INSTRUMENT CLUSTER DIAGNOSTICS

Diagnostic codes can be retrieved from the speedometer or by connecting the bike to Indian diagnostic tool. Codes can be cleared using Speedo and Diagnostic tool.

Instrument Cluster Identification

The speedometer hardware and software versions can be obtained by simultaneously holding the mode button and turning on the ignition switch.

Instrument Cluster Diagnostic Information

The speedometer is capable of displaying diagnostic codes and clearing diagnostic codes

1. Turn ignition switch on, but do not run engine
2. Run/stop switch to the run position

1. The toggle mode button is located on the backside of the left hand control. (see figure Below) Press mode switch to change display modes.

   The LCD display modes:

   - Odometer
   - Trip 1
   - Trip 2
   - Engine Hours
   - RPM
   - Battery Voltage
   - Clock

2. Toggle through the displays until the RPM mode is displayed
3. Hold the toggle switch for 10 seconds
4. The speedometer screen will display " DTCS" for ~3-5 seconds
5. If there are no codes present, the screen will display "NONE"
6. If there is a code or codes present, a four digit code will be displayed

DTC		DESCRIPTION
P0130		Front O2 Sensor circuit (resistance for sensor not in range)
P0150		Rear O2 Sensor circuit (resistance for sensor not in range)
P0110		Intake Air temperature sensor circuit (resistance not in range)
P0560		Battery voltage out of range
P0601		Internal Engine control module memory checksum error
P0115		Engine Temperature (front cylinder) circuit (resistance not in range)
P0120		Throttle Position Sensor circuit "A"
P0351		Front Ignition coil circuit (ECU to Coil)
P0352		Rear Ignition coil circuit (ECU to Coil)
P0201		Injector 1 circuit (open), cylinder 1
P0202		Injector 2 circuit (open), cylinder 2
P0135		Front O2 sensor heater circuit (resistance not in range)
P0155		Rear O2 sensor heater circuit (resistance not in range)
P0105		Manifold Pressure (MAP sensor) circuit (resistance not in range)
P0604		Internal Control Moudle Random Access Memory (RAM) error
P0605		Internal Control Moudle Read Only Memory (ROM) error
P0335		Crankshaft Position sensor circuit (CPS)
P0505		Idle Air Control System (IAC)
P0606		ECM/PCM Processor
P0500		Vehicle Speed Sensor

1. Press the toggle button to go to next code
2. To clear codes, toggle until END is displayed on screen
3. Simultaneously hold front brake lever and press mode button twice while the screen displays “END”
4. The screen will display “CLEAR” after code has been cleared

BODY CONTROL MODULE

The Body Control Module allows for improved diagnostic capability. The increase in information will allow the user to systematically diagnose issues without guessing or “throwing parts” at a problem.

The body control module (BCM) is a module that can be programmed to meet system requirements without adding more parts to the electrical system. The BCM can be programmed to react similar to a circuit breaker or a fuse, depending on the requirements. The programming is done by Indian Motorcycle Company and cannot be programmed at the dealership.

To access BCM diagnostic information using the speedometer, complete the following:

- Toggle through the menu to the Voltage reading.
- Engine not running
- Ignition on
- Transmission in Neutral
- A brake switch active
- Clutch switch active
- Mode button (left rear switch cube) activated last and held for 10 seconds.

Hardware and Software information

The first piece of information displayed will be the hardware revision level of that module. The display will show "REVH00”.
The second piece of information displayed will be the software revision level of the module: The display will show "REVS02".

INPUTS to BCM

The following are the inputs in the order they are displayed. To move from one input to the next press the Mode switch.

Inputs:

Bit#	Function Description	Inactive display	Active display
0	Brake Switch	"BKIOFF"	"BKI_ON"
1	Spot Light Switch	"SPIOFF"	"SPI_ON"
2	Engine Run Status	"ERSOFF"	"ERS_ON"
3	Start Status	"STEOFF"	"STE_OK"
4	Start Switch	"STIOFF"	"STI_ON"
5	Engine Run Switch	"ERIOFF"	"ERI_ON"
6	High Beam Switch	"HBIOFF"	"HBI_ON"
7	Not used	No display	No display

INPUT INSTRUCTIONS

Brake Switch -
Inactive display: "BklOFF" - Brake switch (either front or rear) is not activated.
Active display: "Bkl_ON". Brake switch (either front or rear) is activated
Note: Both front and rear switches go to the same input.

Spot Light Switch
Inactive display: "SPIOFF"- Spot lamp switch is in the "OFF" position
Active Display: " SPI_ON" – Spot lamp switch is in the "ON" position
Note: The over ride of the headlight/spotlights prior to starting the engine or while the engine is running and in diagnostic mode is accomplished by cycling the spotlight switch from off-on-off and then to the desired state for the spot lights..

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Engine Run Status
Inactive display: “ERSOFF”- No output from ECM to BCM to activate fuel pump, ignition coil and fuel injectors
Active Display: “ERS_ON”- Output from ECM to BCM activates fuel pump ignition coil and fuel injectors
To test: Cycle the “run/stop” switch from “off” to “on”. The display will indicate “ ERS_ON” for ~2 seconds

Start Status
Inactive display: “STEOFF”- No output from ECM to BCM to activate starter
Active Display: “STE_ON”- Output from ECM to BCM to allow starter activation
To test: Put bike in neutral. Display should read “ STE_ON”. Put bike in gear and release clutch lever. Display should read “ STE_OFF”. To change display to “STE_ON”, activate clutch lever while in gear.

Start Switch
Inactive display: “STIOFF”- Start switch is in the “OFF” position
Active Display: “ STI_ON” – Start switch is in the “ON” position
To test: Put bike in gear while clutch lever released. This will allow the switch to be checked without starting vehicle. Depress starter switch to activate

Engine Run Switch
Inactive display: “ERIOFF”- Engine Run switch is in the “OFF” position
Active Display: “ ERI_ON” – Engine Run switch is in the “ON” position

High Beam Switch
Inactive display: “ERIOFF”- Engine Run switch is in the “OFF” position
Active Display: “ ERI_ON” – Engine Run switch is in the “ON” position

OUTPUTS

The outputs are displayed current values.

Bit#	Output description	Display	
0	Engine Run #1	"ER_XX.X"	
1	Engine Run #2	"O2_XX.X"	
2	Starter Solenoid	"ST_XX.X"	(see note #1)
3	Turn Signal	"TS_XX.X"	(see note #2)
4	Head Light	"HL_XX.X"	
5	Brake Light	"BK_XX.X"	
6	Spot Light	"SP_XX.X"	
7	Auxiliary #1	"A1_XX.X"	
8	Auxiliary #2	"A2_XX.X"	

Bit#	Output description	Status Off	Status On
9	Engine Run Request	"ERROFF"	"ERR_ON"

Note #1:

Starter solenoid data will be displayed for 15 seconds after the start event has occurred so that the technician may see the value, then it will update as normal.

Note #2:

Turn signal/Hazard output will show the ON state output as long as the value has been ON within the last 2 seconds. It will then revert to the reported value.

OUTPUT DESCRIPTION	CURRENT RANGE
FUEL PUMP, INJECTORS AND IGNITION COIL	3.5- 4.2 amps
O2 SENSOR HEATERS	0- 4.5 amps
STARTER SELONIOD	10- 12 amps
TURN SIGNALS	3.6- 4.4 amps
HEAD LAMP Low Beam High Beam	 3.8- 4.8 amps 4.9- 5.5 amps
BRAKE LIGHT	1.5- 1.9 amps
SPOT LAMP	8.0- 10.2 amps
AUXILARY 10AMP POWERPOINT	0- 10 amp
AUXILARY 3AMP POWERPOINT	0- 3 amps

NOTES:

1. After the unit is started, the headlight (spotlights if requested), fuel pump and O2 outputs will all show values.
2. If the unit is started when in body diagnostic mode, the headlight will not turn on automatically unless over ridden by the user.
3. Engine Run #1 is the output that supplies 12V power to the fuel pump, injectors and ignition coil.
4. Engine Run #2 is the output that supplies 12V power to the oxygen sensor heaters.
5. Turn Signal is a flasher output that supplies both the turn signal and hazard switch.
6. Engine Run Request is a ground output that follows the Engine Run Switch input from above