

AUTRONIC SM4 ECU Specifications

SM4 ECU is available as a Loom kit or Connector set kit

Loom kit includes ECU, unterminated wiring loom, Autronic Air temperature sensor, Serial Communications Cable.

Connector set kit includes ECU, Connector set with pins & seals, Autronic Air temperature sensor, Serial Communications Cable



Microcomputer		Intel 16 bit 20MHz
Power Supply - Voltage	Normal operation	12v to 14v DC nominal 6.2v to 18v DC continuous
	Supply limits	+/- 24v (5 minutes) +/- 1000v inductive spike (10usec) 80A Alternator load dump
Power Supply - Current	ECU only	< 0.2 Amp
	At Idle	< 1.0 Amp
	At maximum Load	< 16 Amp (depending on injector type)
Operating temperature range	Minimum	-40 deg C
	Maximum	+85 deg C
Engine Cylinder selections	Number of cylinders	1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 16
	Types	2 stroke, 4 stroke, Rotary
Engine operation ranges	1 to 4 cylinders	0 to 28000 RPM
	5 or 6 cylinders	0 to 18000 RPM
	7 or 8 cylinders	0 to 14000 RPM
	10 to 16 cylinders	0 to 12000 RPM
Hardware Drivers	Injectors	8 switchable 4A/2A Peak in two groups
	Ignition	4 Push-Pull 1A
	Output	4 Push-Pull 1A, 4 Open-Collector 2-6A 2 PWM, up to 1.2kHz, 3.5A
Injection Pulse Timing	Minimum pulse time	0.65 msec
	Maximum pulse time	50 msec
	Resolution	0.1% approximately
	Accuracy	< (1% + 10usec)
Injection Phase Timing	4 stroke Range	0 to 717 deg
	2 stroke / Rotary Range	0 to 359 deg
	Resolution	2.8 deg
	Accuracy	< (1.4deg + 0.3 msec)
Ignition timing	Timing modes	Dwell or Pulse
	Timing range	-64 deg to +63.5 deg
	Resolution	0.5 deg
	Accuracy	0.3 deg
Base Fuel & Ignition tables	RPM sites	1 to 32 freely definable
	Load sites	1 to 16 freely definable
Data Logging Memory	Size	112k bytes
Housing	L * W * H	130 * 124 * 48mm
	Type	Anodized aluminium
Weight		0.5 kg
Connectors	Main connector	42 way splash & dust proof
	Communications	3.5mm stereo Serial Data

AUTRONIC SM4 Input / Output Software Function overview

Input Functions	Output Functions
4 Input switches are convertible to Direct, Toggle, Stretch or Monostable actions	4 Feedback functions including 2 Continuously Variable Camshafts, 2-axis target tables with 2 inhibit parameters
Analogue inputs can be used as 2 switch inputs with different analogue thresholds	Boost, ALS, Idle, Intercooler, Tacho, NOS, Fuel pump 13 User defined 2-axis functions each with 2 inhibits
Analogue sensor inputs can be defined with preset, Linear or User defined tables	Traction control with Dry / Wet modes and up to 4 wheel speed inputs depending on input channel usage
Selection of Fuel / Ignition trim tables	Air conditioner, 2x Fans, Fuel used, Tumble valve, Error light

AUTRONIC SM4 Input / Output Pin Functions

Pin Name	I / O	Main function / Characteristic	Alternate function / Characteristic	Usage Limits / Characteristic
Injector 1	Output	Injector control with Group 1-4 selectable Peak current of High (4Amp/1Amp) or Low (2Amp/0.5Amp)	Nil	Outputs are ON/OFF or 10Hz only PWM functions. (Other PWM frequencies not allowed). Switch inputs are switch to Ground type
Injector 2	Output			
Injector 3	Output			
Injector 4	Output		Outputs with same current as Injector group	
Injector 5	Output	Injector control with Group 5-8 selectable Peak current of High (4Amp/1Amp) or Low (2Amp/0.5Amp)	Switch Inputs with ECU internal Pull-up resistor, (SW1 - 700Hz max, SW2/3 - 200Hz max frequencies) or, Outputs with same current as Injector group	
Injector 6 / Switch 1	Output or Input			
Injector 7 / Switch 2	Output or Input			
Injector 8 / Switch 3	Output or Input			
Ignition 1	Output	Ignition trigger control, Push / Pull driver, 1 Amp per Ignition channel	Nil	Only 10Hz PWM or ON/OFF functions
Ignition 2	Output			
Ignition 3	Output			
Ignition 4	Output		Outputs with Push / Pull driver, 1 Amp per Output channel	
Output 1	Output	Stepper motor (4 or 6 wire), Push / Pull driver, 1 Amp per Output	Output with Push / Pull driver, 1 Amp per Output	Outputs are ON/OFF, 10-500Hz PWM or H-Bridge. Multi-Select 10-500Hz PWM outputs to add drive currents
Output 2	Output			
Output 3	Output			
Output 4	Output			
Output 5	Output	Open-collector, 2.5 Amp per Output. Constant or Switched power supply	Constant or Switched supply	
Output 6	Output			
Output 7	Output	Open-collector, 6 Amp		
Output 8	Output	Tacho, Open-collector, 2A		
PWM 1	Output	Open-collector 9.5-1220 Hz PWM, 3.5Amp per Output		
PWM 2	Output			
HSI 1	Input	Camshaft position inputs or	Switch	7 kHz max
HSI 2	Input	Speed inputs	Switch or Digital Airflow	7 kHz max
HSI 3	Input	Speed input	Switch	2.2 kHz max
Analog 1	Input	Spare temp / pressure	Temperature / Pressure, Control potentiometers, High-side switches	2 wire sensors require Pull-up resistor
Analog 2	Input	External MAP / BARO		
O2	Input	Air fuel ratio input		
Sync	Input	Sync input (Hall / Reluctor)	Speed input	7 kHz max
Cylinder	Input	Hall or Reluctor sensor, Generic and OEM trigger patterns		Scope function