## Genset Control for Single Unit Operation

**DESCRIPTION**

### I/Os

- **FlexRange™** - true RMS 3-phase generator and mains voltage, measuring inputs:
  - Rated 120 Vac (max. 150 Vac) and Rated 480 Vac (max. 600 Vac) in 1 unit
  - True rms 3-phase generator current/power
  - True rms 1-phase current input alternatively and freely configurable for:
    - Mains current
    - Ground current (ground fault protection)
  - 1 speed input (magnetic/switching)
  - up to 8 configurable discrete alarm inputs
  - **LogicsManager™** - up to 9 program relays
  - **FlexIn™** - 2 configurable analog inputs
  - **FlexCAN™** - CAN bus communication (32 participants, isolated)

### Protection

- **FlexApp™** Technology (ANSI #)
  - Generator / Engine: Battery voltage, overspeed (12), over-/undervoltage (59/27), over-/underfrequency (810/U), overload (32), reverse/reduced power (32R/F), unbalanced load (46), defective time-overcurrent (50/51), inverse time-overcurrent (IEC255), calculated + measured ground fault

### Features

- **FlexApp™** Technology (4 application modes)
- **DynamicsLCD™** - 128x64 pixel graphical interactive LC display with softkeys
- Start/stop logic for Diesel/Gas engines
- Engine pre-glow or purge control
- kWh meter, kwvarh meter
- Operating hours/start/maintenance counters
- Configurable trip levels/delays/alarm classes
- Push-buttons (softkeys) for direct control
- PC and/or front panel configurable
- Multi-level password protection
- Multi-lingual capability (10 languages in 1 unit)
- **FlexCAN™** communication (32 participants, isolated)
- **FlexApp™** Technology
- Flexible and multifunctional **DynamicsLCD™**
- AMF/loss of mains auto start/stop
- Complete engine, generator, and mains protection in one unit
- True rms voltage sensing with **FlexRange™**
- True rms current/power sensing
- kWh meter
- Counters for engine starts, operating hours, maintenance call
- Freely configurable discrete inputs
- Freely configurable analog **FlexIn™** inputs
- Freely programmable relay outputs with **LogicsManager™**
- PC and/or front panel configurable
- Multi-lingual capability (10 languages in 1 unit)
- **FlexCAN™** communication (32 participants, isolated)
- Modbus RTU Slave
- 6.5 to 40.0 Vdc power supply
- Flush-mounting
- CE marked
- UL/cUL Listed
- GL, LR Marine Approval

## APPLICATIONS

The 2nd Generation of genset controls is designed to provide a maximum of flexibility in a user friendly and intuitive design with a large graphical display for various applications. This controller is one of a series of new and powerful genset controls (easyGen). This trend-setting technology offers a maximum of flexibility for each user. New technologies included are:

- **FlexApp™** - This intelligent and flexible feature provides the tools to easily configure for multiple applications. The user can configure the easyGen-1000 Series for use as:
  - Measuring transducer/engine control [0-CB-Mode [0]] for start/stop and measuring conversion
  - 1-breaker-control [GCB open, 1o]
    - above plus engine/generator protection
  - 1-breaker-control [GCB open/closed, 1oc]
    - above plus stand-by power applications
  - 2-breaker-control [GCB/MCB open/closed, 2oc]
    - above plus AMP, and open transition applications
- **DynamicsLCD™** - The graphical LCD provides softkeys that vary depending on application and operation.
- **FlexIn™** - The two analog inputs can be freely configured (adaptable for each type of sensor) by the user as:
  - VDO (0 to 180Ohm [0 to 5bar; 0 to 10bar]; 0 to 380Ohm [40 to 120°C/50 to 150°C]; 0 to 180 Ohm [0 to 100% level]; isolated (2-pole) and non-isolated (1-pole) ground senders only)
  - Resitive input (Pt100 / linear 2point / user-defined 9point)
  - 0/4 to 20 mA (linear 2point / user-defined 9point)
- **FlexCAN™** - Flexible isolated CAN bus for multiple use. Selectable during configuration: CANopen, or CAN (CAL); coupling of easyYlite remote annunciator; coupling of 3rd party expansion cards supported (request detailed information from our sales department).
  - J1939 protocol for ECU coupling and alarm management, remote start/stop with ECU possible (Scania, Volvo, Deutz, mtu).
  - **LogicsManager™** - A large number of measuring values, inputs, internal states or constant values can be combined logically to operate a relay contact or an internal function.

## Technology (4 application modes)

- **FlexApp™** Technology (4 application modes)
- **DynamicsLCD™** - 128x64 pixel graphical interactive LC display with softkeys
  - Start/stop logic for Diesel/Gas engines
  - Engine pre-glow or purge control
  - kWh meter, kwvarh meter
  - Operating hours/start/maintenance counters
  - Configurable trip levels/delays/alarm classes
  - Push-buttons (softkeys) for direct control
  - PC and/or front panel configurable
  - Multi-level password protection
  - Multi-lingual capability (10 languages in 1 unit configurable: English, German, French, Italian, Spanish, Portuguese, Russian, Turkish, Chinese, Japanese)
  - Event recorder (300 events, FIFO) with real time clock (battery backed; min. 6 years)
  - Modem connectivity with DPC
  - easyYlite annunciator support via CAN bus
  - Remote control via interface / digital signals

## Differentiation

- Current input as .5/5 A (standard) or .1/1 A

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**Product Specification**

37180J
SPECIFICATIONS

Power supply .................................................... 12/24 Vdc (6.5 to 40.0 Vdc)
Intrinsic consumption .................................... max. 15 W
Ambient temperature (operation) ............... -20 to 70 °C / -4 to 158 °F
Ambient temperature (storage) ................. -30 to 80 °C / -22 to 176 °F
Ambient humidity ................................... 95 %, non-condensing
Voltage .................................................. (both ranges within one unit on different terminals, V/Hz)
100 Vac [1] .............................................. 69/120 Vac
   Max. value (Vmax) .................................. 86/150 Vac
   Rated (Vrated) ...................................... 69/120 Vac
   Rated surge volt. (Vsurge) ....................... 2.5 kV
and 400 Vac [4] ........................................ 277/480 Vac
   Max. value (Vmax) .................................. 346/600 Vac
   Rated (Vrated) ...................................... 277/480 Vac
   Rated surge volt. (Vsurge) ....................... 4.0 kV
Accuracy ............................................ Class 1
Measurable alternator windings .................. 3p-3w, 3p-4w, 1p-2w, 1p-3w
Setting range ........................................ primary 50 to 650,000 Vac
Linear measuring range .............................. 1.25×Vrated
Measuring frequency ................................ 50/60 Hz (40 to 70 Hz)
Input resistance per path ............................. [1] 0.498 MΩ, [5] 2.0 MΩ
Max. power consumption per path ............... < 0.15 W
Current .............................................. (Irated)
   Rated (Irated) ................................... [1] /1 A or [5] /0.5 A
   Linear measuring range ......................... Igen = 3.0×Irated, Imains = 1.5×Irated
   Burden .............................................. < 0.15 VA

Discrete inputs ........................................... isolated
Input range ............................................. 12/24 Vdc (6.5 to 40.0 Vdc)
Input resistance ....................................... approx. 6.7 kΩ
Relay outputs .......................................... isolated
Contact material ........................................ AgCdO
Load (GP) ............................................. 2.00 Adc@24 Vdc / 0.36 Adc@125 Vdc / 0.18 Adc@250 Vdc
Pilot duty (PD) ........................................ 1.00 Adc@24 Vdc / 0.22 Adc@125 Vdc / 0.10 Adc@250 Vdc
Analog input ......................................... freely scaleable
Type .................................................. variable
Resolution ........................................... 10 Bit
Housing ............................................ Flush Type easYpack
Dimensions .......................................... 219×171×61 mm
Front cutout .......................................... Flush 186 [+1.1]×138 [+1.0] mm
Connection ........................................... screwplug terminals 2.5 mm²
Front .................................................. insulating surface
Protection system .................................... with professional installation
   Front .................................. IP54 (with clamp fastening)
   Front .................................. IP65 (with screw fastening)
   Back .................................... IP20
Weight ................................................ approx. 800 g
Disturbance test (CE) ......................... tested according to applicable EN guidelines
Listings ............................................. UL/cUL listed
Marine Approvals ................................... GL, LR, others upon request

DIMENSIONS

PART NUMBERS AND ORDER CODES

<table>
<thead>
<tr>
<th>Model Mounting</th>
<th>Rated PT secondary</th>
<th>Rated CT secondary</th>
<th>Part Number (P/N)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500 FlexRange®</td>
<td>69/120 Vac</td>
<td>.5 A</td>
<td>8440-1809</td>
<td>EASYGEN-1500-55B</td>
</tr>
<tr>
<td>and</td>
<td>277/480 Vac</td>
<td>.1 A</td>
<td>8440-1810</td>
<td>EASYGEN-1500-51B</td>
</tr>
</tbody>
</table>
The Mode of the control can be configured alternatively as an:

- Measuring transducer/engine control (CCB) (1a) - 1-CB-control (CCB open)
- Measuring transducer/engine control (CCB) (1b) - 1-CB-control (CCB closed)
- Measuring transducer/engine control (CCB) (2a) - 2-CB-control (CCB/B/CB open/close)

Depending on the setting you have different I/Os available, respectively the control can operate the breakers for protection closing or not.

- Measuring transducer/engine control (CCB) (0) - Measuring transducer/engine control (CCB) (1a) - 1-CB-control (CCB open/close)
- Measuring transducer/engine control (CCB) (1b) - 1-CB-control (CCB open)
- Measuring transducer/engine control (CCB) (2a) - 2-CB-control (CCB/B/CB open/close)

Model easYgen-1500:
- P/N 8440-1751 = ../1 A
- P/N 8440-1750 = ../5 A

The socket for the PC configuration is situated on the back of the item. This is where the DPC has to be plugged.

Subject to technical modifications.
<table>
<thead>
<tr>
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<th>easYgen-1500</th>
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<tr>
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<tr>
<td>Generator voltage (3phase/4-wire)</td>
<td>rated 69/120 Vac</td>
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<tr>
<td>- true rms</td>
<td>max. 86/150 Vac</td>
</tr>
<tr>
<td>- FlexRange™</td>
<td>rated 277/480 Vac</td>
</tr>
<tr>
<td>Mains voltage (3phase/4-wire)</td>
<td>rated 69/120 Vac</td>
</tr>
<tr>
<td>- true rms</td>
<td>max. 86/150 Vac</td>
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<tr>
<td>- FlexRange™</td>
<td>rated 277/480 Vac</td>
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<tr>
<td>Control</td>
<td></td>
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<tr>
<td>Breaker control logic</td>
<td>FlexApp™</td>
</tr>
<tr>
<td>Number of controlled power circuit breakers</td>
<td></td>
</tr>
<tr>
<td>can be user configured depending on application needs out of 4 Modes</td>
<td>GCB open/close™</td>
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<td>Isolated single-unit operation</td>
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<td>AMF (auto mains failure operation)</td>
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<td>Stand-by operation</td>
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<td>Open transition (break-before-make)</td>
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<td>ATS (automatic transfer switching)</td>
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<td>Accessories</td>
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<td>Softkeys (advanced LC display)</td>
<td>DynamicsLCD™</td>
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<tr>
<td>Generator: voltage/frequency</td>
<td>59/27/810/81U</td>
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<td>Generator: overload, reverse/reduced power</td>
<td>32/32R/32F</td>
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<td>Generator: unbalanced load</td>
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<td>Generator: definite time-overcurrent</td>
<td>50/51</td>
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<td>Generator: inverse time-overcurrent</td>
<td>IEC255</td>
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<td>Generator: ground fault</td>
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<td>Relay outputs (configurable)</td>
<td>LogicsManager™</td>
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<td>Analog inputs #7 (configurable)</td>
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<td>LR, GL Marine Approval</td>
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<tr>
<td>CE Marked</td>
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</tbody>
</table>

#1 Selection during order, both /5 A (standard) or both /1 A (alternatively), the mains are measured and may be displayed, but they will not be evaluated.
#2 dedicated to a fixed relay
#4 external Woodward DPC cable required.
#5 calculated + measured ground current
#6 possible (not dedicated to a fixed relay)
#7 selectable during configuration
#8 freely selectable during configuration
#9 external electrical isolation required (e.g. DPC cable P/N 5417-557)
#10 contact your sales rep to find out whether your desired unit has the required approval.

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**Example of the LogicsManager**

**Diagram showing the LogicsManager setup**

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