Keypad Diagnostics

Feedback and error codes for WCM-xxx, WK-EOS-6 and WK-MOD-xxx-x

Introduction:

A Rako keypad will enter diagnostic mode on power-up. Once the tests have all passed, the diagnostics are not checked again until the next power-up.

Notes:

1. *Multiple warnings may be shown.*
2. *While the bus is terminated both high and low bus lines may show under or over voltage. Temporarily removing the termination may help identify which line is at fault.*
3. *Button E for WCM & WK-MOD and button C for WK-EOS will exit the test for voltage errors, but these should be rectified before handover.*

CAT5/6 cable colour coding:

Orange/White	+15V DC
Orange	Ground
Brown/White	+15V DC
Brown	Ground
Blue/White	CANbus Data High
Blue	CANbus Data Low
Green/White	CANbus Data (return) High
Green	CANbus Data (return) Low

CANbus data voltages will measure positive (high) or negative (low) 2.5-3V DC, from ground. (Orange or Brown).
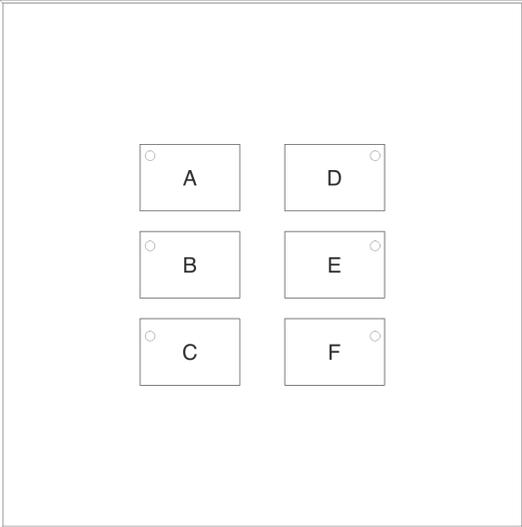
NB
Caution should be exercised while using the below information for diagnostic purposes. The suggested possible cause is the most likely of many possibilities but is not a guaranteed solution.

WK-MOD Diagnostics:

		Letter	Indicates	Uses/example
A	G	G	CAN Transmission Failure	Cannot communicate with CAN bus.
B	H	I	CAN Short	CAN bus shorted together.
C	I	E	Low power	Supply to the keypad has dropped below 12V. The keypad may still work below this.
D	J	A	Bootloader	Keypad has not booted firmware. Required state for firmware upgrade - can be entered via Rasoft/holding button down on startup.
E	K	I & either K or L (K = Over L = Under)	Over/Under Voltage indicator	Over/Under voltage identifier. Used in conjunction with 'D' and 'F'. 'On' indicates overvoltage 'Off' indicates under voltage.
F	L			

WK-EOS-6 Diagnostics:

	Letter	Indicates	Uses/example
(keypad diagram: A D / B E / C F)	A	CAN Transmission Failure	Cannot communicate with the CAN bus.
	B	CAN Short	CAN bus shorted together.
	C	Low power	Supply to the keypad has dropped below 12V. The keypad may still work below this.
	D	CAN H Error	Incorrect voltage measured on Blue/White or Green/White, check 'E' for more information.
	E	Over/Under Voltage indicator	Over/Under voltage identifier. Used in conjunction with 'D' and 'F'. 'On' indicates overvoltage 'Off' indicates under voltage.
	F	CAN L Error	Incorrect voltage measured on Blue or Green, check 'E' for more information.

WCM-xxx Diagnostics

Letter	Indicates	Uses/example
B	CAN Transmission Failure	Cannot communicate with the CAN bus.
D	Low power	Supply to the keypad has dropped below 12V. The keypad may still work below this.
E	Exit Warning Test Mode	"Exit Test Mode" will clear voltage errors (Errors G-J). These should be rectified before handing over the system.
F	CAN Short	CAN bus shorted together.
G	Warning: Blue/White Over Voltage	Blue/White shorted to Orange/White or Brown/White.
H	Warning: Blue/White Under Voltage	Blue/White is shorted to ground. Most likely Blue/White shorted to Orange, Brown, Blue or Green.
I	Warning: Blue Over Voltage	Blue shorted to Orange/White or Brown/White. Could be either incorrectly punched down.
J	Warning: Blue Under Voltage	Blue shorted to ground. Most likely Blue shorted to Orange, Brown, Blue or Green.

A
B
C
D
E

F
G
H
I
J