

CAN Keypad

User's Manual



Description

9 individual keys, each with a customisable RGB LED indicator connected over a CAN network to make wiring simple and efficient.

Standard CANOpen communication making plug & play compatible with many standard PDMs (including MoTeC, Blackbox, Life Racing). Also compatible with any other PDM that supports CAN-bus communication.

Features:

- 9 individual keys (allow simultaneous button press)
- Dimmable RGB LED indicators above each key
- 7 different colour combinations
- Backwards compatible with other major keypads (Grayhill / MoTeC, BlinkMarine etc.)
- Slim installation footprint
- Reverse polarity protection

Indicator Colours:

Green



001

Blue



010

Cyan



011

Red



100

Yellow



101

Magenta



110

White



111

CAN Communication

The keypad comes configured standard in CANOpen mode with the following messages:

Tx	Button States	0x506	10Hz (50ms)
Rx	LED States	0x507	-
Rx	LED Brightness	0x508	-

Button States

Byte	0								1								2	3	4	5	6	7
	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0						
0x506	IN8	IN7	IN6	IN5	IN4	IN3	IN2	IN1	-	-	-	-	-	DIG2*	DIG1*	IN9	-	-	-	-	-	-

* When additional AV inputs enabled

LED States

Byte	0								1								2								3								4	5	6	7	
	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0					
0x507	LED3 B	LED3 G	LED2 R	LED2 B	LED2 G	LED1 R	LED1 B	LED1 G	LED6 R	LED6 B	LED5 G	LED4 R	LED4 B	LED4 G	LED3 R	LED3 B	LED3 G	LED7 R	LED7 B	LED7 G	LED6 R	LED6 B	LED9 R	LED9 B	LED9 G

LED Brightness

Byte	0	1	2	3	4	5	6	7
0x508	Brightness 0 = Off 255 = Max		-	-	-	-	-	-

Extra Information

There is the ability to add an additional message with the supply voltage, device temperature, serial number, and AV inputs (when enabled). The format of this message is shown below:

Byte	0	1	2	3	4	5	6	7
0x509	LSB MSB Serial No.		AV1*	AV2*	AV3*	Temp 1 °C	LSB MSB Supply Voltage 0.01V	

* When additional AV inputs enabled

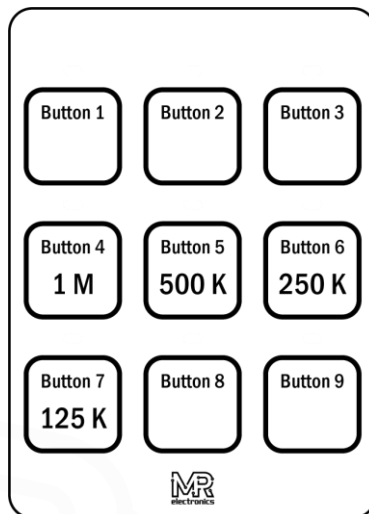
Configuration

In most standard use cases there will be no need to configure the keypad before use. If you do need to change the baud rate from the default (1 Mbps), then you can do this by resetting the keypad, or through the config editor software.

Resetting the keypad:

In order to restore the keypad to factory settings, or to change the baud rate, the keypad can be reset with the following sequence:

1. Turn the power off to the keypad.
2. Press and hold buttons 1 & 3, while turning on the power.
3. The top three LEDs should start to illuminate in green from left to right.
4. Keep holding buttons 1 & 3 for 3 seconds. The top LEDs will illuminate in green, and then change to red once complete.
5. Once the top LEDs are red, choose the desired baud rate by pressing the corresponding button from the illustration below:



6. After selecting the baud rate the LEDs should go out and the keypad will restart with the default configuration & selected baud rate.

Advanced Parameters

For more advanced configurations the keypad can be programmed using a Peak PCAN-USB adapter. The latest version of the software can be found [here](#). Please refer to the software manual for programming instructions.

The following parameters can be adjusted:

Parameter		Permissible Values	Description	Default Value
Baudrate		1M, 500K, 250K, 125K	CAN baudrate setting	1M
CANOpen	Enabled	Enabled, Disabled	CANOpen mode enable	Enabled
	Node ID	0 - 127	CANOpen node ID	10
	Heartbeat Period	10 – 65535 ms (10ms inc)	CANOpen heartbeat period (0 = disabled)	500 ms
Button CAN Config	Message ID	0x000 – 0x7FF	CAN message ID	0x506
	Message Format		Contact us if you would like a custom format	Standard
	Message Period	10 – 65535 ms (10ms inc)	Time between messages (0 = disabled)	100 ms
Indicator CAN Config	Message ID	0x000 – 0x7FF	CAN message ID	0x507
	Message Format		Contact us if you would like a custom format	Standard
Brightness CAN Config	Message ID	0x000 – 0x7FF	CAN message ID	0x508
	Message Format		Contact us if you would like a custom format	Standard
Extra CAN Config	Message ID	0x000 – 0x7FF	CAN message ID	0x509
	Message Format		Contact us if you would like a custom format	Extra
	Message Period	10 – 65535 ms (10ms inc)	Time between messages (0 = disabled)	0 ms (Disabled)
Default Brightness		0 (Off) – 255 (Max)	Default brightness if no CAN message received.	128
Enable Code			Device enable code for additional inputs	0xFFFFFFFF

