

topcat



- Front connect I/O wiring & settings
- Multiple Protocols
- Isolated Digital I/O
- Analog Inputs
- Two RS-232 serial ports
- Integrated radio
- Remotely configurable
- Local control (PLC functionality)
- Data logging

The Powerlink Topcat is an integrated RTU optimised for poletop applications including the monitoring and control of reclosers, air-break switches and distribution transformers.

The Powerlink Topcat RTU combines isolated digital inputs and outputs, analog inputs, a power supply, two RS-232 serial ports and communications via a built-in radio transceiver. For ease of installation the Topcat mounts against a flat surface and all I/O connectors, indicators and settings are on the front panel.

Topcat is configured and programmed from the Powerlink Master via the communications link or locally by a laptop PC. Topcat can provide local control (PLC) functionality, data logging and peer-to-peer communication. It has a non-volatile real-time clock and battery-backed-up memory.

Topcat contains several unique and advanced reliability features including a complete output self-test, detection of damaged digital output relays and drivers and a dual hardware interlock circuit which provides two independent safeguards against incorrect digital output activations. Watchdog circuitry monitors software operation and can initiate a diagnostic and recovery procedure. It also monitors and reports the supply battery voltage.

Telemetry Communications

- Protocols supported
 - DNP3.0
 - MODBUS
 - Conitel 2020/2025
 - HDLC
 - Harris 6000
- 1200/2400 bps FFSK modem
- 16-bit CRC (check)
- Peer to Peer
- V.23 modem option
- Software noise filter
- Simplex, half duplex and full duplex channels supported
- Ethernet option

Module I/O

- 10 Isolated digital inputs
 - DC voltage activated
 - Common negative
- 6 Isolated digital outputs
 - Relay contact
 - Group isolated
- 2 Differential analog inputs
 - 12-bit resolution
 - Internal current shunt
- LED indication for each I/O point
- Battery voltage monitoring

Hardware

- SGS-Thomson ST9 processor
- Atmel 90S2313 slave processor
- For V.23 modem only
- 128KB or 512KB RAM
- 256KB or 512KB ROM
- Flash ROM supported
- Internal hardware watchdog

Power

- 12VDC (10.0 to 15.0VDC) or 24/48VDC (18.0 to 56.0VDC)
- Internal 24V-to-12V converter
- Internal self-resetting fuses
- Can be powered direct from battery
- Idle current drain at 24VDC with 5watt radio fitted <100mA

Isolation

- Digital Inputs and Outputs IEC 255-5 (1977)
- Test voltage 2500VAC one minute
- Inpulse test voltage 5000V (1.2/50)

Electromagnetic Interference

- Complies with CISPR Publication 22, 1985
- Meets US FCC requirements

Environmental

- Temp range -20 - 60deg C (ambient)
- Humidity 5-95 non condensing
- Shock 50g 15ms 3 pulses per axis
- Altitude 0 - 4000 M

Front Panel Indications

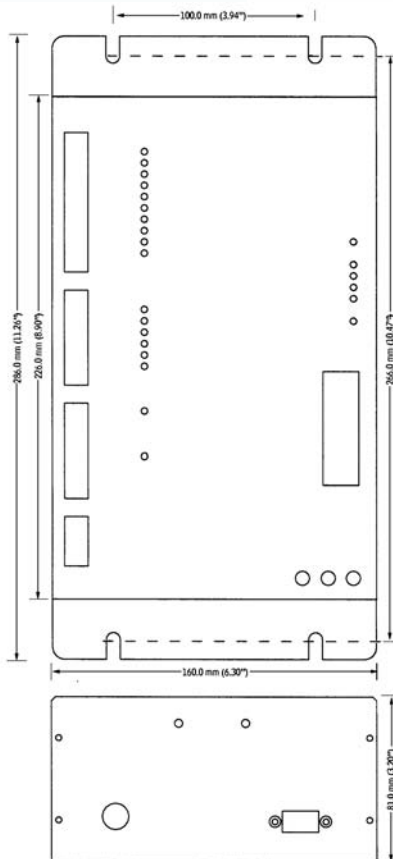
- Ready:
 - Watchdog Status
 - Green if OK, Red if fault
- 10 Digital Inputs:
 - ON => Yellow
- 6 Digital Outputs:
 - ON => Yellow
- 2 Analog Inputs:
 - Off - under range
 - Yellow - in range
 - Flash - over range
- VAD => Valid address and data
- Receive => Receiving data
- Transmit => Transmitting
- Comms => Red if Comms Fail
- Low Voltage => Low input voltage
- Power Save:
 - LED's blank after five minutes

Front Panel Connections

- Phoenix MSTB detachable connectors
- Wire diameter ≤ 2.5 mm
- Digital inputs - 12-pin
- Digital outputs - 8-pin
- Analog inputs - 8-pin
- DC Power - 4-pin
- RS-232 port 1 - RJ45
- RS-232 port 2 - RJ45
- Mic/Speaker - RJ11
- RTU Address selectable 1-999

Bottom Panel Connections

- Display button
- Reset button (recessed)
- BNC Radio antenna
- External Comms port female D9/ Ethernet RJ45



Ordering Information

Part Number	Description
B06-050	Powerlink Topcat RTU
/V1	VHF Radio 5 watt
/U2	UHF Radio 5 watt
/LR	Line or external radio
/IP	Ethernet

Other options available

Topcat I/O functions

Digital Input Functions

- Ten Digital Inputs
- Voltage activated
- 4.0 to 36.0VDC / 8.0 to 60.0VDC
- Load ≥ 10mA at 24VDC
- Scan time 10 ms
- Programmable debounce
- Programmable inversion
- Latch function
- Change of state can initiate communication
- Can count pulses
- Can calculate 'time active'

Digital Output Functions

- Six Digital Outputs
- Relay Contact
- 5A at 30VDC
- 5A at 250VAC
- Resistive load
- Wetting 10mA
- Advanced output self-check
- Pulsed or steady state
- Configurable pulse width
- Configurable inversion
- Programmable checkback

Analog Input Functions

- Two Analog Inputs
- Converter resolution 12 bits
- Independently differential
- CMR +36V, -12V
- 0-5V, 1-5V, 0-20mA, 4-20mA
- 250-ohm internal shunt
- Shunt linked externally
- Can be paired for bipolar
- Accuracy 0.2
- Overrange 9.5
- Software calibration
- Hardware and software filtering

RS-232 Port Functions

- Two serial ports
- RS-232 compatible
- RTS/CTS flow control
- 50 to 115,200 bps async
- Local interrogation (laptop etc)
- Local protocols supported
- MODBUS
- Allen-Bradley DF-1
- DNP3.0
- Cooper 2179

Mic/Speaker Connector

- Supports microphone, speaker or combined unit
- Monitors radio channel audio
- Transmits on channel
- Supports external radio transceiver

Internal Radio Transceiver

- VHF or UHF
- Trunked Radio

Cellular Communications

Topcat Communications

The Topcat has an internal modem and is normally supplied with an internal radio transceiver. Alternatively it can communicate using an external radio transceiver or a 2-wire or 4-wire leased line. The standard Topcat modem is a 1200/2400 bps FFSK modem suitable for use with high noise communications bearers. Synchronous HDLC (High-Level Data Link Control) protocol is used for high efficiency and sophisticated error detection and recovery. Other modem options and other protocols are available.

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