



KV Series Function to Pin Assignment Guidelines

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1.0 Analog Input Assignment Guideline

1.1 General example configuration

Function	Pin
MAP	Analog Voltage 1
TPS	Analog Voltage 2
	Analog Voltage 3
MAF	Analog Voltage 4
Oxygen Sensor Narrow band	Analog Voltage 5
Gear Shift Force	Analog Voltage 6
Engine Temperature	Analog Voltage 7 (Pull-up Channel)
Inlet Temperature	Analog Voltage 8 (Pull-up Channel)
Engine Oil Temperature	Analog Voltage 9 (Pull-up Channel)
Fuel Temperature	Analog Voltage 10 (Pull-up Channel)
Engine Oil Pressure	Analog Voltage 11 (Pull-up Channel)
Engine Fuel Pressure	Analog Voltage 12 (Pull-up Channel)
	Analog Voltage 13
	Analog Voltage 14
EGT	Analog Voltage 15
	Analog Voltage 16

1.2 Drive by Wire example configuration

Function	Pin
MAP	Analog Voltage 1
TPS 1	Analog Voltage 2
TPS 1	Analog Voltage 3
MAF	Analog Voltage 4
Oxygen Sensor Narrow band	Analog Voltage 5
Gear Shift Force	Analog Voltage 6
Engine Temperature	Analog Voltage 7 (Pull-up Channel)
Inlet Temperature	Analog Voltage 8 (Pull-up Channel)
Engine Oil Temperature	Analog Voltage 9 (Pull-up Channel)
Fuel Temperature	Analog Voltage 10 (Pull-up Channel)
Engine Oil Pressure	Analog Voltage 11 (Pull-up Channel)
Engine Fuel Pressure	Analog Voltage 12 (Pull-up Channel)
Pedal Position 1	Analog Voltage 13
Pedal Position 2	Analog Voltage 14
EGT	Analog Voltage 15
	Analog Voltage 16

2.0 Auxiliary Channel Assignment Guideline

2.0 Non VVT engine configuration

Function	Pin
Idle Solenoid	Auxiliary 1
Boost Solenoid	Auxiliary 2
Tacho	Auxiliary 3
Fuel Pump	Auxiliary 4
Fuel Pump Speed	Auxiliary 5
AC Clutch	Auxiliary 6
Cooling Fan	Auxiliary 7
CAM Switch	Auxiliary 8
AC Fan	Auxiliary 9
CEL	Auxiliary 10
	Auxiliary 11
	Auxiliary 12
	Auxiliary 13
	Auxiliary 14
	Auxiliary 15
	Auxiliary 16

2.1.VVT engine configuration

Function	Pin
VVT Intake LH Solenoid	Auxiliary 1
VVT Intake RH Solenoid	Auxiliary 2
VVT Exhaust LH Solenoid	Auxiliary 3
VVT Exhaust RH Solenoid	Auxiliary 4
Idle Solenoid	Auxiliary 5
Boost Solenoid	Auxiliary 6
Tacho	Auxiliary 7
Fuel Pump	Auxiliary 8
Fuel Pump Speed	Auxiliary 9
AC Clutch	Auxiliary 10
Cooling Fan	Auxiliary 11
CAM Switch	Auxiliary 12
AC Fan	Auxiliary 13
CEL	Auxiliary 14
	Auxiliary 15
	Auxiliary 16

2.2. x4 Channel DBW configuration

Function	Pin
Boost Solenoid	Auxiliary 1
Tacho	Auxiliary 2
Fuel Pump	Auxiliary 3
Fuel Pump Speed	Auxiliary 4
AC Clutch	Auxiliary 5
Cooling Fan	Auxiliary 6
CAM Switch	Auxiliary 7
CEL	Auxiliary 8
DBW 1 Motor +	Auxiliary 9
DBW 1 Motor -	Auxiliary 10
DBW 2 Motor +	Auxiliary 11
DBW 2 Motor -	Auxiliary 12
DBW 3 Motor +	Auxiliary 13
DBW 3 Motor -	Auxiliary 14
DBW 4 Motor +	Auxiliary 15
DBW 4 Motor -	Auxiliary 16

3.0 Digital Input Assignment Guideline

3.0 Non VVT engine configuration

Function	Pin
Speed	Digital Input 1
AC switch	Digital Input 2
Power Steer switch	Digital Input 3
Start Switch	Digital Input 4
Clutch Switch	Digital Input 5
Water Spray	Digital Input 6
Turbo Speed	Digital Input 7
Gear Cut	Digital Input 8
Neutral Switch	Digital Input 9
Speed	Digital Input 10
	Digital Input 11
	Digital Input 12
	Digital Input 13
	Digital Input 14

3.1 VVT engine configuration

Function	Pin
Intake LH Cam Position	Digital Input 1
Intake RH Cam Position	Digital Input 2
Exhaust LH Cam Position	Digital Input 3
Exhaust RH Cam Position	Digital Input 4
Speed	Digital Input 5
Turbo Speed	Digital Input 6
Gear Cut	Digital Input 7
AC switch	Digital Input 8
Power Steer switch	Digital Input 9
Start Switch	Digital Input 10
Clutch Switch	Digital Input 11
Water Spray	Digital Input 12
Neutral Switch	Digital Input 13
	Digital Input 14

4.0 Variable Valve Timing (VVT) Assignment Guideline

VVT Inputs (Cam Position)

Only available on Digital Input Channels 1 -4 .

VVT Inputs

Recommend using Auxiliary Channels 1- 8 or any spare Fuel Channels

5.0 Drive by Wire (DBW) Assignment Guideline

DBW Inputs

Single DBW

- Recommend Throttle Position 1 on Analog Volt Channel 1
- Recommend Throttle Position 2 on Analog Volt Channel 2

- Recommend Pedal Position 1 on Analog Volt Channel 13
- Recommend Pedal Position 2 on Analog Volt Channel 14

Dual DBW

- Recommend Throttle Position 1 on DBW 1 Analog Volt Channel 1
- Recommend Throttle Position 2 on DBW 1 Analog Volt Channel 2
- Recommend Throttle Position 1 on DBW 2 Analog Volt Channel 3
- Recommend Throttle Position 2 on DBW 2 Analog Volt Channel 4

- Recommend Pedal Position 1 on Analog Volt Channel 13
- Recommend Pedal Position 2 on Analog Volt Channel 14

Quad DBW

- Recommend Throttle Position 1 on DBW 1 Analog Volt Channel 1
- Recommend Throttle Position 2 on DBW 1 Analog Volt Channel 2
- Recommend Throttle Position 1 on DBW 2 Analog Volt Channel 3
- Recommend Throttle Position 2 on DBW 2 Analog Volt Channel 4
- Recommend Throttle Position 1 on DBW 2 Analog Volt Channel 5
- Recommend Throttle Position 2 on DBW 2 Analog Volt Channel 6
- Recommend Throttle Position 1 on DBW 2 Analog Volt Channel 7
- Recommend Throttle Position 2 on DBW 2 Analog Volt Channel 8

- Recommend Pedal Position 1 on Analog Volt Channel 13
- Recommend Pedal Position 2 on Analog Volt Channel 14

DBW Output

Single DBW

- Motor Positive on Auxiliary 9
- Motor Negative on Auxiliary 10

Dual DBW

- DBW 1 Motor Positive on Auxiliary 9
- DBW 1 Negative on Auxiliary 10

- DBW 2 Motor Positive on Auxiliary 11
- DBW 2 Negative on Auxiliary 12

Quad DBW

- DBW 1 Motor Positive on Auxiliary 9
- DBW 1 Negative on Auxiliary 10

- DBW 2 Motor Positive on Auxiliary 11
- DBW 2 Negative on Auxiliary 12

- DBW 3 Motor Positive on Auxiliary 13
- DBW 3 Negative on Auxiliary 14

- DBW 4 Motor Positive on Auxiliary 15
- DBW 4 Negative on Auxiliary 16

6.0 Idle Stepper Output Assignment Guideline

Bipolar Stepper Motor(4 terminal)

ONLY available on Auxiliary channels 1- 8

Unipolar Stepper Motor(6 terminal)

ONLY available on Auxiliary channels 1- 8 and Injection Channels 1-8