



FXH



## FXH Series

VALVE REGULATED LEAD-ACID BATTERIES

FXH

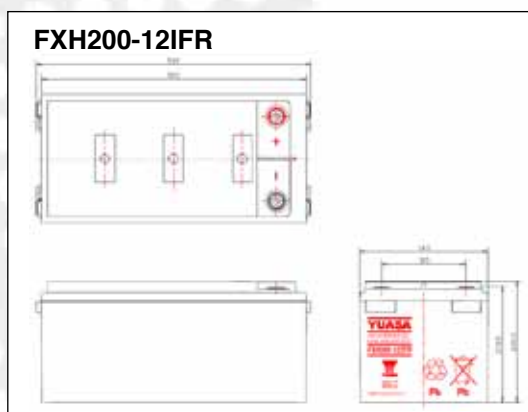
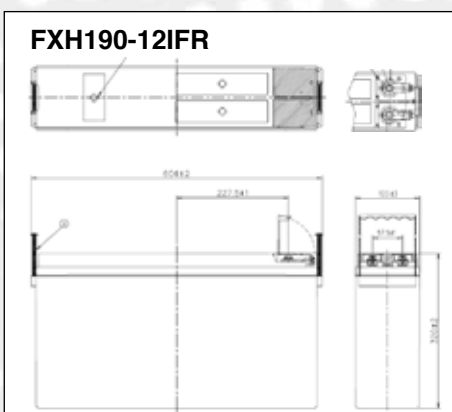
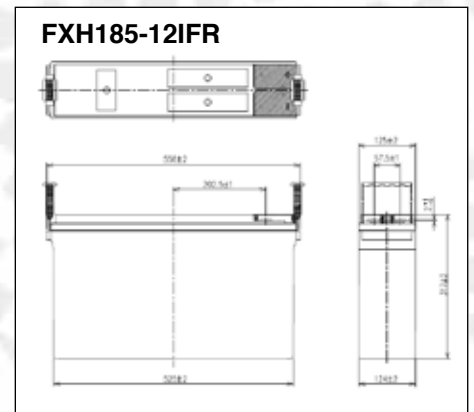
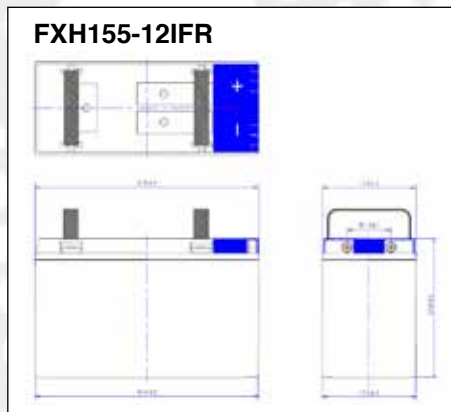
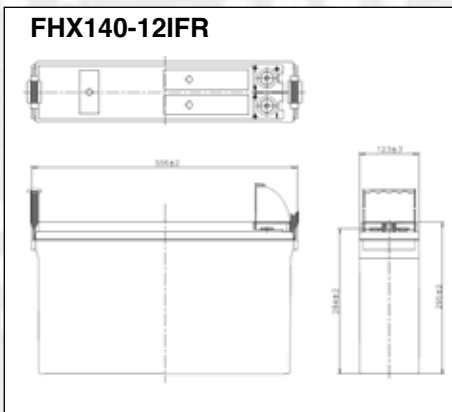
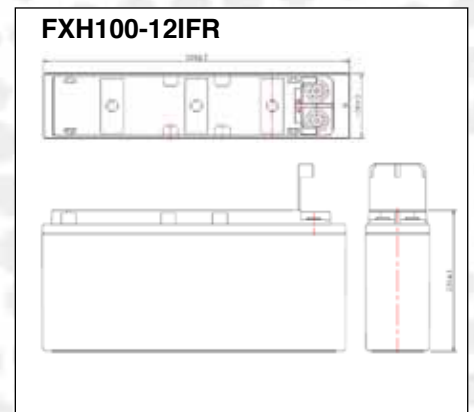
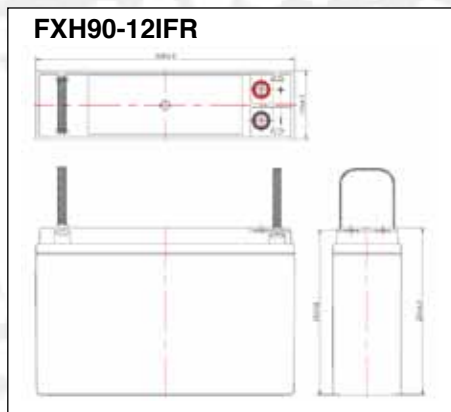
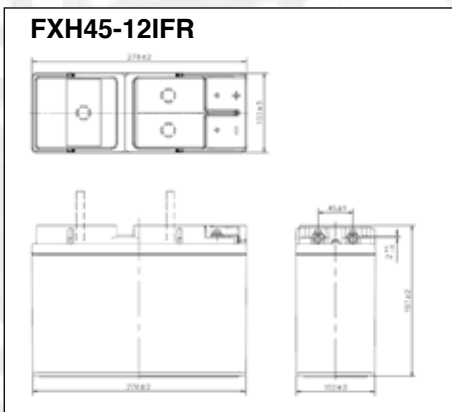
# FXH VALVE REGULATED LEAD-ACID BATTERIES (VRLA)

The FXH range of batteries for standby power applications, including telecommunications and UPS. The front terminal design allows for rapid installation and easy maintenance. With high performance and long design life, this front terminal range of batteries is an excellent choice for all critical standby applications.

## FEATURES

- Up to 12 year design life at 20°C in standby applications.
- Front terminal connection for ease of installation and maintenance.
- Electrolyte suspension A.G.M. technology assures no free electrolyte.
- High gas recombination efficiency.
- Case material ABS flame retardant UL94:V0.
- IEC60896-2 compliant.

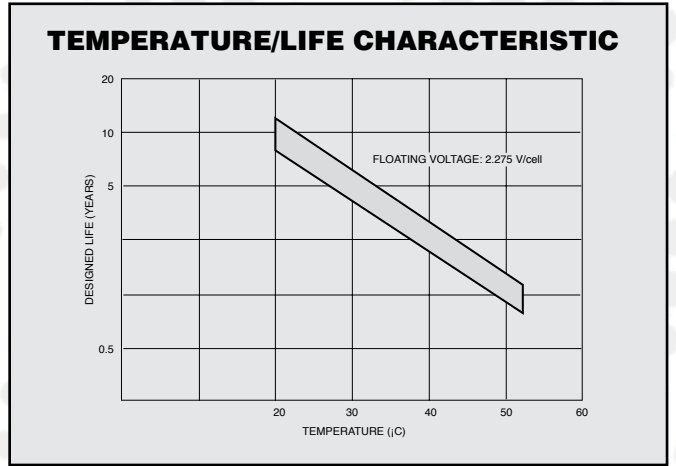
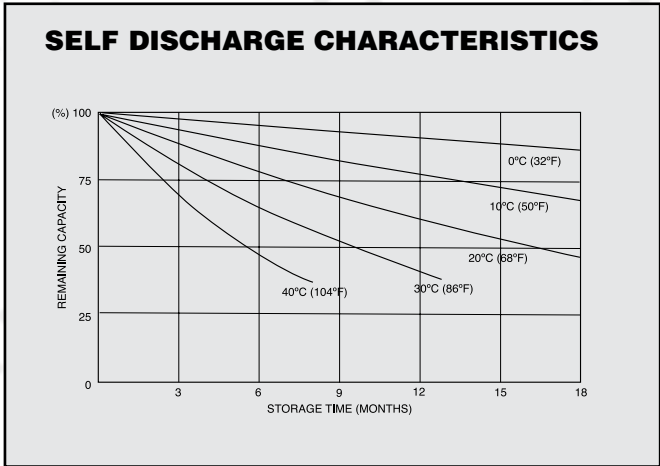
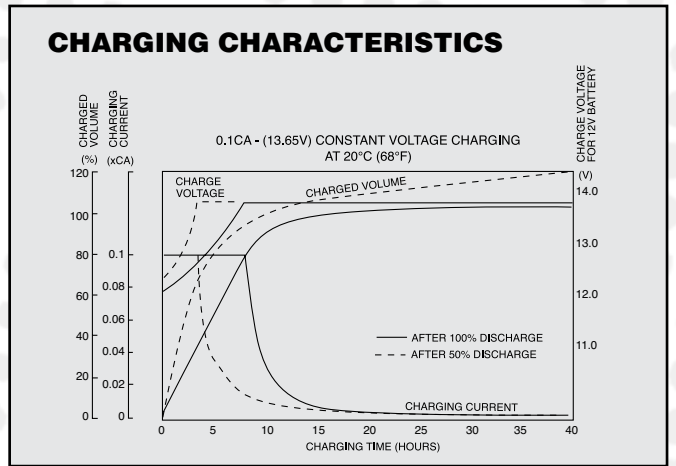
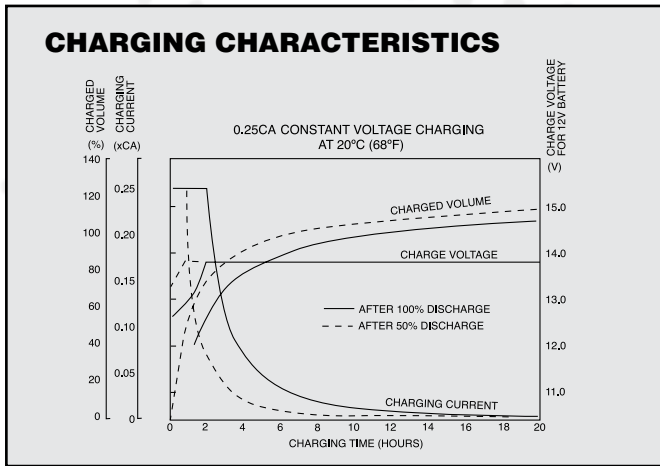
## Layouts



# General Specifications

| Specifications   | FXH45-12IFR   | FXH90-12IFR   | FXH100-12IFR  | FXH140-12IFR  | FXH155-12IFR  | FXH185-12IFR  | FXH190-12IFR  | FXH200-12IFR  |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Nominal voltage (V)  | 12            | 12            | 12            | 12            | 12            | 12            | 12            | 12            |
| 20-hr rate Capacity to 1.80VPC at 20°C (Ah)  | 46.40         | 96.80         | 101.20        | 164.60        | 165.60        | 196.00        | 210.00        | 234.80        |
| 10-hr rate Capacity to 1.8VPC at 20°C (Ah)   | 44.60         | 89.80         | 98.40         | 154.00        | 155.00        | 187.00        | 200.00        | 229.00        |
| <b>Dimensions / mm</b>   |               |               |               |               |               |               |               |               |
| Length (mm)  | 278 (±2)      | 395 (±3)      | 508 (±3)      | 556 (±3)      | 415 (±2)      | 556 (±3)      | 604 (±3)      | 520 (±3)      |
| Width (mm)   | 103 (±3)      | 105 (±3)      | 106 (±3)      | 123 (±3)      | 174 (±3)      | 125 (±3)      | 123 (±3)      | 243 (±3)      |
| Height (mm)  | 197 (±2)      | 255 (±3)      | 236 (±3)      | 295 (±3)      | 258 (±2)      | 317 (±3)      | 320 (±3)      | 203 (±3)      |
| Mass (typical) Kg  | 15.00         | 30.00         | 34.90         | 51.00         | 51.00         | 60.70         | 67.00         | 70.60         |
| <b>Battery Terminal Type</b>   |               |               |               |               |               |               |               |               |
| Female threaded terminal   | M6            | M8            | M6            | M8            | M6            | M8            | M8            | M8            |
| Torque (Nm)  | 3.9-5.4       | 9.0-11.9      | 3.9-5.4       | 9.0-11.9      | 3.9-5.4       | 9.0-11.9      | 9.0-11.9      | 9.0-11.9      |
| <b>90° Adaptor Terminal Type</b>   |               |               |               |               |               |               |               |               |
| Female threaded terminal   | M5            | M6            | M6            | M6            | N/A*          | M6            | M6            | N/A           |
| Torque (Nm)  | 2.0-3.0       | 3.9-5.4       | 3.9-5.4       | 3.9-5.4       | N/A           | 3.9-5.4       | 3.9-5.4       | N/A           |
| <b>Operating Temperature Range</b>   |               |               |               |               |               |               |               |               |
| Storage °C   | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    |
| Charge °C  | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    |
| Discharge °C   | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    | -15 to +45    |
| <b>Storage</b>   |               |               |               |               |               |               |               |               |
| Capacity loss per month at 20°C (approx)   | 3%            | 3%            | 3%            | 3%            | 3%            | 3%            | 3%            | 3%            |
| <b>Case Material</b>   |               |               |               |               |               |               |               |               |
| Flame retardant (FR)   | ABS (UL94:V0) | ABS (UL94:V0) | ABS (UL94:V0) | ABS (UL94:V0) | ABS (UL94:V0) | ABS (UL94:V0) | ABS (UL94:V0) | ABS (UL94:V0) |
| <b>Charge Voltage</b>  |               |               |               |               |               |               |               |               |
| Float charge voltage at 20°C (V)   | 13.65 (±1%)   | 13.65 (±1%)   | 13.65 (±1%)   | 13.65 (±1%)   | 13.65 (±1%)   | 13.65 (±1%)   | 13.65 (±1%)   | 13.65 (±1%)   |
|  | 2.275 (±1%)   | 2.275 (±1%)   | 2.275 (±1%)   | 2.275 (±1%)   | 2.275 (±1%)   | 2.275 (±1%)   | 2.275 (±1%)   | 2.275 (±1%)   |
| Float Charge voltage temperature correction factor for variations from the standard 20°C (mV/cell/°C)  | -3            | -3            | -3            | -3            | -3            | -3            | -3            | -3            |
| Cyclic (or Boost) charge at 20°C (V)   | 14.52 (±1%)   | 14.52 (±1%)   | 14.52 (±1%)   | 14.52 (±1%)   | 14.52 (±1%)   | 14.52 (±1%)   | 14.52 (±1%)   | 14.52 (±1%)   |
|  | 2.42 (±1%)    | 2.42 (±1%)    | 2.42 (±1%)    | 2.42 (±1%)    | 2.42 (±1%)    | 2.42 (±1%)    | 2.42 (±1%)    | 2.42 (±1%)    |
| Cyclic Charge voltage temperature correction factor for variations from the standard 20°C (mV/cell/°C) | -4            | -4            | -4            | -4            | -4            | -4            | -4            | -4            |
| <b>Charge Current</b>  |               |               |               |               |               |               |               |               |
| Float charge current limit (A)   | 4.64          | 9.68          | 10.12         | 16.46         | 16.56         | 19.60         | 21.00         | 23.48         |
| Cyclic (or Boost) charge current limit (A)   | 4.64          | 9.68          | 10.12         | 16.46         | 16.56         | 19.60         | 21.00         | 23.48         |
| <b>Maximum Discharge Current</b>   |               |               |               |               |               |               |               |               |
| 5 seconds  | 400           | 540           | 600           | 840           | 930           | 1000          | 1000          | 1000          |
| 1 minute   | 150           | 279           | 370           | 465           | 412           | 484           | 484           | 500           |
| <b>Impedance</b>   |               |               |               |               |               |               |               |               |
| Measured at 1 kHz (mΩ)   | 4.7           | 3.4           | 3.5           | 2.7           | 2.8           | 2.5           | 2.5           | 2.1           |
| <b>Design Life</b>   |               |               |               |               |               |               |               |               |
| Yuasa design life (at 20°C)  | 12            | 12            | 12            | 12            | 12            | 12            | 12            | 12            |
| EUROBAT Classification: Long Life  | 12+           | 12+           | 12+           | 12+           | 12+           | 12+           | 12+           | 12+           |

\*Standard battery terminal is at 90°



## Charging Methods (At 20°C)

Standby use: Float charging voltage 2.275vpc

## CAUTION

- Avoid short circuit.
- Do not charge in a sealed container.
- Service life and operational characteristics will be affected by temperature.
- AC Ripple reduces service life.

## WARNING!

FHX battery type must never be installed permanently suspended by their handles; they are not designed for this purpose.



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