

## ELECTRICAL SPECIFICATIONS

### Power supply requirements

The vehicle should supply 13.5V at the power connector to guarantee the defined power level.

### Supply Voltage Range (Terminal 30)

- Rated Voltage for component design: 13.5 V
- Voltage range for steering assist (continuously): 9 V to 16 V
- Undervoltage detection: Cutout voltage < 9 V, Reset voltage > 10 V
- Overvoltage detection: Cutout voltage > 16 V, Reset voltage < 15 V
- Filter time under/overvoltage detection: 1 +/- 0.1 sec

### Key ON Signal Voltage Range (Terminal 15)

- Rated Voltage for Component Design: 13.5 V
- Ignition ON: > 8 V
- Ignition OFF: < 6 V
- Filter time under/overvoltage detection: 1 +/- 0.1 sec

### Current Draw

- Maximum current draw on ignition supply (Terminal 15): 200 mA.

### Connections

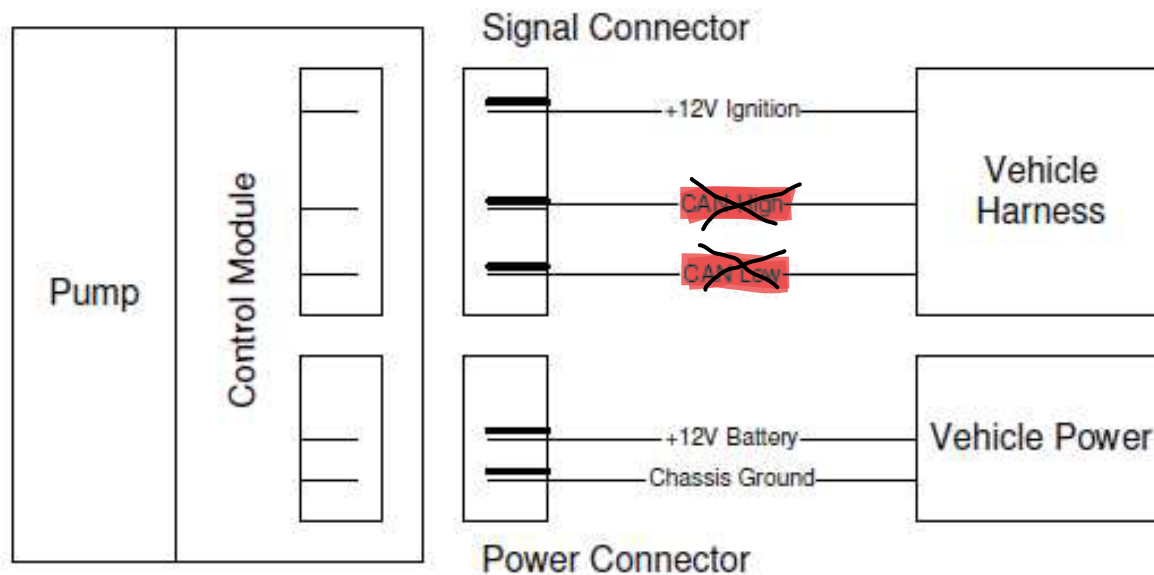


Figure 3: Electrical Schematic Diagram

### Signal Characteristics

- Chassis Ground: Connected to vehicle body and negative terminal of 12V battery.
- +12V Battery (Terminal 30): Connected to Positive Terminal of 12V battery, fused & unswitched
- +12V Key ON (Terminal 15): Power applied when Key Switch is in Run and Start positions.
- CAN High and CAN Low: Connected to CAN Network.

## Power Connector

The Power Connector conforms to the following specifications: -

- Connector Type/Orientation: Header connector with male terminals
- Connector Type: Yazaki
- Shell: Yazaki
- Terminals: Yazaki (10mm<sup>2</sup>) / (16mm<sup>2</sup>)
- Wire Seals: Yazaki (10mm<sup>2</sup>) / (16mm<sup>2</sup>)

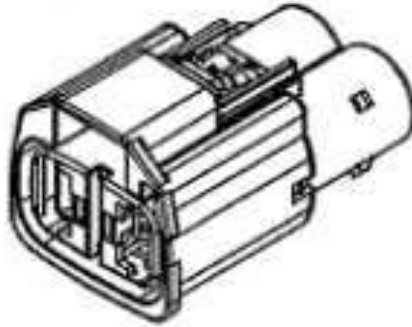


Figure 4: Power Connector

## Power Connector Designation

The MPU power connector pin out is shown in Figure 5 and Table 1 below.

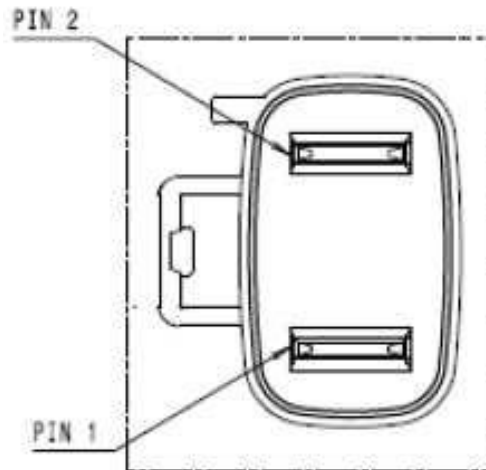


Figure 5: Power Connector Pin Out

Pin	Designation
1	UBat / VBATT
2	GND / V0

Table 1: Power Connector Pin Designation

## Signal Connector

The Signal Connector conforms to the following specifications: -

- Lifetime Mating Cycles: 25 minimum
- Mating Force: 75N maximum
- Connector Type/Orientation: Header connector with male terminals
- Protection Class: IP 6K9K and IP 6K7 according to DIN 40 050-9
- Connector Detail: Yazaki (Code A) shown in Figure 6.

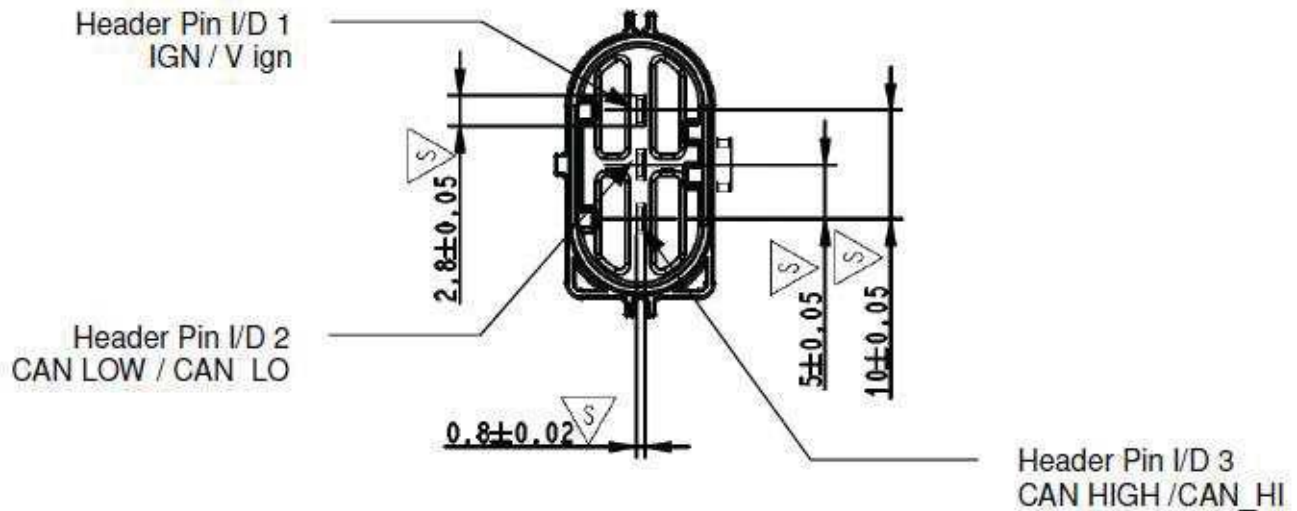


Figure 6: Signal Connector

## Power Cabling

ZF recommended min 12mm<sup>2</sup> cable for the power connections. Any lower is at customer risk. It is recommended that the ground cable is routed back completely to the battery to improve EMC radiation. If it is connected via the chassis then care should be taken to ensure the eyelet is waterproof, as the EPHS may “breathe” through the harness.

## Fuse

The BF1 100Amp (ISO Type SF30) should be used, or equivalent at customers risk.