NTK L1H1

Lambda Sensor Input in Scal - Pin assignments needs to be Set to Lam1V or Lam2v, Lambda Heater Needs to be assigned to a Fuel Output

Lambda Pin Number	Colour	Name	S8 Pin
1	Yellow	Heater	56, 57
2	Orange	Heater Drive	Any Fuel or Pwm
6	Red	Nernst Cell Voltage	18, 45
7	White	Ion Pump Current	75, 76
8	Black	Signal Ground	77

NTK L2H2

Lambda Pin Number	Colour	Name	S8 Pin
1	Yellow	Heater	56, 57
2	Blue	Heater Drive	Any Fuel or Pwm
6	Grey	Nernst Cell Voltage	18, 45
7	White	Ion Pump Current	75, 76
8	Black	Signal Ground	77

BOSCH LSU4.2

Lambda Sensor Input in Scal - Pin assignments needs to be Set to Lam1V or Lam2v, Lambda Heater Needs to be assigned to a Fuel Output

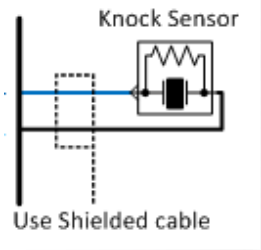
Lambda Pin Number	Colour	Name	S8 Pin
1	Black	Nernst Cell Voltage	18, 45
2	Green	Cal Resistor	
3	Grey	Heater 12v	56, 57 or 12v
4	White	Heater Drive	Any Fuel or Pwm
5	Yellow	Signal Ground	77
6	Red	Ion Pump Current	75, 76

BOSCH LSU4.9

Lambda Pin Number	Colour	Name	S8 Pin
1	Red	Ion Pump Current	75, 76
2	Yellow	Signal Ground	77
3	White	Heater Drive	Any Fuel or Pwm
4	Grey	Heater 12v	56, 57 or 12v
5	Green	Cal Resistor	
6	Black	Nernst Cell Voltage	18, 45

Knock Sensor

Syvecs S8 has two Knock inputs for a piezoelectric Example Schematic



Pin Schedule

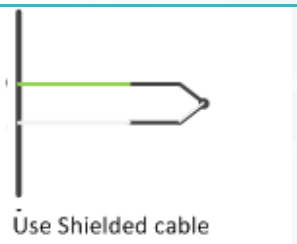
Pin Number	Function	Notes
35	Knock 1 Signal	
7	Knock 2 Signal	
65	Knock Grounds	

NOTE: Shield wires should be connected only at one end, common practice is to join shielding wires at the ECU end of the loom and connect them to a Power Ground wire.

EGT/Thermocouple

Syvecs S8 has 2 K-type thermocouple inputs.

Example Schematic



Pin Schedule

Pin Number	Function	Notes
70, 13	THER+	Green wire (K-type)
40, 12	THER-	White wire (K-type)

Driven/Output Connections

Ignition

The ignition channels are logic level outputs and IGBT designed to control ignition coils via an additional igniter (Power transistor) or Direct. These outputs can be used to drive up to 10A Peak / 5A Continuous if driving a IGBT Coil, 40ma is TTL

Adjusting the Ignition Output control is found under I/O Configuration in Scal

Pin Schedule

Pin Number	Function	Notes
5	IGN5	Logic Level (5V) output OR IGBT
4	IGN6	Logic Level (5V) output OR IGBT
3	IGN7	Logic Level (5V) output OR IGBT
2	IGN8	Logic Level (5V) output OR IGBT

Fuel Outputs

The Injection channels on the GDI4 are able to Drive High Impendence injectors Only. When using Low Impendence injectors we suggest a Ballast pack or use our 6 Channel Peak and Hold Driver.
Fuel Outputs also have full pulse width modulation available. These outputs can be used to drive up to 10A Peak / 5A Continuous and can only pull to ground.

FUEL 5 & 6 HAVE FLYBACK DIODES FITTED FOR USE WITH INDUCTIVE DEVICES LIKE VVT SOLENOID

Pin Schedule

Pin Number	Function	Notes
23	Fuel5	PWM – Flyback Diode Present
50	Fuel6	PWM – Flyback Diode Present
22	Fuel7	Injector Output or PWM
49	Fuel8	Injector Output or PWM
34	Fuel9	Injector Output or PWM
6	Fuel10	Injector Output or PWM
33	Fuel11	Injector Output or PWM
32	Fuel12	Injector Output or PWM
31	Fuel13	Injector Output or PWM
30	Fuel14	Injector Output or PWM
20	Fuel15	Injector Output or PWM
47	Fuel16	Injector Output or PWM

Half Bridge Outputs

An **H bridge** is an electronic circuit that enables a voltage to be applied across a load in either direction. These circuits are often used to drive Electronic Throttle bodies applications to allow DC motors to run forwards and backwards.

Half Bridge Outputs also have full pulse width modulation available and can be driven to 12v or Ground

These outputs can be used to drive up to 10A Peak / 5A Continuous

Pin Schedule

Pin Number	Function	Notes
58	H-Bridge1	Can be driven to 12v or Ground
59	H-Bridge2	Can be driven to 12v or Ground
60	H-Bridge3	Can be driven to 12v or Ground
61	H-Bridge4	Can be driven to 12v or Ground

GDI Injectors

The GDI4 can drive 4 solenoid type GDI Injectors direct from the ecu, power levels for controlling these can also be adjusted in Scal - i/o configuration

Pin Schedule

Pin Number	Function	Notes
24	GDI 4 +	GDI Solenoid Injector +
25	GDI 3 +	GDI Solenoid Injector +
26	GDI 2 +	GDI Solenoid Injector +
27	GDI 1 +	GDI Solenoid Injector +
51	GDI 4 -	GDI Solenoid Injector -
52	GDI 3 -	GDI Solenoid Injector -
53	GDI 2 -	GDI Solenoid Injector -
54	GDI 1 -	GDI Solenoid Injector -

GDI Pump

The GDI4 can drive 1 High pressure GDI pump direct by connecting the High Side and Low Side of the Solenoid

Pin Schedule

Pin Number	Function	Notes
32	GDI Pump -	Low Side Output
58	GDI Pump +	High Side Output