GENERAL PRECAUTION IN USING THE F.D AUTO METER

【1】There are various types of vehicle electrical meter structures, including the cross-coil type and bimetallic type.
   We offer cross-coil type electrical meters.

【2】Mechanical water temperature gauges, oil temperature gauges and oil pressure gauges vary in structure; there are Bourdon–tube, diaphragm, and various other types.
   We offer Bourdon–tube gauges.

【3】All mechanical meters and ammeters can be used regardless of the source voltage of 12V or 24V.
   Unless otherwise specified, a 12V dash bulb is provided as a standard illumination lamp.

【4】Our ammeters are not suited under situations where current more than 40A flows continuously.
   Use the following as an ammeter selection guide.

   Full-scale value : ±30A  ・・・・・ Continuously usable over the ±30A full-scale range.
   Full-scale value : ±50A  ・・・・・ Usable for up to 30 minutes over the ±50A full-scale range.
   Continuously usable if the current is not more than 40A.
   Full-scale value : ±60A  ・・・・・ Usable for up to 10 minutes over the ±60A full-scale range.
   Continuously usable if the current is not more than 40A.

【5】Our electrical water temperature gauges, oil temperature gauges, oil pressure gauges and fuel gauges must be used in combination with proper sender units of ours.
   Otherwise various accidents will occur.

【6】All casing diameter is 52mm φ.
■ AMPERE METER (W/Illumination)

(Method of Ground)
1. E52CB30A/50A: Provide ground wire particularly from the body of car, and connect the wire to the ground wire of rear case of the ammeter.
2. 52SL30A/50A/60A, E52SL60A: Provide ground wire particularly from the body of car, and connect (by soldering, etc.) the wire to the rear case of the ammeter.

Note:
1. Do not use in a circuit of starter.
2. To avoid installation at strong Magnetic Field.
3. To surely tighten connection screws of terminals.

■ WATER AND OIL TEMP. GAUGES (ELECTRICAL TYPE)

Note: To be sure to ground surely gauge itself and sender unit.

■ OIL PRESSURE GAUGES (ELECTRICAL TYPE) — 2 TERMINAL SENDER UNIT

Note:
1. To be sure to ground surely gauge itself and sender unit.
2. When sender unit (F.D No. EO-2) is used, install it as the terminal screws of U and WL are vertical as shown in above figure.
3. To tighten hexagonal nut of sender unit by tool when the unit is installed on engine block.
## OIL PRESSURE GAUGES (ELECTRICAL TYPE) — 1 TERMINAL SENDER UNIT

![Diagram of oil pressure gauge circuit](image)

**Note:**
1. To be sure to ground surely gauge itself and sender unit.
2. To tighten hexagonal nut of sender unit by tool when the unit is installed on engine block.

## VOLT METER

![Diagram of volt meter circuit](image)

## FUEL GAUGE / TANK UNIT

![Diagram of fuel gauge circuit](image)

**Note:**
To be sure to ground gauge itself and tank unit.
**HOUR METER**

Note:
1. To be adopted for Minus Ground Type Car.
2. Indication error is within ± 1.5% for 24 hours.

**WATER AND OIL TEMP. GAUGES (MECHANICAL TYPE)**

Note:
To avoid use of the cable at sharp angle (within 50mmR).

**OIL PRESSURE GAUGE (MECHANICAL TYPE)**

Note:
1. The copper pipe and fitting attachments for oil pressure gauge is not sold by F.D.