eM009
4 Channel
Lambda Controller

eM009 *is a compact high-performance 4-channel lambda controller configurable for Bosch LSU 4.9 or 4.2 wideband lambda probes. It can be used to verify or adjust the A/F value to tune the engine for best performance.*
Output data is available in digital format on CAN. Self-diagnostic features helps to verify probe is working properly.

MAIN FEATURES

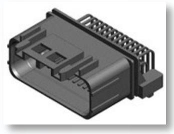
- A/F Range: from 7,0 to 20,0
- Up to 4 Channels
- BOSCH LSU 4.2 or LSU 4.9 wideband lambda probes supported (selectable via software)
- Warm-up strategy to foster the engine crancking.
- Self Diagnostic features
- Fully protected outputs
- CAN protocol 500 kbit/s or 1Mbit/s (configurable)
- Fully programmable with eMoticom PC Software **Caltool**
- Operative voltage: 8-16V (with reverse polarity protection)
- Operative Ambient Temperature Range: -40 … +105°C
- Size: 76 x 85 x 25 mm
- Weight: about 100g

(continued on the next page)

For information: contact@kjracingpowerparts.com www.kjracingpowerparts.com

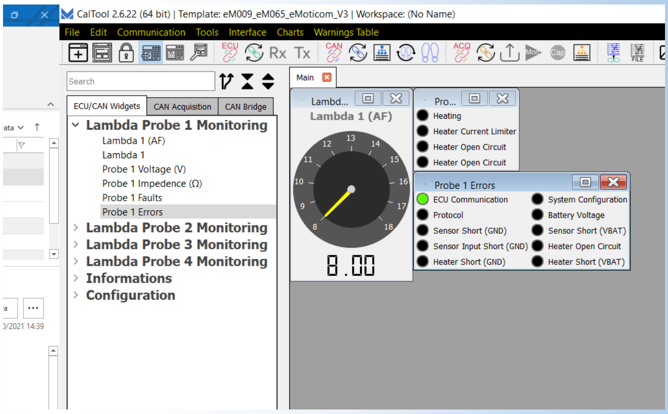
PINOUT

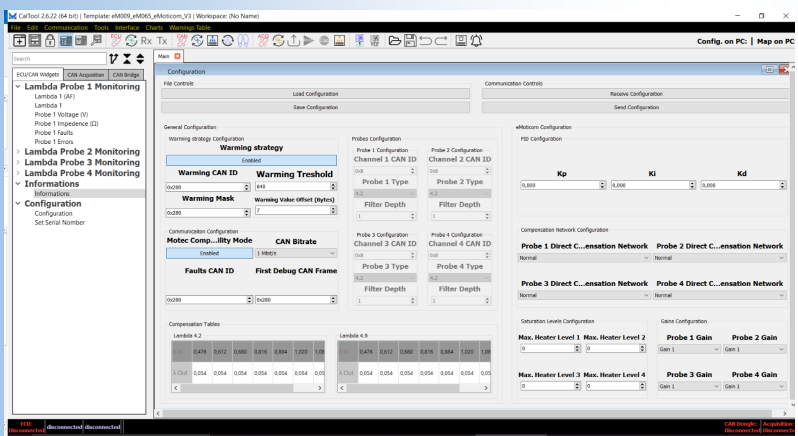
eM051 Side Connector: **JAE MX47039NF1**
WIRING Side Connector: **JAE MX47039SF1**
WIRING Side Pin: **JAE M47S65H4FA**
WIRING Side Retainer **JAE MX47039XF1**



	SIGNAL	FUNCTION
1	TPS B2	TPS B - Signal Trace 2
2	TPS B1	TPS B - Signal Trace 1
3	TPS A2	TPS A - Signal Trace 2
4	SCAM-	CamShaft Position Sensor [-]
5	TPS A1	TPS A - Signal Trace 1
6	SUBTHROTTLE	SUBTHROTTLE Analog Input
7	GRIP 1	GRIP 1 Analog Input
8	AN SPARE 2	Analog Input 2 (Spare)
9	T AIR	Air Temperature Sensor (NTC)
10	T H2O	Water Temperature Sensor (NTC)
11	P OIL	Oil Pressure Sensor
12	P FUEL	Fuel Pressure Sensor
13	P TURBO	Turbo Pressure Sensor
14	MAPSEL	MAP Selection Switch
15	SMOT-	Crankshaft Position Sensor [-]
16	SMOT+	Crankshaft Position Sensor [+]
17	GRIP 2	GRIP 2 Analog Input
18	SCAM+	CamShaft Position Sensor [+]
19	STOP Switch	STOP Switch input
20	SIDESTAND DIGITAL1	SIDESTAND 1 Switch input

	SIGNAL	FUNCTION
21	NEUTRAL	NEUTRAL Switch input
22	LAUNCH	LAUNCH Switch input
23	FRONT LEFT SPEED	FRONT LEFT SPEED Sensor Input
24	FRONT RIGHT SPEED	FRONT RIGHT SPEED Sensor Input
25	SPEEDLIM	SPEEDLIM Switch Input
26	GEAR POS	GEAR POS Sensor Analog Input
27	+VBAT	+12V POWER SUPPLY
28	+VBAT	+12V POWER SUPPLY
29	ANTI LAG / CLUTCH	ANTI LAG / CLUTCH Switch Input
30	CAN A H	CAN H - Bus A
31	CAN A L	CAN L - Bus A
32	SHIFTER Input	SHIFTER Input Signal
33	START IN / DIG Input 2	START IN / DIGITAL Input 2
34	REAR RIGHT SPEED	REAR RIGHT SPEED Sensor Input
35	REAR LEFT SPEED	REAR LEFT SPEED Sensor Input
36	+VREF1	+5V VREF1 External Sensors
37	+VREF2	+5V VREF2 External Sensors
38	SGND	ANALOG GND for External Sensors
39	SGND	ANALOG GND for External Sensors





For information: contact@kjracingpowerparts.com www.kjracingpowerparts.com

Subject to change without notice.

eM019

4 Analog Channels to CAN Converter

***eM019** is a compact high-performance CAN device that can be used in Racing Applications to acquire up to four analog signals. It can be programmed directly via CAN and it offers also a +5V protected output to supply small external sensors. Battery voltage and Ambient Temperature are acquired and available on CAN too.*

MAIN FEATURES

- Up to 4 channels 0...5V (protected from higher voltages)
- Resolution: 12 bit
- Data Refresh Frequency: max 200Hz
- Digital Programmable software filters (moving average) for each channel
- Digital Output: CAN BUS - programmable ID and baudrate
- Protected Output: +5V — max 70mA
- Fully programmable via CAN
- Battery Voltage (monitored): 8-18V (20mA)
- Cable length: 20cm — 9 wires AWG24
- Ambient Temperature Range: -40 … +125°C
- Material: anodized aluminum
- Dimensions: 36.0 x 25.0 x 9.5mm
- Weight: <25g (includes cable)
- Protection grade: IP65

WIRING

SIGNAL	FUNCTION	WIRE COLOR
+12V	+12V Power Supply	Red
GND	GND Power Supply	Black
CAN H	CAN H Line	White
CAN L	CAN L Line	Green
+5V REF	0..5V Analog Output	Orange

SIGNAL	FUNCTION	WIRE COLOR
CH1	Analog Input #01	Yellow
CH2	Analog Input #02	Brown
CH3	Analog Input #03	Violet
CH4	Analog Input #04	Blue

For information: contact@kjracingpowerparts.com www.kjracingpowerparts.com

eM040

DATA Logger

***eM040** is a compact 16GB CAN DATA Logger. It can sample up to 100 digital channels on CAN with a maximal sampling rate of 200 Hz. It can also acquire up to 4 analog 0...5V @ 12 bit and 2 on/off channels.*

MAIN FEATURES

- Memory Capability: 16 GB
- Max Digital CAN Channels: 100
- Max Sample Rate: 200 Hz
- Analog Inputs: 4 Channels 0..5V @ 12 bit
- Up to 2 Digital Inputs: (0 / 5V)
- eMoticom PC Software ***Caltool*** for Data Download, Plotting and Analysis
- USB port for data download
- Operative voltage: 8-16V
- Operative Ambient Temperature Range: -40 … +105 °C
- Size: 53 x 43 x 13 mm
- Weight: about 50g

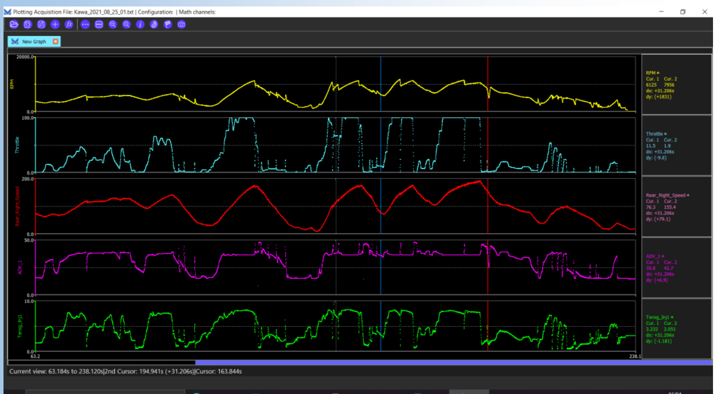
PINOUT

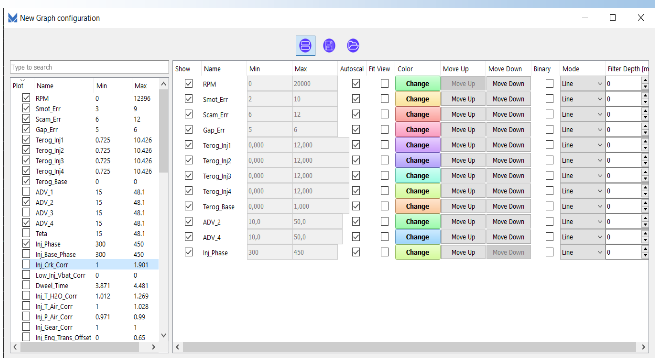
eM040 Side Connector: **JST 04T-JWPF-VSLE-S**
WIRING Side Connector: **JST 04R-JWPF-VSLE-S**
WIRING Side Pin: **JST SWPR-001T-P025**

PIN	SIGNAL	FUNCTION
1	+VCC	+12V Power Supply
2	CAN H	CAN H Line
3	CAN L	CAN L Line
4	GND	Ground Power Supply

eM040 Side Connector: **JST 08T-JWPF-VSLE-D**
WIRING Side Connector: **JST 08R-JWPF-VSLE-D**
WIRING Side Pin: **JST SWPR-001T-P025**

PIN	SIGNAL	FUNCTION	PIN	SIGNAL	FUNCTION
1	AN0	Analog Input Channel 0	5	DIG1	Digital Input Channel 1
2	AN1	Analog Input Channel 1	6	+5VREF	+5V for analog sensors
3	AN2	Analog Input Channel 2	7	BOOT	Bootloader function
4	AN3	Analog Input Channel 3	8	GND	Ground for analog sensors





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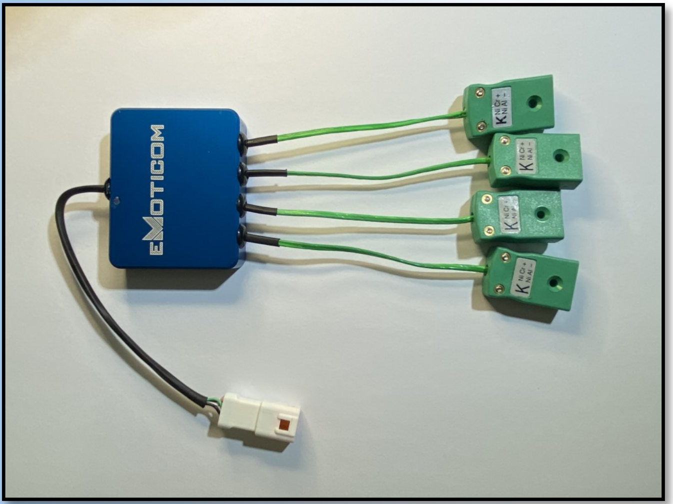


eM044

4 Channel TCK CAN Module

eM044 *is a compact CAN module which can be used to handle up to 4 TCK sensors.*

MAIN FEATURES

- Temperature Measurement Range: -50 … +1800 °C
- Temperature Resolution: +/- 0.1°C
- Maximal Refresh Rate: 20 Hz
- TCK supported: K-types
- Self Diagnostic features
- CAN protocol 500 kbit/s or 1Mbit/s (configurable)
- Fully programmable with eMoticom PC Software **Caltool**
- Battery Voltage and Internal Temperature internally Sensed
- Operative voltage: 8-16V (with reverse polarity protection)
- Operative Ambient Temperature Range: -40 … +105°C
- Size: 53 x 43 x 13 mm
- Weight: about 80g

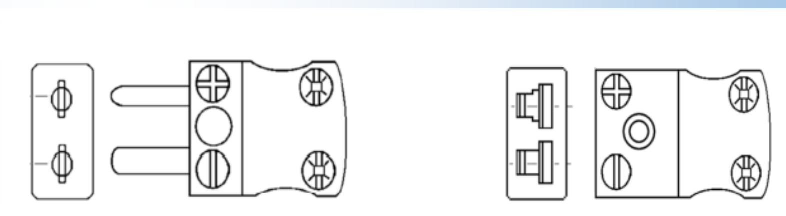
PINOUT

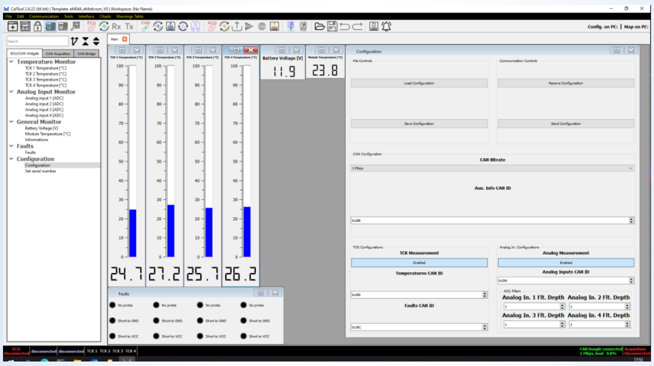
eM044 Side Connector: **JST 04T-JWPF-VSLE-S**
WIRING Side Connector: **JST 04R-JWPF-VSLE-S**
WIRING Side Pin: **JST SWPR-001T-P025**

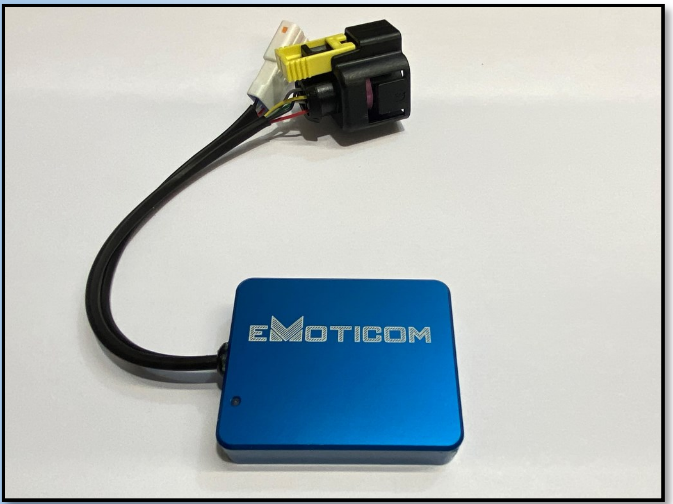
PIN	SIGNAL	FUNCTION
1	+VCC	+12V Power Supply
2	CAN H	CAN H Line
3	CAN L	CAN L Line
4	GND	Ground Power Supply

WIRING Side Connector:
K-TYPE MINI PLUG (IEC)
LabFacility IM-K-M

eM044 Side Connector:
K-TYPE MINI SOCKET (IEC)
LabFacility IM-K-LCF







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EMOTICOM

eM065

Lambda Controller

***eM065** is a compact high-performance lambda controller configurable for Bosch LSU 4.9 wideband lambda probes.*
It can be used to verify or adjust the A/F value to tune the engine for best performance.
Output data is available in digital format on CAN. Self-diagnostic features helps to verify probe is working properly.

MAIN FEATURES

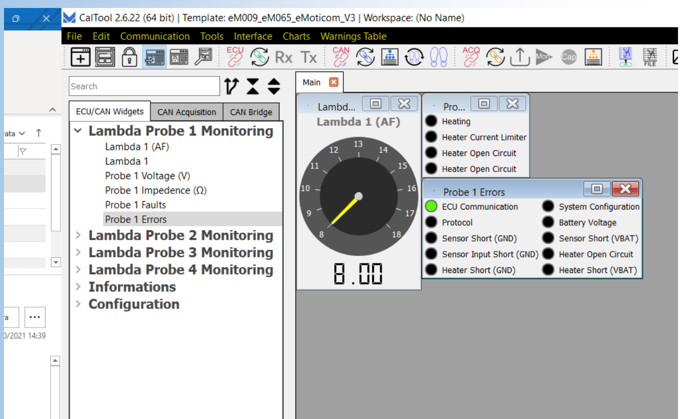
- A/F Range: from 7.0 to 20.0
- BOSCH LSU 4.9 wideband lambda probe supported (LSU 4.2 legacy version available on request)
- Warm-up strategy to foster the engine crancking.
- Self Diagnostic features
- Fully protected outputs
- CAN protocol 500 kbit/s or 1Mbit/s (configurable)
- Fully programmable with eMoticom PC Software **Caltool**
- Operative voltage: 8-16V (with reverse polarity protection)
- Operative Ambient Temperature Range: -40 … +105°C
- Size: 53 x 43 x 13 mm
- Weight: about 50g

PINOUT

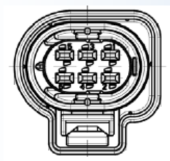
eM065 Side Connector: **JST 04T-JWPF-VSLE-S**
WIRING Side Connector: **JST 04R-JWPF-VSLE-S**
WIRING Side Pin: **JST SWPR-001T-P025**

PIN	SIGNAL	FUNCTION
1	+VCC	+12V Power Supply
2	CAN H	CAN H Line
3	CAN L	CAN L Line
4	GND	Ground Power Supply

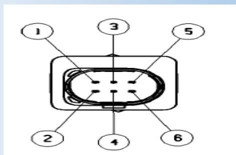
PIN	SIGNAL	FUNCTION	PIN	SIGNAL	FUNCTION
1	APE	PUMPING CURRENT	5	RT	TRIM RESISTOR
2	IPN	VIRTUELLE GROUND	6	RE+	NERNST VOLTAGE
3	H-	HEATER (-)			
4	H+	HEATER (+)			



eM065 Side Connector:



WIRING Side Connector:



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eM073

4 Channel PT100 CAN Module

eM073 *is a compact CAN module which can be used to handle up to 4 PT100 sensors.*

MAIN FEATURES

- Temperature Measurement Range: -50 … +850 °C
- Temperature Resolution: +/- 0.1°C
- Maximal Refresh Rate: 20 Hz
- PT100 types supported: all 2-wires models
- Self Diagnostic features
- CAN protocol 500 kbit/s or 1Mbit/s (configurable)
- Fully programmable with eMoticom PC Software **Caltool**
- Battery Voltage and Internal Temperature internally Sensed
- Operative voltage: 8-16V (with reverse polarity protection)
- Operative Ambient Temperature Range: -40 … +105°C
- Size: 53 x 43 x 13 mm
- Weight: about 50g

PINOUT

eM073 Side Connector: **JST 04T-JWPF-VSLE-S**
WIRING Side Connector: **JST 04R-JWPF-VSLE-S**
WIRING Side Pin: **JST SWPR-001T-P025**

PIN	SIGNAL	FUNCTION
1	+VCC	+12V Power Supply
2	CAN H	CAN H Line
3	CAN L	CAN L Line
4	GND	Ground Power Supply

eM073 Side Connector: **JST 08R-JWPF-VSLE-D**
WIRING Side Connector: **JST 08T-JWPF-VSLE-D**
WIRING Side Pin: **JST SWPT-001T-025**

PIN	SIGNAL	FUNCTION	PIN	SIGNAL	FUNCTION
1	PT100 #1+	PT100 Probe 1 (+)	5	PT100 #1-	PT100 Probe 1 (-)
2	PT100 #2+	PT100 Probe 2 (+)	6	PT100 #2-	PT100 Probe 2 (-)
3	PT100 #3+	PT100 Probe 3 (+)	7	PT100 #3-	PT100 Probe 3 (-)
4	PT100 #4+	PT100 Probe 4 (+)	8	PT100 #4-	PT100 Probe 4 (-)