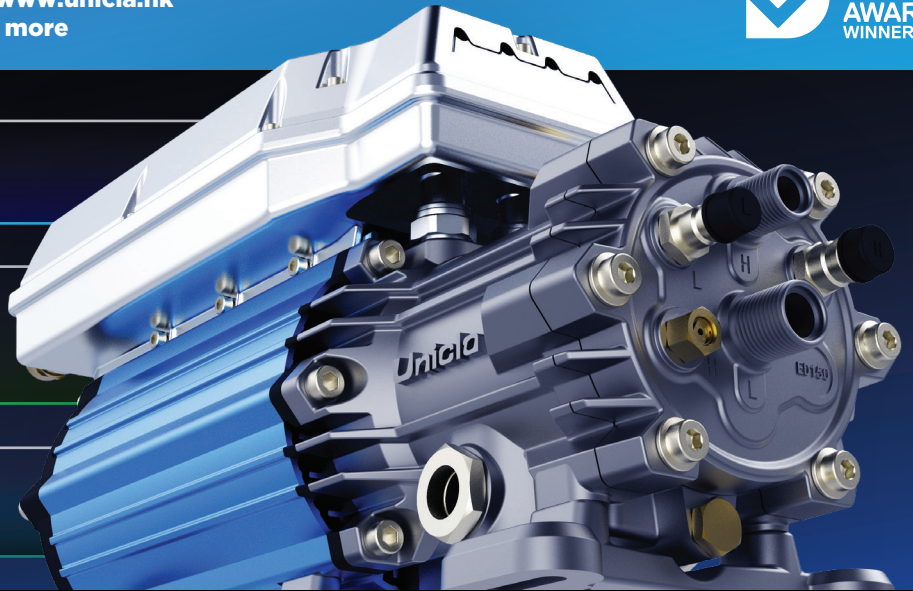
The revolutionary **electric compressor**.

**Unicla eConnect**

The primary **communication interface** between the technician and compressor.

**Unicla eControl**

The intelligent **compressor firmware**.



**Unicla eDrive**

**The revolutionary electric compressor.**

Unicla eDrive is an intelligent, industrial-grade electric air-conditioning and refrigeration compressor. Its patented, award-winning design with dual onboard pressure and temperature transducers is designed for both OEM and retrofit applications in mining, locomotive, industrial and off-highway machinery.

PCB and components manufactured to Class 3 standards

eControl firmware provides complete and flexible control

Extreme reliability and extended component life made possible by active thermal and pressure control

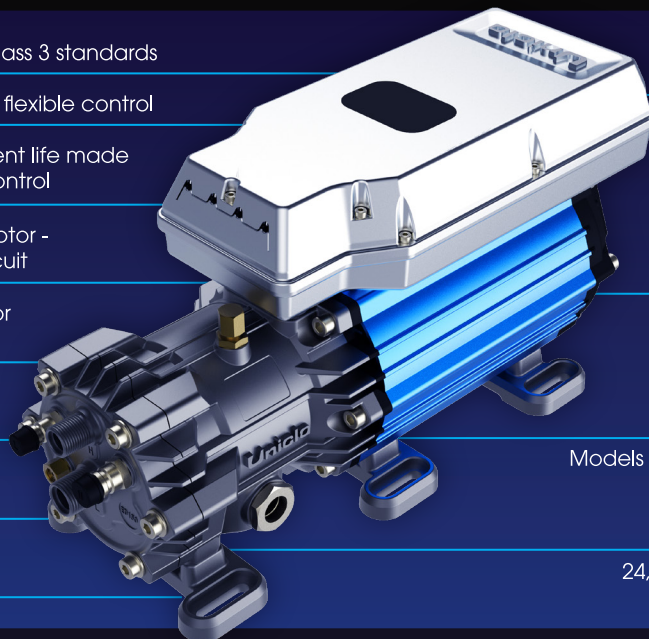
Brushless, sensor-less long-life air-cooled motor - completely separate to the refrigerant circuit

10-cylinder long-life washplate compressor with single piece, leak-free crankcase

Balanced internals with high volumetric and isentropic efficiency

Multi-refrigerant and multi-lubricant capable for ultimate flexibility

Smooth, vibration-free operation with low noise generation and transmission



**Communication**

CAN, RS485, USB, Ethernet, Bluetooth, 0-10 V dc, 420 mA, Run/Stop

**Refrigerants**

R134a, R404A, R513a, R452a, R1234yf or R1234yz

**Displacement**

Models available in 150 and 200 cc

**Voltages**

24, 48, 72, 400, 600 or 800 V dc

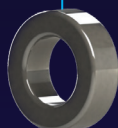
**Critical compressor components**

Dropped forged 5050 aluminium piston



Synthetic PTFE heat treated piston rings

Genuine Japanese made NSK bearings



Forged steel cylinder housing

Lip seal with high tolerance to heat and operational fatigue

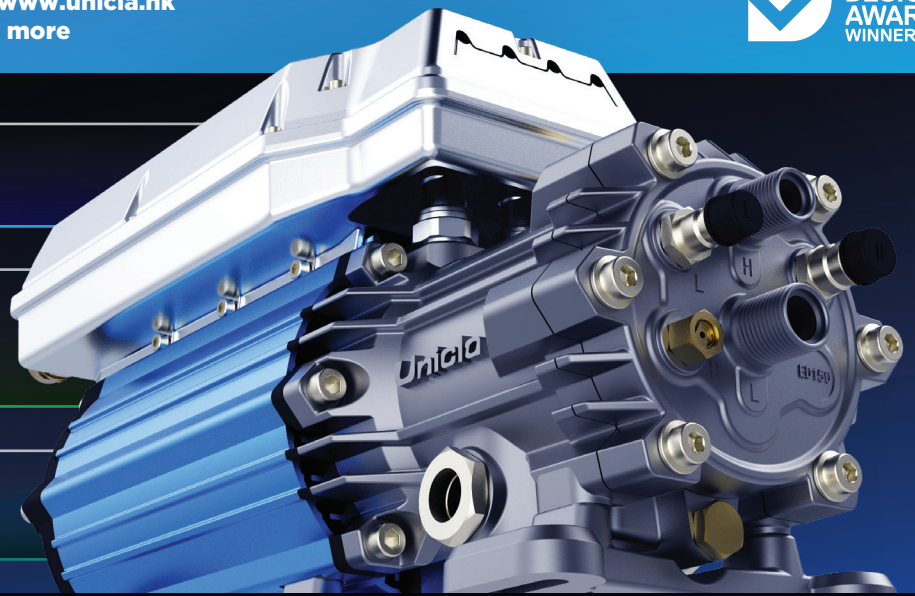


Each piston and cylinder housing matched by hand

10 cylinders

**Unconventional engineering for exceptional performance, reliability and efficiency.**

- Variable speed
- Flexible and adaptable mounting
- Retrofit to existing systems
- eConnect interface included
- eControl firmware included
- No additional firmware required
- Simple power connection
- Multiple control systems
- CANbus, USB and ethernet enabled



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**Unicla eConnect**

**The primary communication interface.**

Unicla eConnect is the primary communication interface that allows the technician to view, log and configure the eControl pressure, temperature and electrical operational parameters of the eDrive compressor and the system.

**Dashboard**

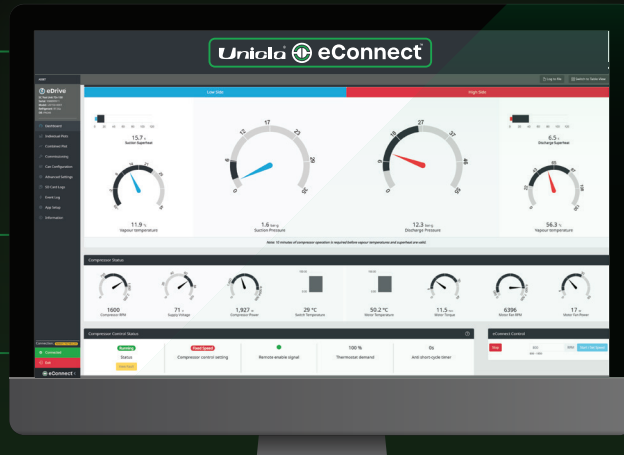
A simple, intuitive interface that provides total oversight and primary control of the compressor

**Plots (individual & combined)**

A viewing portal for all metrics of the eDrive in graphical form

**Information**

Important factory and statistical information regarding this eDrive



**Event Log**

A list of critical and non-critical events to help diagnose operational sequences and faults

**App Setup**

Configure app preferences and settings

**Commissioning**

Configure the desired operational behaviour

**Unicla eControl**

**The intelligent compressor firmware.**

eControl is a Unicla proprietary firmware split in three sections – Control, Protect and Adapt. It is embedded in the eDrive compressor hardware and is configurable via the eConnect communication interface. eControl uses the eDrive system measurements from on board dual pressure temperature transducers and various mechanical sensors from the DC motor and PCB hardware to manage the compressor and influence the desired system reliability, safety and operating behaviour.

**Control**

The primary layer of eDrive operational logic that is accessible and configurable in the eConnect commissioning tab.

- Fixed speed
- Variable speed
- Communication

**Protect**

A suite of user-configurable and factory-fixed safety limits that maintain the compressor durability and lifespan.

- Pressure
- Temperature
- Superheat
- Oil Balance System (OBS)

**Adapt**

A set of discrete functions that overlay the primary logic for a high-level control intervention.

- High Side Pressure protection
- Low Side Pressure protection
- Low Side Pressure control
- Power protection