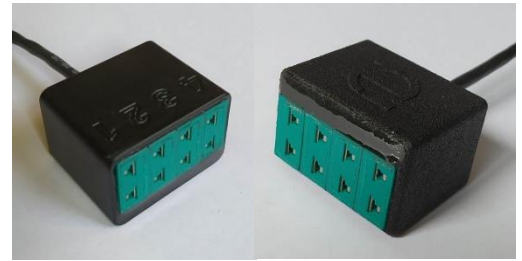# THQtronic

4IN TCK Gen2

Four TCK input to CAN bus module

(Aluminium)   (PA12)

Electrics:

Supply voltage:	5.5V to 16V (can be powered with 5V for setting the device)
Supply current:	15mA
ADC resolution:	12bits
Input lowpass filter:	160Hz (-3db)
Measure range:	-40ºC to 1300ºC (@ 25ºC. 0 to 1300ºC @ 80ºC)
Accuracy:	Gain :+/-0,5% other all 0,1% between inputs
	Offset: +/-2ºC
Measurement resolution:	0,4º

Supply,CAN	
Power Supply	Purple
GND	Black
CAN H	White
CAN L	Blue

Mechanics:

Size:	PA12: 36x24xx27mm Aluminium: 38x25x28mm (without cable)
Cables:	KU 24AWG 18cm length
Wiring sleeve:	DR-25
Device enclosure	PA12 (MJF) or Aluminium
Protection:	IP67 (filled with PU resin)
Operating temp.:	-20 to 80ºC
Weight:	45g (PA12), 54g (Aluminium)

Functionalities

CAN:	2.0A and 2.0B
Termination	Open
CAN baudrate:	User settable (1M, 500k, 250k, 125k)
IDs:	Fully user settable
Format:	Big or Little endian (user settable)
Messages Rate:	Individually and user settable up to 1kHz
Scales:	Temperature can be scaled in ºK,ºC or ºF

Miscellaneous:

- Configuration through PEAK system or Lawicel USB/CAN tool using THQ Monitor software
- Firmware upgradable

Important note:

No insulated thermocouple can be use if it is connected to the ground. DO NOT BE CONNECTED TO ANY OTHER VOLTAGE.

Order code:

PA12 enclosure:	4IN tck PA
Aluminium enclosure:	4IN tck AL

Software description

THQtronic

CAN bus

CAN messages (up to 8 messages) are fully configurable. ID, Length, period, format and data content. This allow you to build the necessary messages for your project.

CAN setup

	ID	DLC	Period (ms)	Cfg	Word1 (D0,D1)	Word2 (D2,D3)	Word3 (D4,D5)	Word4 (D6,D7)
Msg 1	0x300	8	100	Big endian	TCK 1	TCK 2	TCK 3	TCK 4
Msg 2	0x301	2	1000	Big endian	T COLD	Not Used	Not Used	Not Used
Msg 3	0x302	8	0	Big endian	Not Used	Not Used	Not Used	Not Used
Msg 4	0x303	8	0	Big endian	Not Used	Not Used	Not Used	Not Used
Msg 5	0x304	8	0	Big endian	Not Used	Not Used	Not Used	Not Used
Msg 6	0x305	8	0	Big endian	Not Used	Not Used	Not Used	Not Used
Msg 7	0x306	8	0	Big endian	Not Used	Not Used	Not Used	Not Used
Msg 8	0x307	8	0	Big endian	Not Used	Not used	Not Used	Not Used

Input configuration:

Inputs setup

	Name	Tavg.(ms)	Config	Table	Gain	DIV	Offset	VRmin	VRmax	Dec.
Input 1	CHANNEL1	100	InstP,	4INtck	1	1	0	0	5	1
Input 2	CHANNEL2	100	InstP,	4INtck	1	1	0	0	5	1
Input 3	CHANNEL3	100	InstP,	4INtck	1	1	0	0	5	1
Input 4	CHANNEL4	100	InstP,	4INtck	1	1	0	0	5	1

Clicking on the grid, open a toolbox for set each parameters.
Decimal place is used only for show value on screen.

For each input, user can set the channel name up to 16char. Average period length define the time in ms during which all sample are averaged.
Gain, divider and offset are also settable for convert ºC (default) to ºK, or ºF. This also give the possibility to calibrate the input for better accuracy (ex: Cold temperature compensation offset).
Gain can be also adjusted.
Note that Gain,DIV and offset are integer values. To apply 1% gain correction, you must set gain="101" and DIV="100". Result is 1,01 multiplier.
Two button automatically convert ºC to ºK or ºF. User correction will be erased in this case.

Input Setting

Input Name	CHANNEL1
Average Period (ms)	100
LookUp Table	4IN TCK

Conversion coefficients:

(A * X	/	C)	+	Offset	Decimal place
1		1		0	1

ºC to ºF   ºC to ºK

Export to DBC

CAN configuration can be exported to DBC file. User must finish the dbc configuration adding Min/Max scale and so on using a dbc editor.