# Syvecs LTD

# V1.2

# KT8

This document is intended for use by a technical audience and describes a number of procedures that are potentially hazardous. Installations should be carried out by competent persons only.

Syvecs and the author accept no liability for any damage caused by the incorrect installation or configuration of the equipment.

Please Note that due to frequent firmware changes certain windows might not be the same as the manual illustrates. If so please contact the Syvecs Tech Team for Assistance.

Support@Syvecs.com



The KT8 Can Module is designed to provide even more data to our engine control units with accurate K Type thermocouple sensor readings over Can-bus on either a 1mb or 500kb bus.

KType temperature range from 0-1250c

Packaged in a lightweight CNC billet aluminium case with a 18way JAE Connector. Mating Socket Connector - JAE - MX23A18SF1 KT Connector - Phoenix Contact 1778832



Wiring



Pin Number	Pin Function
3 or 4	Ground
5	CAN1 LOW - 500kb
6	CAN0 LOW - 1mb
7	Ground
12	12V Supply
14	CAN1 Hi - 500kb
15	CAN0 HI - 1mb

S6Plus with PNP Kits connect KT8 Can1 to S6Plus Can1 (C8/C9) - Generic S6+ ECU Speak to Support@Syvecs.com S7Plus connect KT8 Can0 to S7Plus Can2 (B2/B3) - if X10 Expander is wired to Can2 then speak to Support@Syvecs.com S8 & S12 connect KT8 Can0 to Either ECU Can1 or Can2

No Termination Resistor is set on the KT8 Module so the GPS needs to be wired as a Node on the Canbus

The KT connectors feature a push-lock system where after a wire is pushed into the appropriate hole its locked and a connection is made. To remove the wire the release latch needs to be pushed in and then the wire gentle pulled on as shown below.



Pin1 = K-Type + (Green Or Yellow) Pin2 = K-Type - (White Or Red)

## CAN Output Description - All in Big Endian Format

Can0 - 1MB Speed (S7 / S8 / S12)

#### 0x0000 = 0c 0x30D0 = 1250c

#### Frame ID 0xF6 - KT1-4

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
KT1 (Signed Valu	e) DegC - Divide by 10		e) DegC - Divide by 0		ue) DegC - Divide 10	KT4 (Signed Value 1	e) DegC - Divide by 0

#### Frame ID 0xF7 - KT5-8

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
	e) DegC - Divide by 0		e) DegC - Divide by 10		ue) DegC - Divide 10	KT8 (Signed Value 1	) DegC - Divide b 0

### Can1 - 500kb Speed (S6Plus / S7plus Can1)

0x0000 = 0c 0x30D0 = 1250c

#### Frame ID 0xF6 - KT1-4

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
	e) DegC - Divide by 10	KT2 (Signed Value 10	) DegC - Divide by )		ue) DegC - Divide 10	KT4 (Signed Value 1	e) DegC - Divide by 0

#### Frame ID 0xF7 - KT5-8

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
KT5 (Signed Valu	e) DegC - Divide by 10	KT6 (Signed Valu	e) DegC - Divide by 10		ue) DegC - Divide 10	KT8 (Signed Value 1	e) DegC - Divide by 0

### Syvecs Calibration Setup

#### <u>S7Plus / S8 / S12</u>

#### The EGT frames can be picked up on any of the Generic Recieve A assignments, Below its enabled on A01-A08

#### The frames are set for A01-04 as F6h and A05-06 on F7h

Scal 2.	5.127 : C:\Users\Public\Documents\Syvecs\Calibration	is\Test Training\Generic.SC					_ a >
	Pastecal Device Gauge Worksheet View II		3.1/1)				EDITS ACTIVE
Datastrear	s / Generic CAN Receive / Receive A Identifier				ESC	Edit Options Select Math Learn IMearisati	an syncState STOP
Frame	Id 0F7h (FFFFFAB6h / -84.6%)					Tare Theorem Tonner Tares Transmission	runMode STOP runTime 0:00:00.0
A05A08	0F/n (FFFFAB6n / -84.6%)						rpm 0
							ppsFinal 0.0 tps1 3.0
7C0h -							map1 2831
780h -							prp1 0 turboSpeed1 0.0
740h -							ett1 100.0
700h -							acti 50.0 bap 1013
							ccp1 0
6C0h -							eop1 0 fp1 0
680h -							relFp1 0 ext 80.0
640h -		÷					lam1 1.250
600h -							egtMax 900 vbat 13.99
5C0h -							btMax 29.6
							calSwitch CAL01 [Strada] tcSwitch TC01
580h -							alsSelectSwitch ALS01
540h -							launchSelectSwitch LCH01 calOverrideActive IDLE
500h -							calSelect CAL01 [Strada]
4C0h -							tcSelect TC01 alsSelect ALS01
480h -							launchSelect LCH01
							tuneSwitch 0 ImpMode SENSOR WARNING LEVEL
440h -							engineEnable OK
꼽 400h -							fuelEnalPri1 0.000
300h -							fuelFinalPn2 0.000 fuelFinalSec1 0.000
380h -							fuelFinalSec2 0.000
340h -							ignFinalPri1 0.00 ignFinalPri2 0.00
300h -							IgnPhaiPh2 0.00
							Solaris S8
2C0h -							Board level : 3 Boot code : 1.40
280h -							FPGA : 2.15
240h -							Mod : 540 Mod : AN17-20
200h -							Mod : RS-Spec
1C0h -							Serial number : 5642 Root id : GENERIC
							Main code : 1.578.1
180h -							Calibration programmed ECU time now : 25/09/2018@05:30:28
140h -							Feat : T Calibration was programmed
100h -							LR GPS : CAN1
0C0h -							R5232 CAN Echo frame rate clipped to 5Hz R5232 datastream : CAN echo
080h -							Solaris S8 Board level : 3
040h -							Boot code : 1.40
000h -							FPGA : 2.15 Mod : 540
	A08 -	A12 -	A16 -	A20 -	A24-	- A28 -	Q Mod : AN17-20
		A					
	A01.	A09.	A13.	A17.	A21.	A25.	Root id : GENERIC
			Fra	ame			Main code : 1.578.1 Calibration programmed
							ECU time now : 25/09/2018@05:30:43 Feat : T
			14 A05 A08 A09 A12 A12 A16 A	17A20 A21A24 A25A28 A29A3	3		Calibration was programmed
				646h 647h 648h 649			RS232 CAN Echo frame rate clipped to 5Hz RS232 datastream : CAN echo

#### 8 User Defined sensors are setup for EGT1-EGT8, a help video on this can be found below <u>https://www.youtube.com/watch?v=IVIdYESOuOQ&t=252s</u>

A example calibration can also be provided by support@syvecs.com

The X:Can Recieve items are then set in the pin assignments to the Inputs

File Cal Pastecal Device Gauge Worksheet View	ID(GENERIC) Dev(S8 #5642) SwVer(1.578.1/1)			EDITS ACTIVE
MENU Auto Selector Auto Trans Custom DBW pos DBW S	ETUP Fan Control Injector Pulse Lambda Lin RelFPR DI test TPS/APP# Tuning			
IO Configuration / Pin Assignments	Fer	Edit Options Select Math Learn liNearisation	syncState	360
Pin Use	Laft.	Care Shours Secce Front Front Internation	runMode	RUN
A) Inputs : U18 [EGT1] X:CAN RECEIVE A #01 :			runTime rpm	0:06:01.8 4083
A) Inputs : Traction Control Tune Down Switch	NOT CONNECTED		ppsFinal	0.0
A) Inputs : Traction Control Tune Switch	NOT CONNECTED		tps1	0.0
A) Inputs : Traction Control Tune Up Switch	NOT CONNECTED		map1 prp1	0
A) Inputs : Traction Control Up Switch	NOT CONNECTED		turboSpeed1	0.0
A) Inputs : Turbo Speed 1A	NOT CONNECTED		etti atti	100.0 40.0
A) Inputs : Turbo Speed 1B	NOT CONNECTED		bap	1013
A) Inputs : Turbo Speed 2A	NOT CONNECTED		ccp1	0
A) Inputs : Turbo Speed 2B	NOT CONNECTED		eop1 fp1	0
A) Inputs : U01 [EGT1]	NOT CONNECTED		relFp1	1013
A) Inputs : U02 [EGT2]	NOT CONNECTED		eot Jami	120.0
A) Inputs : U03 [EGT3]	NOT CONNECTED		lam1 egtMax	1.000
A) Inputs : U04 [Engine Oil Temperature (Squirt Jets)]	NOT CONNECTED		vbat	13.33
A) Inputs : U05 [Trans Line Pressure Target]	NOT CONNECTED		btMax calSwitch	30.1 CAL07
A) Inputs : U06 [Clutch A Pressure Target]	NOT CONNECTED		tcSwitch	TC07
A) Inputs : U07 [Clutch B Pressure Target]	NOT CONNECTED		alsSelectSwitch	AL507
A) Inputs : U08 [Engine Oil Level]	NOT CONNECTED		launchSelectSwitch calOverrideActive	LCH07 IDLE
A) Inputs : U09 [Clutch A Slip]	NOT CONNECTED		calSelect	CAL07
A) Inputs : U10 [Clutch B Slip]	NOT CONNECTED		tcSelect	TC07 AL507
A) Inputs : U11 [Starter Signal From TCM]	NOT CONNECTED		alsSelect launchSelect	LCH07
A) Inputs : U12 [Input Shaft Speed]	NOT CONNECTED		tuneSwitch	0
A) Inputs : U13 [Output Shaft Speed]	NOT CONNECTED		limpMode engineEnable	SENSOR WARNING LEVEL
A) Inputs : U14 [4WD Amount %]	NOT CONNECTED		rgreenabe	UK
A) Inputs : U15 [Gearbox Temperature]	NOT CONNECTED		1 btAn	-50.0
A) Inputs : U16 [Differential Temperature (Front)]	NOT CONNECTED		btPwr1 btPwr2	30.1
A) Inputs : U17 [Differential Temperature (Centre)]	NOT CONNECTED		btMax	30.1 47.00
A) Inputs : U18 [EGT1]	X:CAN RECEIVE A #01 :		astPeak	47.00
A) Inputs : U19 [EGT2]	X:CAN RECEIVE A #02:		astPeakldx astA vg	404 16.21
A) Inputs : U20 [EGT3]	X:CAN RECEIVE A #03 :		an01V	0.010
A) Inputs : U21 [EGT4]	X:CAN RECEIVE A #04 :		an02V an03V	0.010
A) Inputs : U22 [EGT5]	X:CAN RECEIVE A #05 :		an04V	4.941
A) Inputs : U23 [EGT6]	X:CAN RECEIVE A #06 :		an05V	0.010
A) Inputs : U24 [EGT7]	X:CAN RECEIVE A #07 :		an06V an07V	0.010
A) Inputs : U25 [EGT8]	X:CAN RECEIVE A #08 :		an08V	2.967
A) Inputs : Vehicle Speed (Front Left Wheel)	NOT CONNECTED		an09V	0.010
A) Inputs : Vehicle Speed (Front Right Wheel)	NOT CONNECTED		aniov aniiv	4,941
A) Inputs : Vehicle Speed (Radar)	NOT CONNECTED		an12V	0.005
A) Inputs : Vehicle Speed (Rear Left Wheel)	NOT CONNECTED		an13V an14V	0.010
A) Inputs : Vehicle Speed (Rear Right Wheel)	NOT CONNECTED		an15V	0.010
A) Inputs : Vertical G	NOT CONNECTED		an16V	0.010
A) Inputs : Wastegate Capsule Pressure 1	NOT CONNECTED		an17V an18V	0.010
A) Inputs : Wastegate Capsule Pressure 2	NOT CONNECTED		an19V	0.010
A) Inputs : Wastegate Position 1	NOT CONNECTED		an20V an21V	0.010 4.935
A) Inputs : Wastegate Position 2	NOT CONNECTED		an22V	4,941
A) Inputs : Weight On Wheels Switch	NOT CONNECTED		an23V	0.239
A) Inputs : Yaw	NOT CONNECTED		an24V	0.073

#### S6-I & S6Plus / S7-I & S7Plus

The KT8 Data is picked up automatically on the S6-I/S6Plus & S7-I after wiring onto the Can Wires on C8 & C9 which is the 500kb Canbus in PNP Kits.

KT1-8 parameters can then be found in Scal with firmware version 1.82+

Gauge Item List
cyl01KnockThresh
cyl02KnockThresh
cyl03KnockThresh
cyl04KnockThresh
cyl05KnockThresh
cyl06KnockThresh
cyl07KnockThresh
cyl08KnockThresh
kt8_1
kt8_2
kt8_3
kt8_4
kt8_5
kt8_6
kt8_7
kt8_8
Search : kt
OK Cancel All - F10

Please email support@syvecs.com for additional help or custom can requests