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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	S12 Pin
1	Yellow	Heater	23, 42
2	Orange	Heater Drive	Any Fuel or Pwm
6	Red	Nernst Cell Voltage	36, 55
7	White	Ion Pump Current	17, 74
8	Black	Signal Ground	75

NTK L2H2

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	S12 Pin
1	Yellow	Heater	23, 42
2	Blue	Heater Drive	Any Fuel or Pwm
6	Grey	Nernst Cell Voltage	36, 55
7	White	Ion Pump Current	17, 74
8	Black	Signal Ground	75

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

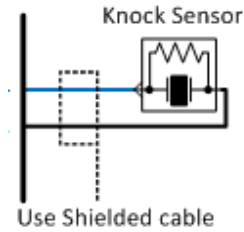
Lambda Pin Number	Colour	Name	S12 Pin
1	Black	Nernst Cell Voltage	36, 55
2	Green	Cal Resistor	
3	Grey	Heater 12v	23, 42 or 12v
4	White	Heater Drive	Any Fuel or Pwm
5	Yellow	Signal Ground	75
6	Red	Ion Pump Current	17, 74

BOSCH LSU4.9

Lambda Pin Number	Colour	Name	S12 Pin
1	Red	Ion Pump Current	17, 74
2	Yellow	Signal Ground	75
3	White	Heater Drive	Any Fuel or Pwm
4	Grey	Heater 12v	23, 42 or 12v
5	Green	Cal Resistor	
6	Black	Nernst Cell Voltage	36, 55

Knock Sensor

Syvecs S12 has two Knock inputs for a piezoelectric Example Schematic



Pin Schedule

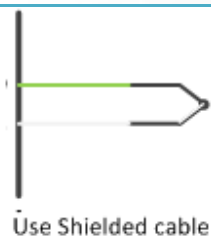
Pin Number	Function	Notes
27	Knock 1 Signal	
46	Knock 2 Signal	
65	Knock 3 Signal	
7	Knock 4 Signal	
8	Knock Ground	

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 S12 has 2 K-type thermocouple inputs.

Example Schematic



Pin Schedule

Pin Number	Function	Notes
47	THER+1	Green wire (K-type)
28	THER-1	White wire (K-type)
9	THER+2	Green wire (K-type)
66	THER-2	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
2	IGN1	Logic Level (5V) output OR IGBT
3	IGN2	Logic Level (5V) output OR IGBT
4	IGN3	Logic Level (5V) output OR IGBT
5	IGN4	Logic Level (5V) output OR IGBT
114	IGN5	Logic Level (5V) output OR IGBT
115	IGN6	Logic Level (5V) output OR IGBT
116	IGN7	Logic Level (5V) output OR IGBT
117	IGN8	Logic Level (5V) output OR IGBT
118	IGN9	Logic Level (5V) output OR IGBT
119	IGN10	Logic Level (5V) output OR IGBT
120	IGN11	Logic Level (5V) output OR IGBT
121	IGN12	Logic Level (5V) output OR IGBT

Fuel Outputs

The Injection channels on the S12 are able to Drive High Impedence injectors Only. When using Low Impedence 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.

Pin Schedule

Pin Number	Function	Notes
61	Fuel1	Injector Output or PWM
80	Fuel2	Injector Output or PWM
22	Fuel3	Injector Output or PWM
41	Fuel4	Injector Output or PWM
60	Fuel5	Injector Output or PWM
79	Fuel6	Injector Output or PWM
21	Fuel7	Injector Output or PWM
40	Fuel8	Injector Output or PWM
109	Fuel9	Injector Output or PWM
101	Fuel10	Injector Output or PWM
93	Fuel11	Injector Output or PWM
85	Fuel12	Injector Output or PWM
110	Fuel13	Injector Output or PWM
102	Fuel14	Injector Output or PWM
94	Fuel15	Injector Output or PWM
86	Fuel16	Injector Output or PWM
111	Fuel17	Injector Output or PWM
103	Fuel18	Injector Output or PWM
95	Fuel19	Injector Output or PWM
87	Fuel20	Injector Output or PWM
112	Fuel21	Injector Output or PWM
104	Fuel22	Injector Output or PWM
96	Fuel23	Injector Output or PWM
88	Fuel24	Injector Output or PWM

PWM Outputs

The PWM channels on the S12 are able to drive PWM based Devices like Wastegate solenoid, relays etc . These outputs can be used to drive up to 10A Peak / 5A Continuous

Pin Schedule

Pin Number	Function	Notes
107	Pwm1	PWM
99	Pwm2	PWM
91	Pwm3	PWM
83	Pwm4	PWM
108	Pwm5	PWM
100	Pwm6	PWM
92	Pwm7	PWM
84	Pwm8	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
82	H-Bridge1	Can be driven to 12v or Ground
90	H-Bridge2	Can be driven to 12v or Ground
98	H-Bridge3	Can be driven to 12v or Ground
106	H-Bridge4	Can be driven to 12v or Ground
62	H-Bridge5	Can be driven to 12v or Ground
81	H-Bridge6	Can be driven to 12v or Ground