

Features

- **Industrial Intrinsically Safe Remote Console**
 - Aus Ex / MSHA Approved
 - 18 Membrane Function Switches
 - Integral LED Matrix Display
 - Integral Rechargeable Battery
- **Embedded Industrial Microcontroller**
 - Low Power PIC Controller
 - Integral Flash / RAM
 - Advanced Monitoring Software
- **Narrow Band UHF**
 - 16 Channels @ 25KHz Spacing
 - CCITT CRC Data Protection
 - FSK Frequency Modulated
 - UHF Bands
 - Up to 100m line-of-sight range.
- **Operates Minus 10°C to +55°C**
 - All industrial components
- **Heavy Duty Enclosure**
 - Fully Self Contained IP67 Rating
 - Stainless Steel Engraved Facia
 - Internal Antenna
 - Leather Bound Protective Case
 - Rugged Construction

Description

The LOML Series Radio Remote Console is an AS4240 compliant device designed for the most rigorous of environments. Fully waterproof and impact resistant, the LOML Series of remote consoles can be used for a variety of industrial remote control applications where safety critical control is required.



Obelix

Intrinsically Safe
Radio Remote Console
Type LOML



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Typical Applications

- Continuous Bolter/Miners
- Continuous Haulage
- Mobile Bolters
- Mobile Roof Supports
- Remote Control Scoops
- Remote Control Loaders
- Any intrinsically safe industrial remote control application

Ordering Information

Part Number	Description
LOML02	Remote Console UHF Shearer (DBT Australia)
LOML03	Remote Console UHF Bolter (ARO USA)

Notes

The membrane artwork can be customized to suit any application with a nominal tooling charge.



Electrical Characteristics

Supply	
Voltage	Internal Battery
Battery Type	NiCd 5-Cell 1.2V Matched
Battery Capacity	2.3AH
Battery Current	Actively Limited to 275mA, Fuse / Diode Protected.*
Wattage ^{MIN}	690mW
Wattage ^{MAX}	750mW

Radio Module	
Supply	6.0VDC @ 90mA
Frequency	UHF (458MHz / 472MHz) PLL Synthesised
Deviation	±2.6KHz
Power	17dBm (±2dBm)
Channels	32 (25KHz Spacing)
Modulation	Frequency Shift Keyed FM (Narrow Band)
Range ^{MIN}	100 metres† "Line of Sight"
Range ^{MAX}	500 metres "Line of Sight"
Data Integrity	CCITT CRC (16 Bit)
Bandwidth	25KHz @ 1200bps
Antenna	Internal Passive Patch Antenna
Classification	Transmitter

Communications	
Baud	1200bps
Format	8N1
CRC	CCITT 16-bit
Frame	Packet Oriented, Bit Masks
Throughput	10Hz

Environmental	
Operating Temperature	Minus 10°C to +55°C
IP Rating	IP67
Humidity	T.B.A.
MTBF	5000 hours‡

Certification	
Australia	AUS Ex 04.3951X
Europe	-
USA	Pending

* Under fault conditions, the actively limiting supply within the battery pack will trip and remain isolated until such time the trip load is removed.

† Figure cited when matched with LOLD Receiver Control Units.

‡ Figure cited on usage rate equalling 16 hours per day, 6 days per week, 52 weeks per year where failures are due to manufacturing.



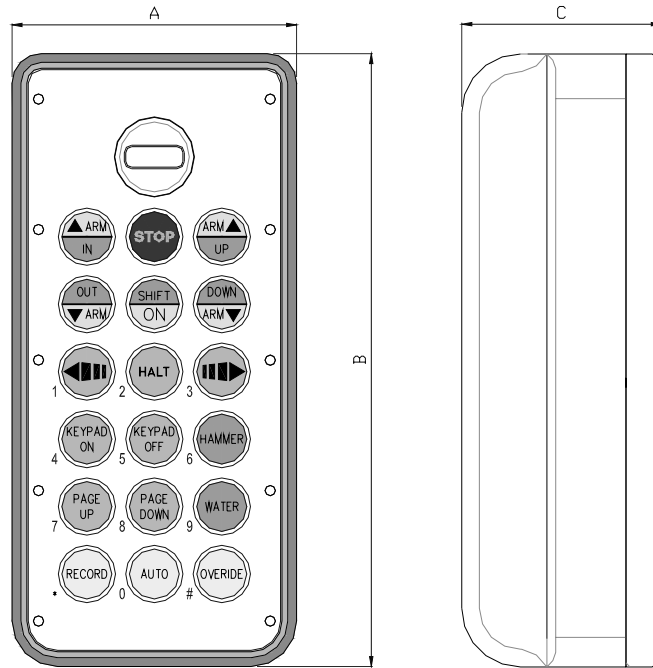
UHF Transmitter Abstract

The L0ML Remote Console incorporates a shielded UHF Narrow Band FM transmitter module which can be programmed to operate in either the 458/472MHz (UHF) spectrums. Transmitter power levels are factory tuned to specification (17dBm nominal) along with voltage controlled oscillator levels to generate wanted frequency.

A dedicated onboard microcontroller directly interfaces with a PLL synthesiser to generate the exact wanted frequency which is selected via dynamic high level UART programming. An NRZ signal is transferred directly from the host processor into the onboard modem which works to modulate the data into the radio frequency carrier.



Mechanical Characteristics



Dimension	Measurement	Description
A	97	Width
B	209	Height
C	68	Depth

Notes

- All dimensions are in millimetres.
- AS4240 layout compliant.

Material

- Enclosure is anti-static polyethylene UHMWPE.
- Facia is stainless steel.

Switches

- Gold flashed membrane contacts
- Single Pole, Dual Input

Fasteners

- M3 x 30mm x 10

Mass

- 4.5kg (9.9lb)