

Complete direct-on-line motor control & protection.
Industry-leading space claim
Most compact solution in its class!

A cost effective motor management
solution for mobile electric plants

UberMate 2.0

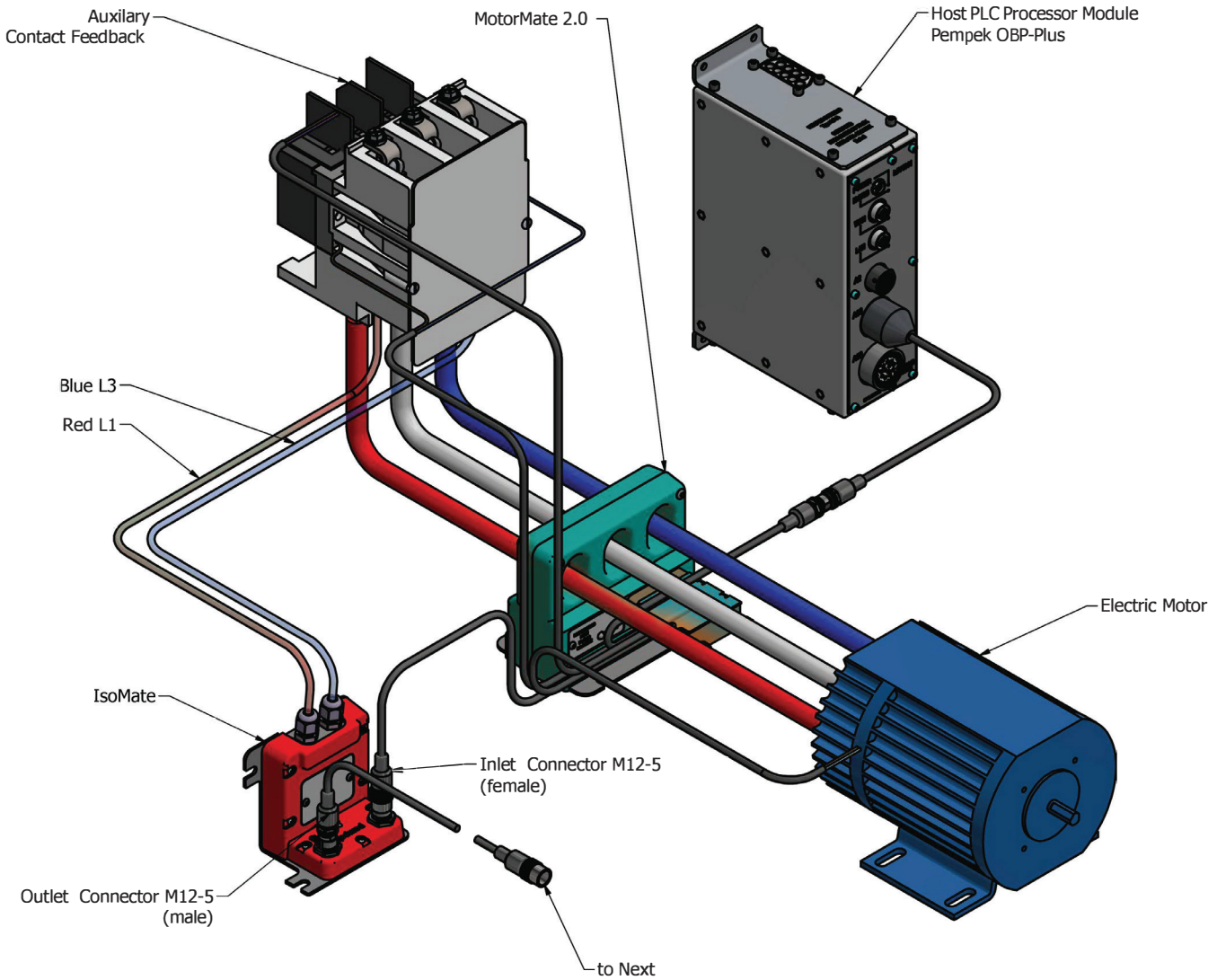
The PEMPEK UberMate 2.0:

Safe, reliable control of a contactor (motor starter)
Built-in 3-Phase motor current monitoring and temperature monitoring

Real-time configurable manual or automatic motor protection.

Electrical installation and maintenance has never been easier.

Simple, reliable, and safe DOL motor control

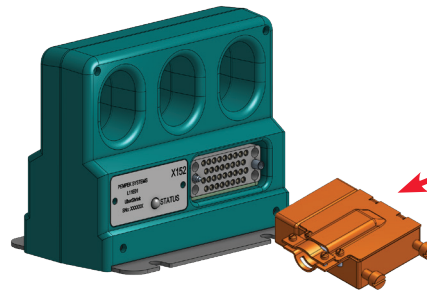
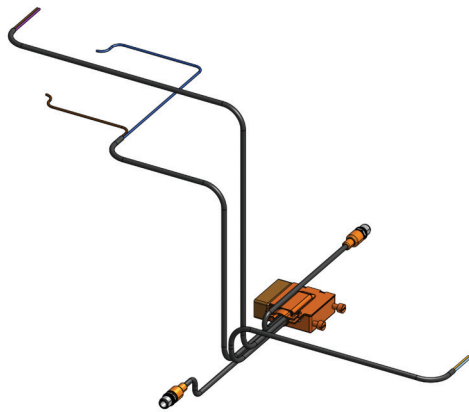


Factory-assembled cable assembly already takes care of CAN bus, contactor wiring and PT100 temperature sensor interfaces.

Wiring has never been so easy.

In case of a cable failure a replacement cable harness can be installed in a few minutes.

High Quality, Mine-Duty Connector Assembly with gold-plated pins



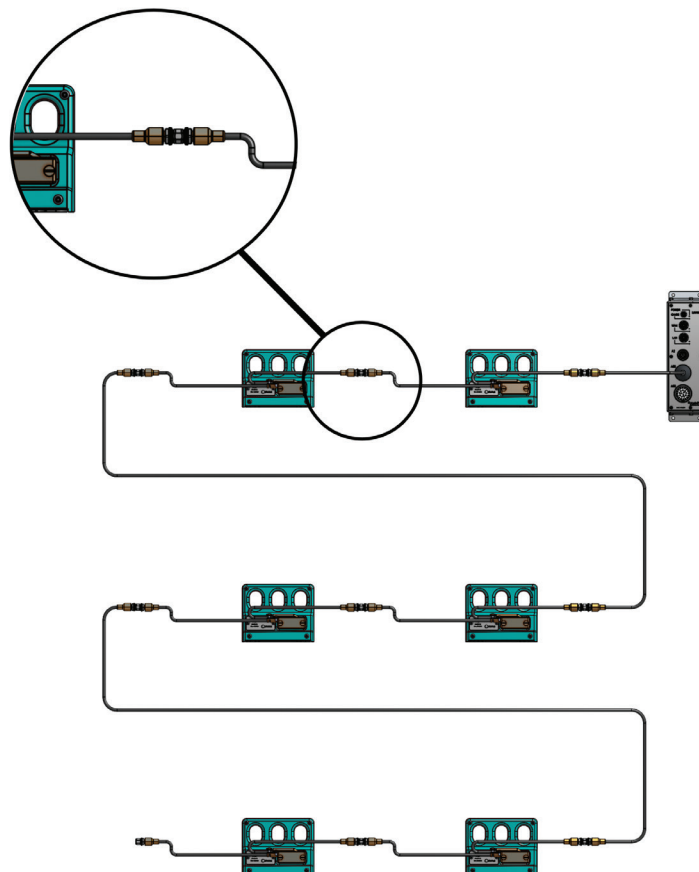
Positive locking jack screws keep connections in place under extreme vibration

More than one motor? Not a problem for UberMate 2.0.

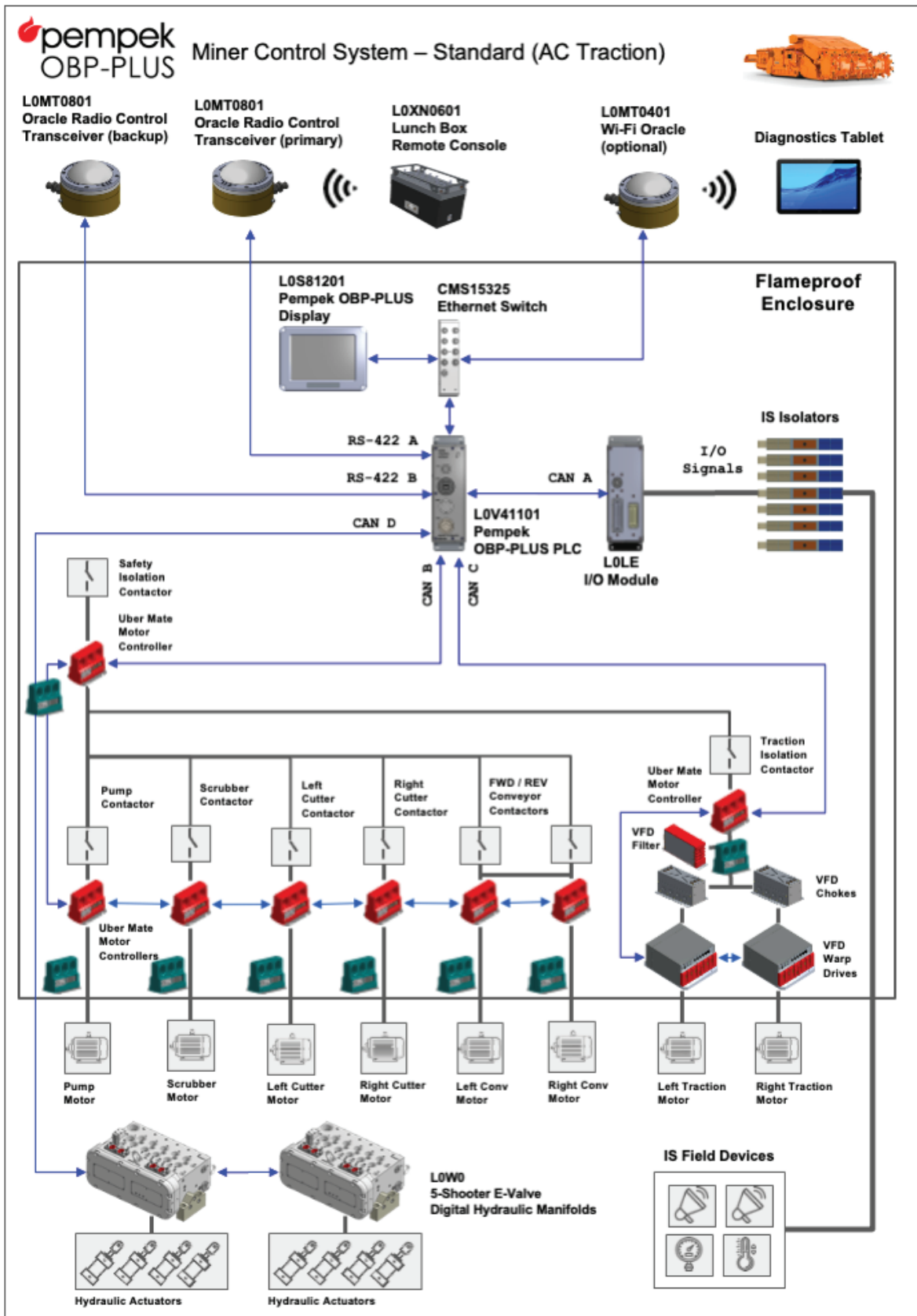
Just daisy chain your UberMates together!

Industry-standard CANopen connectors built into the cable harnesses – makes installation a breeze.

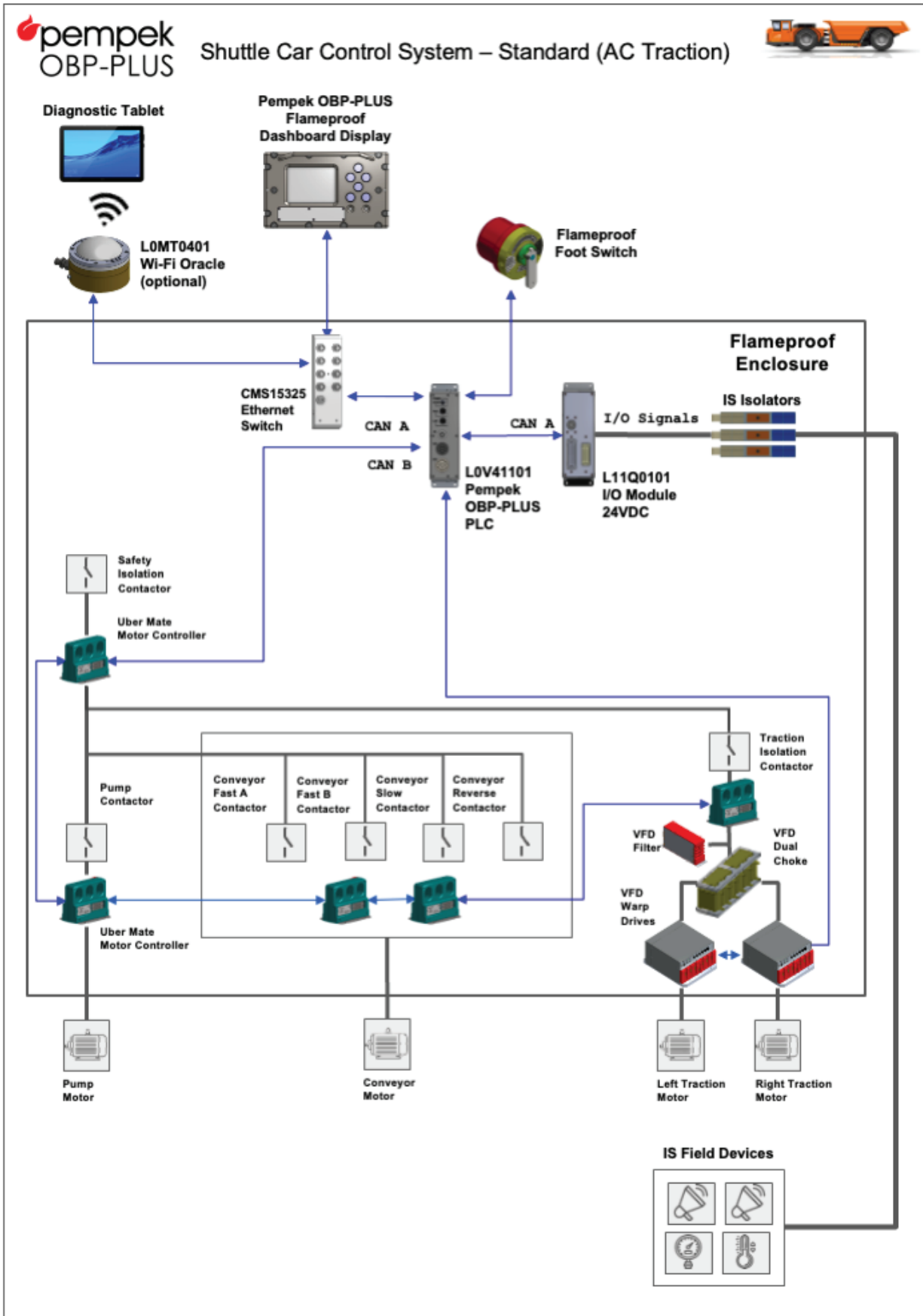
Simple, reliable and cost effective distribution of CAN data and 24-volt supply for all UberMates on the machine.



Systems Architecture Example | UberMate 2.0
Typical Continuous Miner Control System



Systems Architecture Example | UberMate 2.0
 Typical Shuttle Car Control System



Key Features & Benefits | UberMate 2.0

Contactor Control

- Full control and monitoring provided by industry standard CANopen field bus
- Controls one [ON/OFF] or two [FORWARD/REVERSE] Direct-online (DOL) contactors.
- Switching contacts rated to 16 Amperes (make/break 4000 VA)
- Switching contacts support withstand inrush of 80 Amperes.
- Two contacts in series to comply with functional safety requirements.
- All relay outputs are protected by independent, internal hardware watchdog timers.

General Purpose Relay

- Additional auxiliary "C-Form" relay output (for general purpose use or upstream power isolation).

Contactor Status Monitoring

- Four (4) opto-isolated digital inputs.
- Used for general purpose of for monitoring contactor auxiliary contact status
- Available as either 110VAC or 24VDC sensing options.

Motor Current Monitoring

- True RMS current measurement with range from less than 100mA up to 1600 A.
- Measurement settling time 100 milliseconds.
- Allows UberMate to be a universal part for all motors (big and small) on the machine

Motor Temperature Monitoring

- Three (3) self-powered, 2-wire PT100 inputs.
- Galvanically-isolated (UL 1577: 5000 V RMS for 1 minute).
- Built-in earth leakage resistance measurement.

Motor Protection Options

- Protection is configurable for each protection skill by host PLC control system in real-time
- Give system integrators the flexibility to use built-in protection or custom PLC-managed protection
- Built-in motor protection options:
- Motor Over Temperature Protection (via PT100 temperature sensors)
- Jammed Motor Rotor Protection (based on motor current measurement)
- Thermal Overload Protection (based on inverse-time calculation of motor currents)
- Phase Imbalance Protection (unequal motor currents in 3-phase system)
- Phase Rotation Sequence Verification

Earth Fault Monitoring Options

- Using the Uber Offline and Uber Online companion devices; protection against run-time earth faults and also look-ahead offline earth fault monitoring can be added to the suite of standard motor protection features.
- The full Uber package is then a complete solution for motor protection and motor earth fault protection requirements.

Specifications

Mechanical			
Housing	ABS plastic	Plated mild steel, 2mm	
Dimensions		Volume (W) 140mm x (H) 110mm x (D) x 95mm	
Dimensions		Mounting (W) 80mm x (D) 80mm	
Conductor Aperture		25mm x 35mm (A comfortable fit for lugged 120mm ²)	
Mass		0.7kg (without connector)	
Installation		4 x M6 x 12mm + Pressure Washer Recommended Max. Torque = 9Nm	
Environmental		Supply / Interface	
IP Rating	N/A	Voltage / Power	18..30 VDC / < 5W
Temperature Rating	Component -40°C..+85°C	Polarity Safe	YES
Temperature Rating	Ambient Operating -35°C +75°C	Network	CAN 2.0B, CANOpen Compliant
Inputs			
Current		3 x True RMS Rogowski Coils – 1..1600A @ 1% Linear Scale (10000A peak)	
Digital		4 x 110VAC/24VDC	
RTD		3 x PT100 Line Fault Protected – isolation UL 1577: 5000 V RM	
Outputs			
Relays		2 x Contact(s) Voltage Free – Forward / Reverse Configuration	
Relays		1 x Contact(s) Voltage Free – Auxiliary	
All contacts are		240V / 16A rated, make/break 4000VA, inrush 80Amps	
Test Standards:			
Climatic Test		EN 60068-2-30 (Damp heat, non-condensing)	
Mechanical Stability		EN 60068-2-6 (Vibration)	
Immunity to Interfering Fields		EN 61000-6-2 2005	
Interference Emission		EN 61000-6-4 2007	

Ordering Information UberMates



UberMate 2.0 – 110VAC Digital Inputs **Part Number: L11E0101**

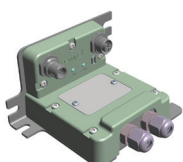
UberMate 2.0 – 24VDC Digital Inputs **Part Number: L11E0201**

Ordering Information Accessories



Cable Assembly UberMate 2.0 - Standard **Part Number: H11E0201**

Cable Assembly – custom configurations **Part Number: Contact Factory**



Uber Offline Earth Fault Companion (3.3 KV) **Part Number: L11J0101**

Uber Online Earth Fault Companion (1 KV) **Part Number: L11L0101**



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