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L0KN Pempek OBP Intrinsically Safe Remote Console

The L0KN Series Radio Remote Console is an AS4240 compliant device designed for the most rigorous of environments. Fully waterproof and impact resistant, the L0KN Series of remote consoles can be used for a variety of industrial remote control applications where safety critical control is required.

Features

- **Industrial Intrinsically Safe Remote Console**
  Exia / ATEX / MSHA Approved
  12 Dual Function Mil-STD Toggle Switches
  Up to 40 Multi-Purpose Functions
  Integral LED Matrix Display
  Integral Rechargeable Battery

- **Embedded Industrial Microcontroller**
  Low Power PIC Controller
  Integral Flash / RAM
  Advanced Monitoring Software

- **Narrow Band VHF/UHF**
  8/16 Channels @ 25KHz Spacing
  CCITT CRC Data Protection
  FSK Frequency Modulated
  VHF & 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
  Stainless Steel Switch Guard
  Internal Antenna
  Leather Bound Protective Case
  Rugged Construction

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

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Ordering Information

Part Number	Description
L0KN01	Remote Console UHF (Generic 458MHz)
L0KN02	Remote Console VHF (DBT Dash3 174MHz)
L0KN03	Remote Console VHF (DBT 1038 151MHz)
L0KN04	Remote Console VHF (VAB ABM20 151MHz)
L0KN05	Remote Console VHF (Joy Standard 151MHz)
L0KN06	Remote Console VHF (Joy MCS 151MHz)
L0KN07	Remote Console UHF (DBT 1038 458MHz)
L0KN09	Remote Console UHF (DBT 30MB 458MHz)
L0KN10	Remote Console UHF (Waratah 12CM 458MHz)
L0KN11	Remote Console UHF (VAB ABM 458MHz)
L0KN12	Remote Console UHF (VAB Dash3 458MHz)
L0KN13	Remote Console UHF (VAB ABLS 458MHz)
L0KN14	Remote Console VHF (DBT 1036 151MHz)
L0KN15	Remote Console UHF (VAB ABM 458MHz 'Norway')
L0KN16	Remote Console UHF (VAB ABM 458MHz 'United Kingdom')
L0KN18	Remote Console VHF (VAB ABM 151MHz 'Elder')
L0KN19	Remote Console UHF (VAB Mitsui S200 458MHz)
L0KN20	Remote Console VHF (DBT MRS 151MHz)
L0KN21	Remote Console VHF (Generic 151MHz)
L0KN22	Remote Console UHF (VAB Germany Mk1 458MHz)
L0KN23	Remote Console UHF (VAB Germany Mk11 458MHz)
L0KN24	Remote Console UHF (MTI Highwall 458MHz 'USA')
L0KN26	Remote Console UHF (Dash 0/1/2 Series 458MHz 'USA')
L0KN27	Remote Console UHF (VAB ABM 458MHz 'United Kingdom')
L0KN28	Remote Console UHF (VAB ACM10 458MHz 'India')
L0KN30	Remote Console UHF (Joy Phase Equivalent 312/318MHz 'USA')
L0KN31	Remote Console VHF (VAB ABLS 151MHz)
L0KN32	Remote Console UHF (Oaky Creek 458MHz)
L0KN50	Remote Console VHF (Mitsui S200 151MHz)
L0KN51	Remote Console VHF (Mitsui S200 151Mhz 'Elder')
L0KN52	Remote Console UHF (Crinum 458Mhz)
L0KN53	Remote Console UHF (Dash 0/1/2 Reverse Function 458MHz 'USA')
L0KN54	Remote Console UHF (VAB ABM 458MHz 'USA')
L0KN55	Remote Console UHF (ARO 458MHz Keyed Lemo 'USA')
L0KN56	Remote Console UHF (Dash 0/1/2 458MHz Keyed Lemo 'USA')
L0KN58	Remote Console UHF (Jeffrey R102 458MHz 'USA')
L0KN59	Remote Console UHF (Jeffrey R101 458MHz 'USA')

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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	VHF (151MHz / 174MHz) 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

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

Environmental		Certification	
Operating Temperature	Minus 10°C to +55°C	Australia	AUS Ex 01.3733X
IP Rating	IP67	Europe	BVS 04 ATEX E 088
Humidity	T.B.A.	USA	2G-4317
MTBF	5000 hours‡		
Throughput	10Hz		

* 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 L0KN Remote Consoles.

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

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VHF/UHF Transmitter Abstract

The L0KN Remote Console incorporates a shielded VHF or UHF Narrow Band FM transmitter module which can be programmed to operate in either the 151MHz/174MHz (VHF) or 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 in the radio frequency carrier.

Mechanical Characteristics

Dimension	Measurement	Description
A	140	Height
B	130	Depth
C	240	Width

Notes
- All dimensions are in millimetres.

Material
- Enclosure is Nylon.
- Facia is stainless steel.

Switches
- Long Lever Stainless Steel Toggle
- Dual Pole Cross Over Contacts
- MIL-S-3950-G

Fasteners
- M3 x 10mm x 4

Mass
- 4.5kg (9.9lb)