

TRW SPS (TYPE 1) - System Overview

At some point in mid 1996, this system replaced the bright Yellow and Red MPS1 system from TRW in all models. The only exception to this is in North American Specification Range Rover (P38) vehicles where it was retained until the 1999 revamp which introduced MPS2. It's main difference is that it uses a single internal crash sense, hence the designation change from MPS to SPS.

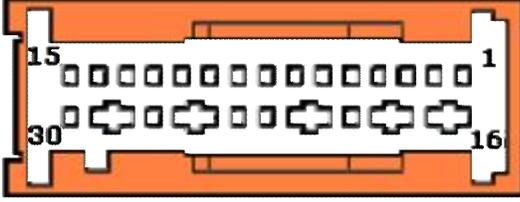


TRW SPS (TYPE 1) - Known Fitments

Vehicle makes models and variants known or believed to be using this vehicle system, required diagnostic lead and degree of known compatibility.

Vehicle Make	Vehicle Model	Vehicle Variant	Diagnostic Lead	Compatibility Level
Land Rover	Range Rover P38 (Not NAS)	1996 - 1999	Green OBD lead	Verified

TRW SPS (TYPE 1) - Pin Outs

	
1 - 4	Not Known
5 - 8	Not Used
9	Data Link Connector
10 - 11	Not Used
12	Instrument Cluster
13	Instrument Cluster
14	Ground
15	Engine Compartment Fuse box
16 - 30	Not Used

TRW SPS (TYPE 1) - Diagnostic Capabilities (Read Fault Codes)

Each airbag system can self detect up to 24 faults. Most of these are major or safety related faults causing full system shutdown with only a few being minor caused by, for instance, a flat battery. The systems perform a self-diagnostic test that takes about 15 seconds whenever the ignition is switched on, logging any faults that are found, then at regular intervals thereafter. Resistors are placed at strategic points in the airbag wiring harness / loom giving the systems the ability to self detect open or short circuits. Main loom loops are from the ECU up the column through the spiral cassette through the airbag and back through the spiral cassette to the ECU; from the ECU through the passenger airbag and back again; on MPS systems, one through each of the two crash sensors mounted behind the head lamps at the front and then returning to the ECU, then two loops each going to the instrument cluster, through a bulb each and back again. In accordance with the manuals, no repairs must be carried out on the loom at all; hence, no wiring diagram is supplied in the manufacturer's manuals. All problems involving the airbags, spiral cassette, crash sensors, or loom must be done in strict accordance with the relevant manufacturer's workshop manual instructions. There is a deep memory within the airbag ECU that keeps a long-term record of resets to detected faults. This means that if a particular connection was poor and went open circuit - even just once - the fault would be logged by the system as "a sensor is open circuit" and the airbag warning light would come on. If the fault was not found and the fault code memory was cleared it would be very likely to reappear. This would be logged as an intermittent fault within the system.

TRW SPS (TYPE 1) - Diagnostic Capabilities (Clear Fault Codes)

This function checks the fault code memory for resident faults and clears the fault code memory if the fault has been rectified. Having deleted the faults the system then rechecks the fault memory to ensure that it is clear. Failure to clear the fault memory successfully is usually due to the system re-logging the fault the moment the fault memory is clear, meaning that the fault has not been rectified properly and as far as the system is concerned, still exists. The system may also carry out a re-check for successful clearing of the fault code memory but then the system may re-log the fault shortly after.