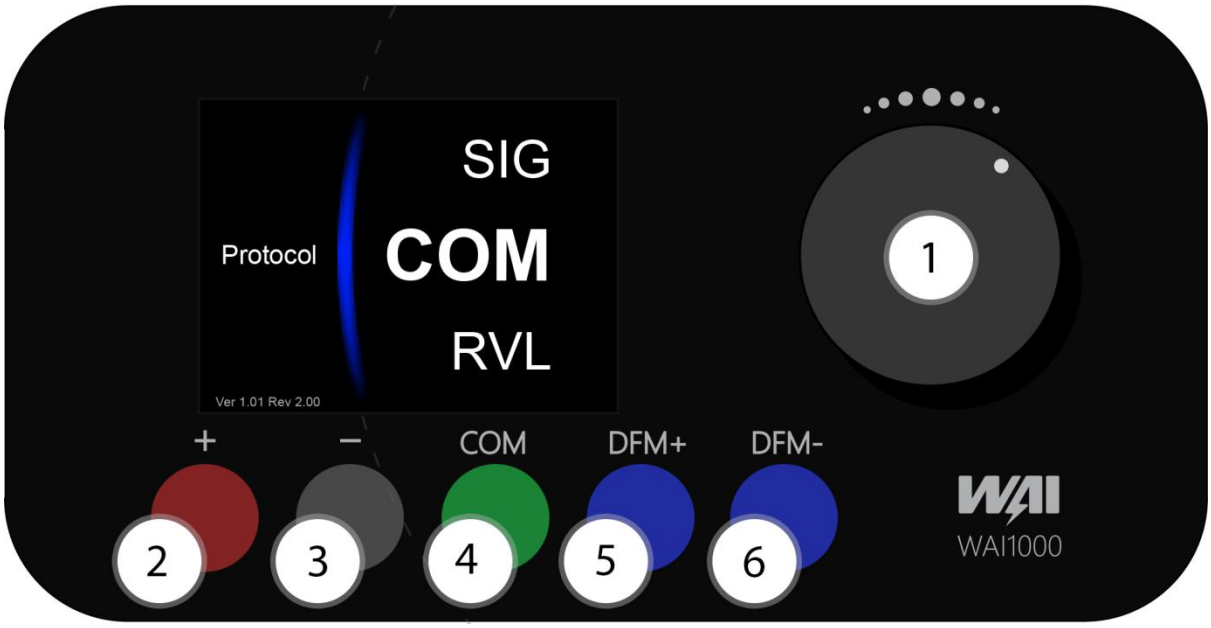
General device information

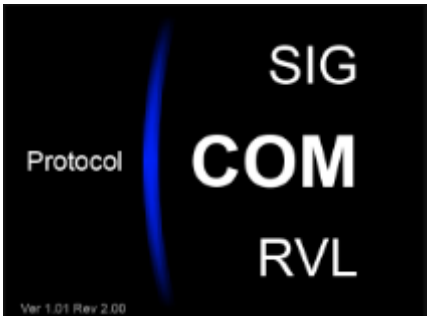


1- Control Knob used to operate device options
2- B+ terminal, power supply (use only 12V input)
3- B- terminal, power supply
4- COM terminal - control line for ECU protocols
5- DFM monitor positive field order
6- DFM monitor negative field order

Control device:

Turn knob clockwise or counter clockwise to switch between options (1,2). Confirm your selection by pushing the knob (3).

After powering device you will see the following options to choose from:



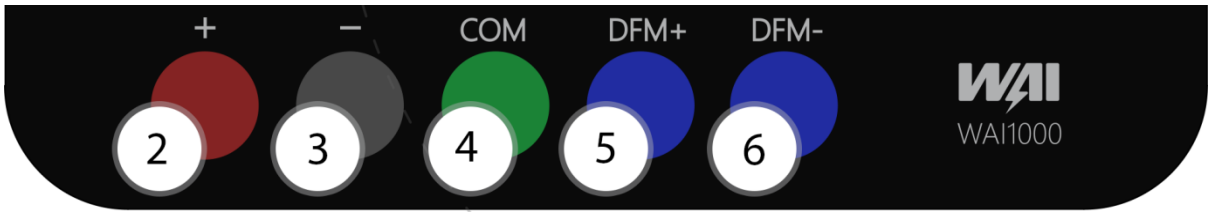
Protocol options screen:

- COM (LIN and BSS / BSD)
- C
- RLO
- PD
- L-RVC
- SIG
- DFM

Common applications:

COM - BMW, MERCEDES, VW GROUP
C - Honda, Hyundai, Mitsubishi
RLO - Toyota, Lexus
PD - Mazda
L-RVC - Chevrolet, Opel, GM
SIG - Ford, Volvo, Mazda
DFM - Various

Overly instruction for connecting WAI1000 with Alternator



Steps:

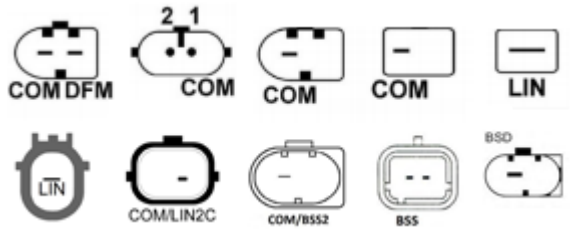
1- connect red clamp (2) to b+ terminal of alternator or to the + terminal of battery
2- connect black clamp (3) to ground (alternator housing) or minus terminal of battery
3- connect green wire (4) to the com/lin/bss/sig/rc/rlo/c/d terminal*
4- connect blue wire to the dfm+(5) or dfm-(6) / fr (5, 6)
*Note - green wire is always used to control alternator

After connecting WAI1000 to power source it will bring up the protocol menu.
Please choose proper protocol with knob and submit your option by pressing it.

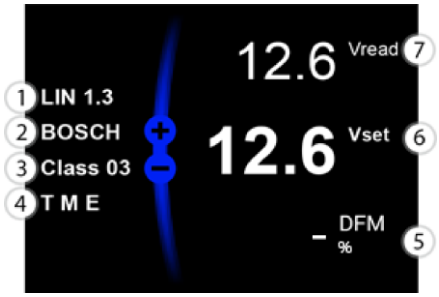
COM (LIN and BSS / BSD) Terminal

Digital regulators are automatically detected by WAI1000

Sample plugs:

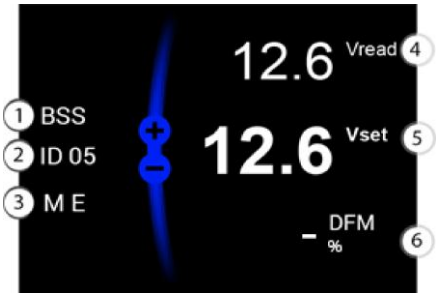


Main screen LIN



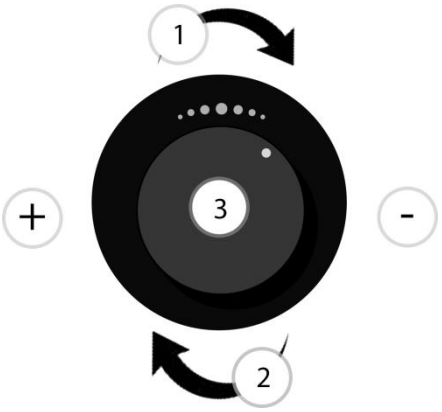
1 - Lin protocol version
2 - Vendor
3 - Class of regulator
4 - Errors (T - temperature, M - mechanical, E - electrical)
5 - DFM
6 - Setting of regulator Voltage
7 - Read Voltage value

Main screen BSS / BSD



1 - Protocol
2 - Regulator ID
3 - Errors (M - mechanical, E - electrical)
4 - Setting of regulator Voltage
6 - Read Voltage value
7 - DFM

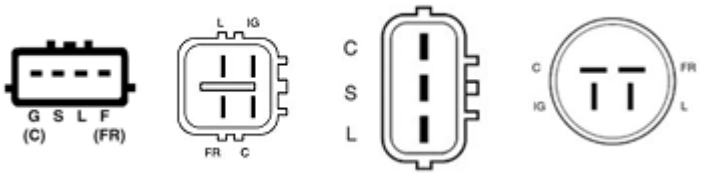
Testing



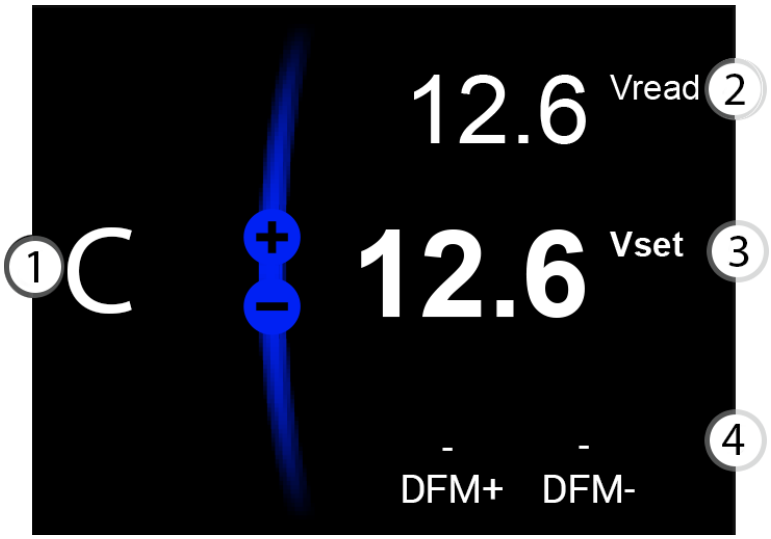
- Speed up alternator to about 1000 RPM
- Wait for WAI1000 to connect to regulator
- When information about regulator shows up you can control Voltage by rotating knob
- When changing Vset value Vread should decrease or increase accordingly
- If regulator supports DFM while Vset changes value also should change..
- Pressing knob makes WAI1000 go back to protocol selection screen

C Terminal

Sample plugs:



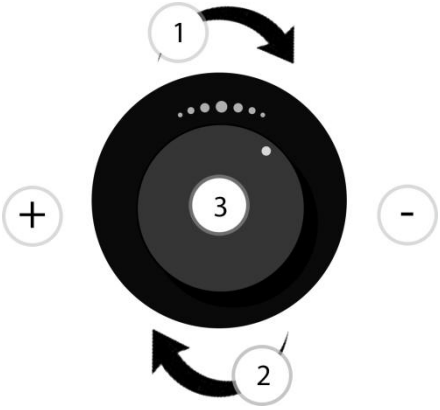
Main screen C



1 - Terminal
2 - Read Voltage value

3 - Setting of regulator Voltage
4 - DFM

Testing



There are two types of C terminal regulators (listed below). How to test Vset/read will be described in the next section.

- H/L set point set
- PWM

Testing H/L setpoint and PWM type C terminal regulators

H/L setpoint type: Dial knob clockwise for the High (H) set point until Vset = 15.8V. The Vread value will equal the upper set point of the regulator. (it will not match Vset.). Dial the knob counter clockwise for the Low (L) set point until the Vset = 11.4V. The Vread value will equal the lower set point of the regulator (it will not match Vset). Note: Dial settings between the High (H) and Low (L) will not be accurate.

PWM type: Dial knob clockwise/Counter clockwise to set Vset value. Vread should increase or decrease accordingly.

Note: Small difference between the voltage is acceptable. What is important is the appropriate reaction of the alternator – increasing or decreasing the output voltage according to the required voltage and DFM value.

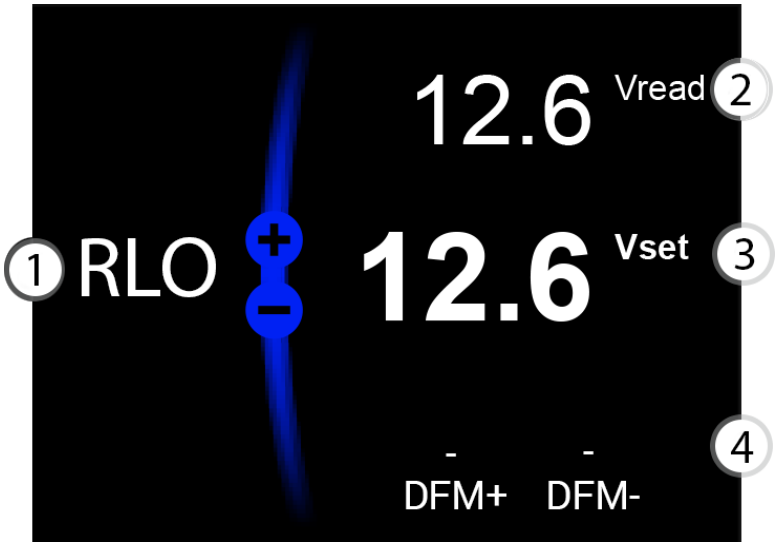
- If regulator supports DFM while Vset changes value also should change

-Pressing knob makes WAI1000 go back to protocol selection screen

RLO Terminal

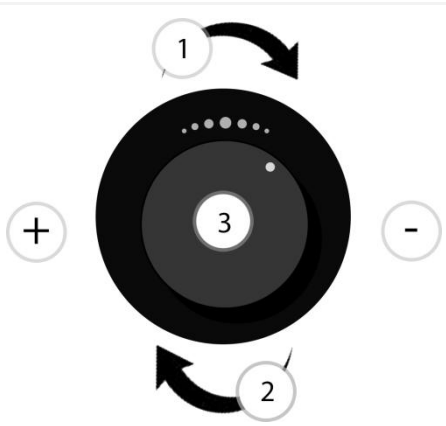
Sample plugs:

Main screen RLO



1 - Terminal
2 - Read Voltage value
3 - Setting of regulator Voltage
4 - DFM

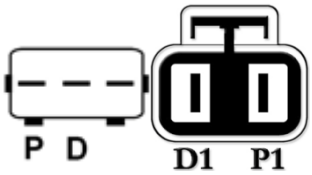
Testing



- Speed up alternator to about 1000 RPM
- Wait for WAI1000 to connect to regulator
- When information about regulator shows up you can control Voltage by rotating knob
- When changing Vset value Vread should decrease or increase accordingly
- If regulator supports DFM while Vset changes value also should change
- Pressing knob makes WAI1000 go back to protocol selection screen

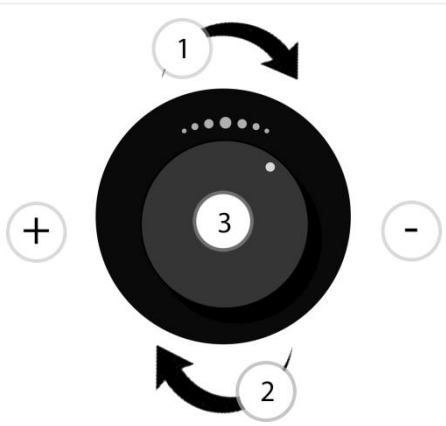
PD Terminal

Sample plugs:



Main screen RLO

Testing

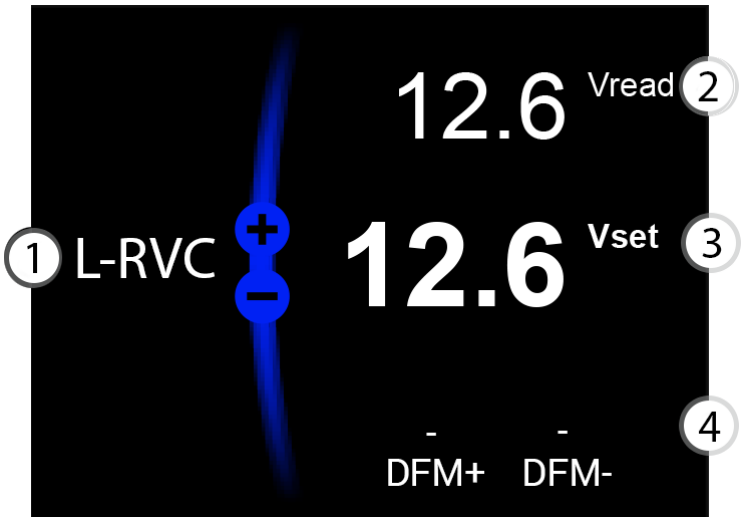


- Speed up alternator to about 1000 RPM
- Wait for WAI1000 to connect to regulator
- When information about regulator shows up you can control Voltage by rotating knob
- When changing Vset value Vread should decrease or increase accordingly
- Pressing knob makes WAI1000 go back to protocol selection screen

L-RVC Terminal

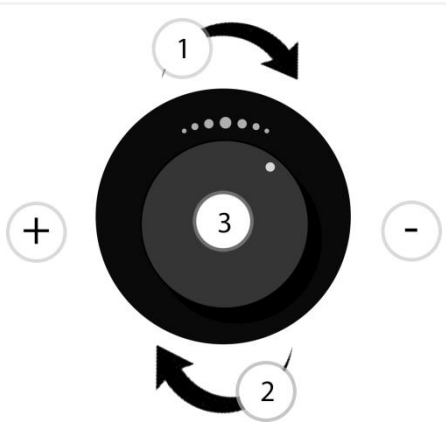
Sample plugs:

Main screen L-RVC



1 - Terminal
2 - Read Voltage value
3 - Setting of regulator Voltage
4 - DFM

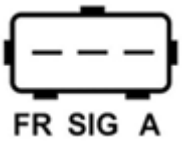
Testing

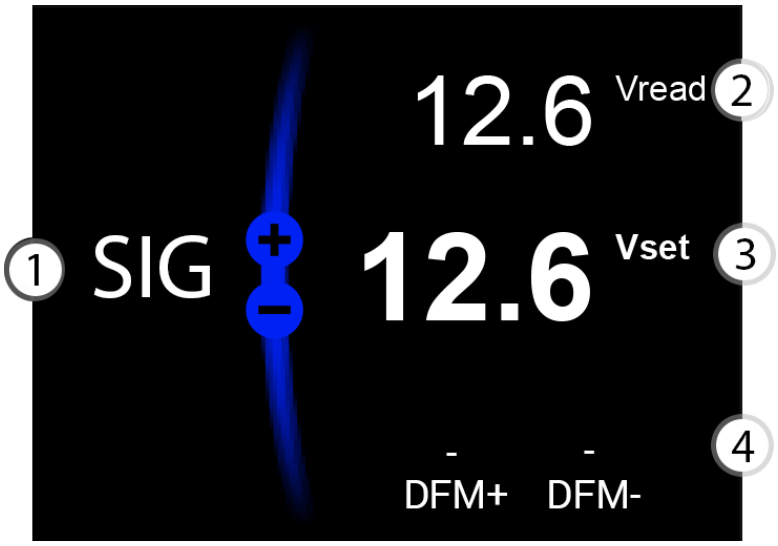


- Speed up alternator to about 1000 RPM
- Wait for WAI1000 to connect to regulator
- When information about regulator shows up you can control Voltage by rotating knob
- When changing Vset value Vread should decrease or increase accordingly
- If regulator supports DFM while Vset changes value also should change
- Pressing knob makes WAI1000 go back to protocol selection screen

SIG Terminal

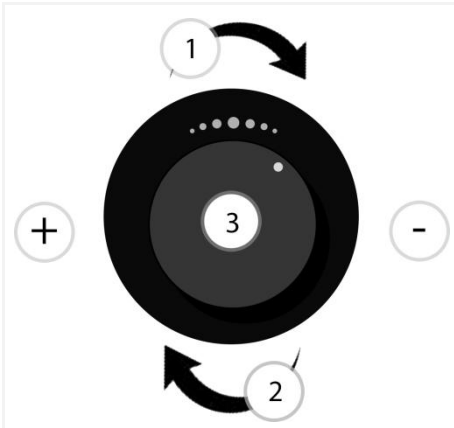
Sample plugs:





1 - Terminal
2 - Read Voltage value
3 - Setting of regulator Voltage
4 - DFM

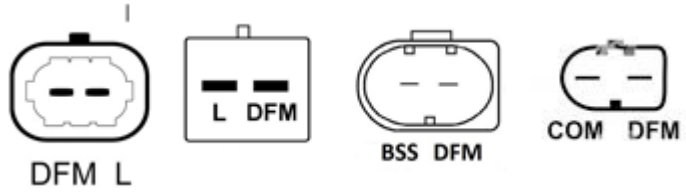
Testing



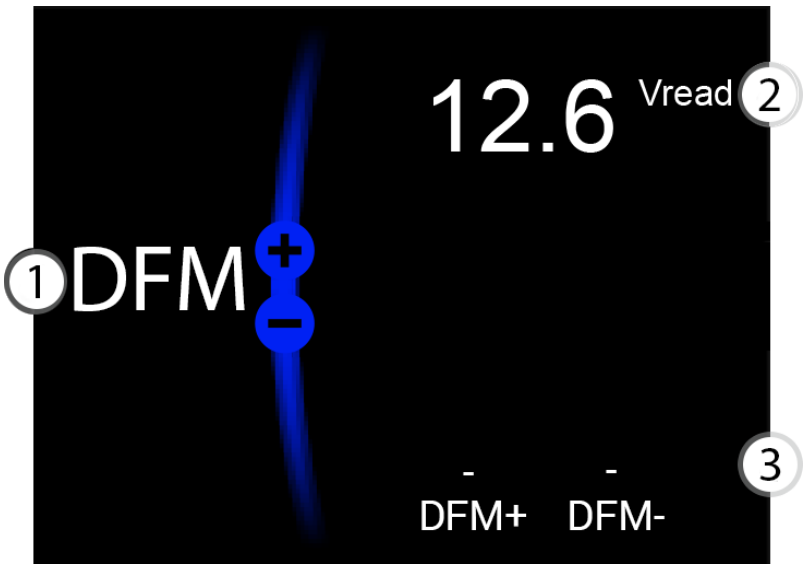
- Speed up alternator to about 1000 RPM
- Wait for WAI1000 to connect to regulator
- When information about regulator shows up you can control Voltage by rotating knob
- When changing Vset value Vread should decrease or increase accordingly
- If regulator supports DFM while Vset changes value also should change
- Pressing knob makes WAI1000 go back to protocol selection screen

DFM Monitor

Sample plugs:



Main screen RLO



1 - Terminal
2 - Read Voltage value
3 - DFM

DFM option enables dfm monitoring without controlling alternator