Transmission: **BMW 5HP19** Transmission Code: **095**

Dedicated Harness: **09X205**

SOLENOID TEST: (Engine off)				
Solenoid	**TranX Setting**	**Output Channel**	**Current Cold-Hot**	**Resistance Cold-Hot**
Solenoid 1 (MV1)	**Gear 1**	**1**	0.6 - 0.3	30 - 34 Ω
Solenoid 2 (MV2)	**Gear 2**	**2**	0.6 - 0.3	30 - 34 Ω
Solenoid 3 (MV3)	**Gear 3**	**3**	0.6 - 0.3	30 - 34 Ω
EDS-3	**Gear 4**	**4**	1.0 - 0.8	6.2 - 7.8 Ω
Lockup (EDS-4)	**Gear 5**	**5**	1.0 - 0.8	6.2 - 7.8 Ω
EPC (EDS-1) (pulsed)	**Gear 7**	**7**	1.3 - 0.8 (@ 50% duty)	5.2 - 6.8 Ω
EDS-2	**Gear 8**	**8**	1.0 - 0.8	6.2 - 7.8 Ω

NOTE:

Solenoids EDS-2 and EDS-3 pulsed at 50% Duty cycle. Resistance measured in Solenoid Test will read 2x actual resistance.

CAUTION:

Always come to a COMPLETE STOP & TURN ENGINE OFF before changing test modes

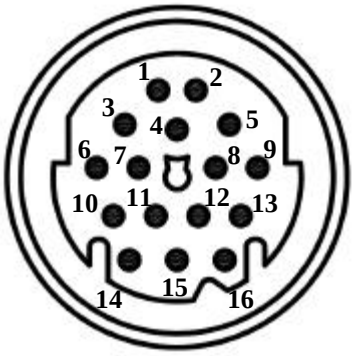
SHIFT/MONITOR TEST							
GEAR	Solenoid 1 (MV1)	Solenoid 2 (MV2)	Solenoid 3 (MV3)	EDS-3 (Pulsed)	EDS-2 (Pulsed)	Lockup (EDS-4)	EPC (EDS-1) (pulsed)
1st	ON	ON	**OFF**	ON	**OFF**	OFF	Select Duty
2nd	ON	ON	**OFF**	ON	ON	OFF	Select Duty
3rd	**OFF**	ON	**OFF**	**OFF**	ON	ON/OFF	Select Duty
4th	**OFF**	**OFF**	**OFF**	**OFF**	**OFF**	ON/OFF	Select Duty
5th	ON	**OFF**	ON	**OFF**	ON	ON/OFF	Select Duty

Notes:

- **Lock Up** is normally activated in 3rd, 4th and 5th Gears.
- Polarity = Common **Positive**

Transmission: **BMW 5HP19**

CONNECTOR:
(Looking into harness connector)



SENSOR TESTS :
The Transmission Temperature Sensor, Input Speed Sensor and Output Speed Sensor located in the transmission and can be monitored on the Sensor Module. Compare against the readings specified in the following tables.

TOT Sensor Test	
Connect Multimeter to Sensor Module Test Points 7 & 8	
Resistance	Temperature
1000 Ω	72° F

COMMENTS :
The Temperature Sensor is a thermistor, which changes resistance in relation to the temperature of the transmission fluid. As fluid temperature increases, thermistor resistance decreases.

Output Speed Sensor Test	
Connect Multimeter to Sensor Module Test Points 5 & 6	
Resistance	Comments
292 - 358Ω	Ignition Off

COMMENTS :
The Speed Sensor is Inductive - Dynamic tests can be made using a Multimeter measuring either Voltage AC or Frequency AC

An AC Voltage and frequency will be produced by the sensor, informing the transmission ECU the output speed.

Turbine Speed Sensor Test	
Connect Multimeter to Sensor Module Test Points 3 & 4	
Resistance	Comments
292 - 358Ω	Ignition Off

COMMENTS :
The Speed Sensor is Inductive - Dynamic tests can be made using a Multimeter measuring either Voltage AC or Frequency AC

An AC Voltage and frequency will be produced by the sensor, informing the transmission ECU the turbine speed.

NOTE :
RESISTANCE MEASUREMENT'S MUST BE MADE WITH IGNITION OFF. IT MAY ALSO BE NECASSARY TO DISCONNECT THE ECU HARNESS IN SOME CASES.

Wiring Chart

Case Connector Pin Number	TranX 2000 Harness Wire	Vehicle Function	TranX 2000 Output Location	TranX 2000 25 Way Pin
1	**Green/White**	Output Speed Sensor	**Sensor 5 Test Point**	19
2	**Yellow**	EPC Solenoid (EDS-1)	**Channel 7**	1
3	**Grey**	EDS-1 Solenoid	**Channel 8**	2
4	**Pink**	MV 3 Solenoid	**Channel 3**	5
5	**Orange**	Turbine Speed Sensor	**Sensor 4 Test Point**	18
6	**White**	Turbine Speed Sensor	**Sensor 3 Test Point**	17
7	**Brown**	EDS-3 Solenoid	**Channel 6**	6
8	**Blue**	MV 1 Solenoid	**Channel 1**	7
9	**Green**	MV 2 Solenoid	**Channel 2**	8
10	**Black**	Output Speed Sensor	**Sensor 6 Test Point**	20
11	**Violet**	Lockup Solenoid (EDS-4)	**Channel 5**	3
12	**Red**	+12V Solenoid Power		12
13	**White/Green**	TOT Sensor	**Sensor 7 Test Point**	21
14	**White/Violet**	TOT Sensor Return	**Sensor 8 Test Point**	22
16	**Red/Brown**	+12V Solenoid Power		13