

Topcat

Models TC0, TC1 and TC3

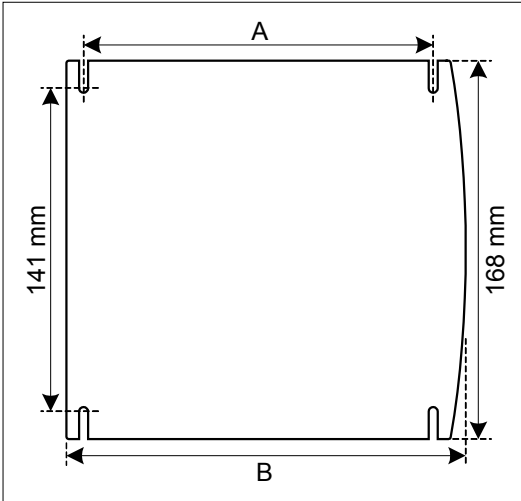
Installation Guide



Mounting

Mount *Topcat* against a flat surface using four M5 screws.

<u>Model</u>	<u>Screw Spacing</u>		<u>Outside Dimensions</u>	
	<u>Horizontal (A)</u>	<u>Vertical</u>	<u>Width (B)</u>	<u>Height</u>
TC0	89.5 mm	141 mm	112 mm	168 mm
TC1	121.5 mm	141 mm	143 mm	168 mm
TC3	184.5 mm	141 mm	206 mm	168 mm

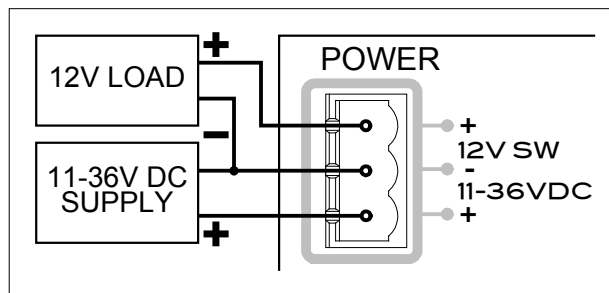


Mounting Template

Depth is 125mm, plus front clearance for wiring (at least 70mm for antenna jack)

Powering

<u>Voltage Range</u>	<u>Rating</u>
11~36V DC	1.5A @ 12V DC 0.75A @ 24V DC



DC Supply & External Load

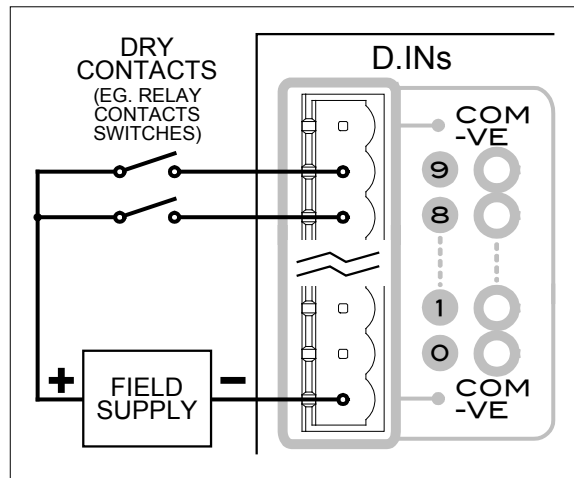
An external power option can be installed in *Topcat* that can provide a switched 13.8V supply up to 1A through pins 2 and 3 of the power connector as shown. This can be used to power an external device such as a cellular modem.



Connect an antenna before powering up *Topcat*

Isolated Digital Inputs

<u>General Description</u>	<u>Inactive, LED off</u>	<u>Active, LED on</u>	<u>Maximum</u>	<u>Resistance</u>
Positive voltage-activated	0~+1.8V	+4.5~36.0V	±60V DC	12kΩ to GND

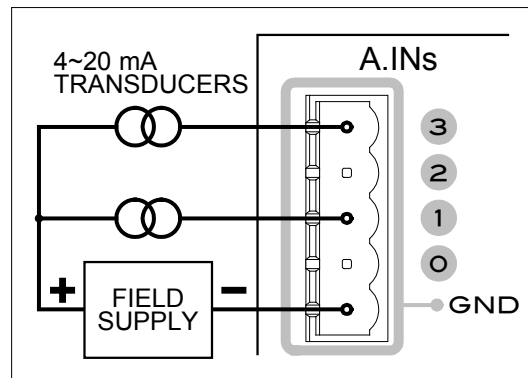


Digital Inputs

Inputs 0~3 can be used for Pulse Counts. Max count rate $\leq 50\text{Hz}$

Analog Inputs

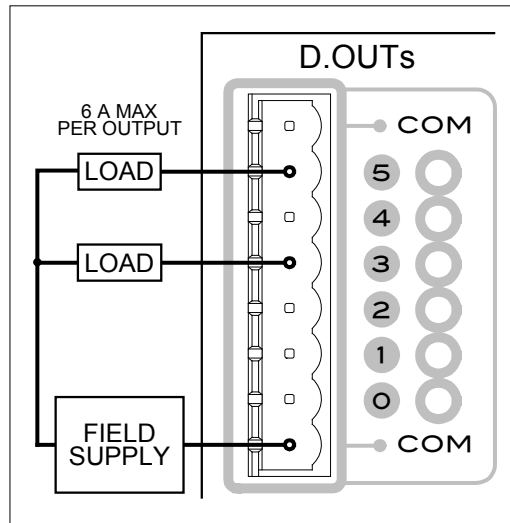
<u>General Description</u>	<u>Inactive, LED off</u>	<u>Active, LED on</u>	<u>Maximum</u>	<u>Resistance</u>
Positive 4~20mA current	0~+4mA	+4~20mA	±5V ±40mA	120Ω to GND



Analog Inputs

Isolated Digital Outputs

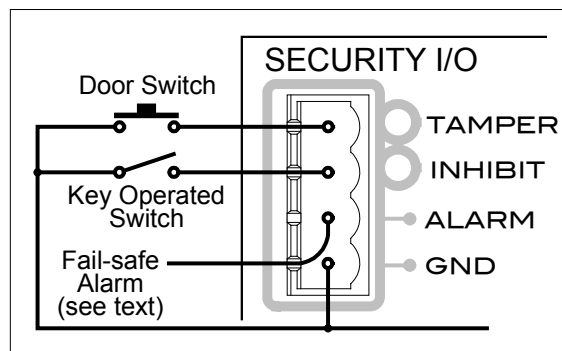
Normally open contacts which close to **COM** rated at 6A for 230V AC and 30V DC.



Digital Outputs

Security I/O

The fail-safe alarm is an open collector, which can carry 50mA, up to 30V, and can drive a relay coil directly.



Security I/O

Serial Ports

<u>Name</u>	<u>Type</u>	<u>Socket</u>	<u>Typically used for...</u>
PORT 1	RS-232	RJ-45 ⁽¹⁾	Local connection to PLC, data logger, meter
PORT 2	RS-232	RJ-45	Local connection to PLC, data logger, meter
CONFIG	RS-232	RJ-45	Laptop, Analog output module

⁽¹⁾ Connector pins 2 and 3 are not connected on **PORT 1**.

⁽²⁾ The +12V outputs can power small loads such as serial converters.

Each port has a red/green LED indicator, which blinks green when *Topcat* receives a valid message. Red indicates an error condition.

	<u>Dir</u>	<u>Name</u>
1	sf→	+12V ⁽²⁾
2 ⁽¹⁾	sf→	COut2
3 ⁽¹⁾	sf←	CIn2
4	sf→	COut1
5	sf←	CIn1
6	sf→	TxD
7	sf←	RxD
8		GND



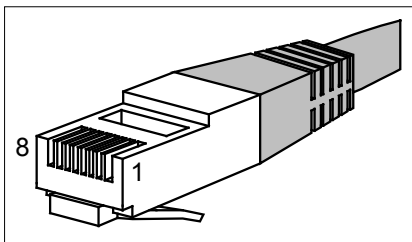
Serial ports can be permanently damaged if an Ethernet cable is plugged into them.

Ethernet Port

This is a standard 100-base-T Ethernet port, which is operational when the appropriate firmware is installed.

External Radio Connections

These connections are applicable only when no internal radio is fitted.



RJ45 Pins

<u>Pin</u>	<u>Dir</u>	<u>Name</u>
1		GND
2	sf→	PTT
3	sf←	Channel Busy
4	sf→	Tx Audio
5	sf←	Rx Audio
6	sf→	Serial TxD
7	sf←	Serial RxD
8		GND

Always use best radio-frequency engineering practices for all radio and antenna installation.

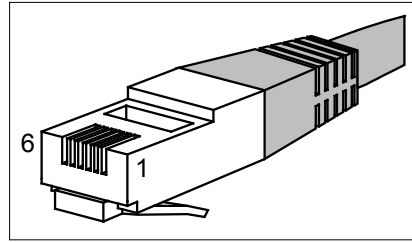


Connect an antenna before powering up *Topcat*

Speaker / Microphone Connections

A suitable Speaker / Microphone connection is provided on units with an internal radio for monitoring and testing the radio channel.

<u>Pin</u>	<u>Name</u>
1	N/C
2	Speaker
3	PTT
4	Microphone
5	GND
6	GND



RJ12 Speaker Mic Pins

Communication Indicators

The **COMMS** indicators show communication between *Topcat* and the Telemetry Master.

<u>Indicator</u>	<u>Indication</u>	<u>Meaning</u>
VAD/COMMS	Green short blink	A valid message for a <i>different</i> RTU was received
	Green long blink	A valid message for <i>this</i> RTU was received
	Red	Comms fail (no comms with the Master)
CHAN BUSY	Yellow	The radio transceiver is receiving RF on it's channel
RX DATA	Yellow	Shows the data being received by <i>Topcat</i>
PTT	Yellow	<i>Topcat</i> is transmitting on the radio channel
TX DATA	Yellow	Shows the data being transmitted by <i>Topcat</i>

A short blink is about 0.1 seconds. A long blink is about 0.5 seconds.

Ready LED and Reset

<u>Ready LED indication</u>	<u>swampfox operating state</u>
Green	Normal <i>Topcat</i> is operating normally
Red	Defect Hardware or firmware fault

The **RESET** button is behind a small unmarked hole in the front panel near the **DISPLAY** button. To reset and restart *Topcat*, press **RESET** briefly.

Other Front Panel Items

The **COMMS** LED illuminates red when *Topcat* cannot communicate with a master.

The **DISPLAY** button turns the front panel indicators on and off. The ready LED is always enabled.

The **ADDRESS SWITCHES** set *Topcat*'s three digit RTU address.



***Topcat* only examines the address switches when it starts up or is reset**

Notes

Copyright © 2006-2015 Abbey Systems Ltd

www.abbey.co.nz

support@abbey.co.nz

Level 3, 220 Willis Street
PO Box 27-497
Wellington, New Zealand
Phone +64-4-385-6611
Fax +64-4-3856848

Document number	IG-671-2.2-2015-Mar
Products Covered	TC0, TC1 and TC3 (all variants)
Revision Number	2.2
Revision date	15 March 2015

Topcat and the *Topcat//* logo are trademarks of
Abbey Systems Ltd, registered with the U.S. Patent and Trademark Office.

