

# Advanced Alternator Regulators

## Pro Reg BW

### Maximum Alternator Rating:

With existing fitted regulator 350A alternator.  
With no fitted regulator 150A alternator

### Field Rating:

Positive Field Control = 8A maximum field current.  
Negative Field Control = 13A maximum field current.

**Waterproof IP66 (built to)** - as the unit is sealed the longevity of the regulator is significantly enhanced as the circuit board is not exposed to the elements.

### 8 LED information display

| Pro Reg BW Waterproof Advanced alternator regulator |                   |           |       |
|-----------------------------------------------------|-------------------|-----------|-------|
| Voltage DC                                          | Size L x W x D mm | Weight kg | SKU   |
| 12V                                                 | 120 x 80 x 45     | 0.4       | AR12W |



1 x Battery Temp Sensor



2 x Battery Temp Sensor

## Pro Reg D

### Maximum Alternator Rating:

With existing fitted regulator 600A alternator.  
With no fitted regulator 400A alternator

### Field Rating:

Positive Field Control = 25A maximum field current.  
Negative Field Control = 30A maximum field current.

### 12V and 24V operation

Fan cooled allows for rating to be the highest of all Sterling regulators.

| Pro Reg D Advanced alternator regulator |                   |           |       |
|-----------------------------------------|-------------------|-----------|-------|
| Voltage DC                              | Size L x W x D mm | Weight kg | SKU   |
| 12V & 24V                               | 180 x 90 x 55     | 0.5       | PDAR  |
| Remote control                          | 170 x 90 x 40     | 0.25      | PDARR |

## Pro Reg DW

### Maximum Alternator Rating:

With existing fitted regulator 400A alternator.  
With no fitted regulator 200A alternator

### Field Rating:

Positive Field Control = 12A maximum field current.  
Negative Field Control = 18A maximum field current.

### 12V and 24V operation

**Waterproof IP66 (built to)** - as the unit is sealed the longevity of the regulator is significantly enhanced as the circuit board is not exposed to the elements.

### 15 LED information panel

| Pro Reg DW Advanced alternator regulator |                   |           |       |
|------------------------------------------|-------------------|-----------|-------|
| Voltage DC                               | Size L x W x D mm | Weight kg | SKU   |
| 12V & 24V                                | 160 x 96 x 55     | 0.58      | PDARW |
| Remote control                           | 170 x 90 x 40     | 0.25      | PDARR |



2 x Battery Temp Sensor

## Pro Reg

|                                                                  | BW | D | DW |
|------------------------------------------------------------------|----|---|----|
| Digital software control with slow start                         | ●  | ● | ●  |
| Dynamic Progressive battery charging                             | ●  | ● | ●  |
| Can be used in parallel (recommended) or stand alone regulator   | ●  | ● | ●  |
| Programmable for different battery types                         | ●  | ● | ●  |
| Single unit fits 99% of alternators and all battery types        | ●  | ● | ●  |
| Charges to 4 step progressive constant current charging curves   | ●  | ● | ●  |
| Self diagnosing fault system                                     | ●  | ● | ●  |
| Totally isolates the advanced regulator in fault condition       | ●  | ● | ●  |
| Information 6 LED display one tri coloured                       | ●  | ● | ●  |
| Information 8 LED display (B only)                               | ●  | ● | ●  |
| Battery Temperature sensing                                      | ●  | ● | ●  |
| High battery temp trip                                           | ●  | ● | ●  |
| High battery voltage trip                                        | ●  | ● | ●  |
| High alternator voltage trip                                     | ●  | ● | ●  |
| De-sulphation ability on open lead acid batteries                | ●  | ● | ●  |
| In event of failure auto return to standard alternator regulator | ●  | ● | ●  |
| Can be used with or without the temperature sensor               | ●  | ● | ●  |
| Monitors for excessive neg voltage drop and trips                | ●  | ● | ●  |
| Protects batteries if temperature sensor open circuited          | ●  | ● | ●  |
| Protects batteries if split charge relay/diode fails open        | ●  | ● | ●  |
| Protects batteries if advanced reg fails closed                  | ●  | ● | ●  |
| Protects batteries if battery sense wire falls off or broken     | ●  | ● | ●  |
| 10 LED display                                                   | ●  | ● | ●  |
| 13 LED display                                                   | ●  | ● | ●  |
| 12 or 24V operation, selectable                                  | ●  | ● | ●  |
| Remote control option                                            | ●  | ● | ●  |
| Alternator temperature sensor and boost disengage                | ●  | ● | ●  |
| Unit thermostatically controlled fan cooling for max performance | ●  | ● | ●  |
| IP 66 waterproof & Ignition protected for W options              | ●  | ● | ●  |

### Advanced Regulator features explained in more depth:

#### Digital software control with slow start:

Digital control (software) means that very complex information and mathematical algorithms can be processed that would not be possible with an analogue hardware system. Unit ramps currents early - prevents alt slip.

**Dynamic progressive battery charging:** This is a term used to explain that the internal software calculates a different charging regime every time it is used as the battery state is never the same. Older systems simply used fixed trimmers.

**Can be used in parallel or as a stand alone regulator:** These regulators can be used as stand alone and in parallel with existing regulators. Good practice to leave original regulator in place for fail safe.

**Programmable for different battery types:** Multiple charging profiles for AGM, Gel and lead acid cells.

**Single unit fits 99% of alternators:** Manufactures have multiple, we have one.

**Charges to 4 step constant current progressive charging curves:**

#### Self diagnosing fault findings:

The regulators scan the system every two seconds and if all the parameters are not within our preset values then the unit will switch 'off' and signal a fault. This is to prevent adverse damage to your batteries.

#### Totally isolates the regulator in a fault condition:

Sterling's system physically break the field wire guaranteeing that the Advanced Regulator will stop working.

#### Information LED display:

#### Battery temperature sensing:

One battery temperature sensor is supplied with the unit. This will adjust the output charging curves with the ambient battery temperature.

#### High battery temperature trip:

Sterling's software will pick up the high temperature and in the worst case of a battery exceeding 50 deg C, will switch 'off' the regulator and display a warning.

#### High battery voltage trip:

In the event of the battery voltage going too high the unit will switch the regulator 'off' and display a warning.

#### High alternator voltage trip:

This is the most common trip used. In the event of poor wiring, incorrect installation, or any fault in the system, the alternator voltage will rise too high; the unit will trip out and display a warning.

#### De-sulphation ability on open lead acid batteries:

In order to prevent and even de-sulphate lead acid batteries a regular charge cycle exceeding 14.4V (x 2 for 24V) will remove the sulphate from a battery bank and so prolong its life expectancy.

#### In event of failure auto return to standard regulator:

Your standard regulator will automatically take over and allow the journey to continue but at a lower charge rate.

#### Can be used with or without temperature sensing:

Some people don't want to fit temperature sensors, the choice is yours, the software will pick up if you use it or not and control accordingly.

#### Protects batteries if temperature sensor open circuited:

A big problem with temperature sensors (why people don't like fitting them) is that they are on a battery. If someone changes the batteries and breaks or open circuits the temperature sensor wire, most Advanced Regulators will destroy your batteries by over charging them. Not so with a Sterling. In the event of a failure of a cable break the Sterling software will pick it up within 2 seconds and return to the default settings and carry on safely. It will also protect batteries if split charge relay/diode fails open circuit.

A common fault when fitting an Advanced Regulator is the old split charge diode or relay that is not up to handling the new performance, resulting in a regulator to fail. This will result in the destruction of the other battery bank, as the battery sense wire will be isolated from the alternator (but not with a Sterling).

#### Protects batteries if advanced regulator fails:

In the unlikely event of the Advanced Regulator failing then most regulators will fail closed and destroy all your batteries (Sterling software will prevent this from happening).

#### Alternator temp monitoring and disengagement:

This unit can monitor the alternator temperature and switch off the control unit in the event of high alternator temperature. The Advanced Regulator will automatically re-engage when the alternator cools down.

#### Thermostatically controlled fan cooling: Pro Reg D only

This is the only fan cooled regulator on the market (as per 2014) and offers the ability to connect this device to massive alternators if required. This unit can deliver field currents up to 20A+. This allows use on alternators way up to 600A plus or to work in extremely high ambient temperatures. We are unable to correctly advise on the maximum performance of this regulator against any large alternators as we have simply been unable to stretch it to its maximum with any alternators we have found to date to run with it.

**Warning: for large alternators (120A plus) where the existing regulator is non existent (Bulmar) then we recommend the Pro Reg D as this has fan cooling**

### Pro Reg Alternator max sizes

**Pro Reg B** up to 250A with standard reg / 130A stand alone  
**Pro Reg BW** up to 350A with standard reg / 150A stand alone  
**Pro Reg DW** up to 450A with standard reg / 150A stand alone  
**Pro Reg D** up to 600A with standard reg / 400A stand alone