



## APPLICATIONS

The 2<sup>nd</sup> 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/close, {1oc}] above plus stand-by power applications
- 2-breaker-control [GCB/MCB open/close, {2oc}] above plus AMF, 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)
- Resistive 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 easYlite remote annunciator; coupling of 3<sup>rd</sup> 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.

## Genset Control for Single Unit Operation

### DESCRIPTION

#### I/Os

- **FlexRange™** - true RMS 3phase generator and mains voltage, measuring inputs:
  - Rated 120 Vac (max. 150 Vac) **and**
  - Rated 480 Vac (max. 600 Vac) **in 1 unit**
- True rms 3phase generator current/power
- True rms 1phase 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 (ANSI #)

**Generator / Engine:** Battery voltage, overspeed (12), over-/undervoltage (59/27), over-/underfrequency (81O/U), overload (32), reverse/reduced power (32R/F), unbalanced load (46), definite time-overcur. (50/51), inverse time-overcurrent (IEC255), calculated + measured ground fault

#### Features

- **FlexApp™** Technology (4 application modes)
- **DynamicsLCD™** - 128×64 pixel graphical interactive LC display with softkeys
- Start/stop logic for Diesel/Gas engines
- Engine pre-glow or purge control
- kWh meter, kvarh 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
- easYlite annunciator support via CAN bus
- Remote control via interface / digital signals

#### Differentiation

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

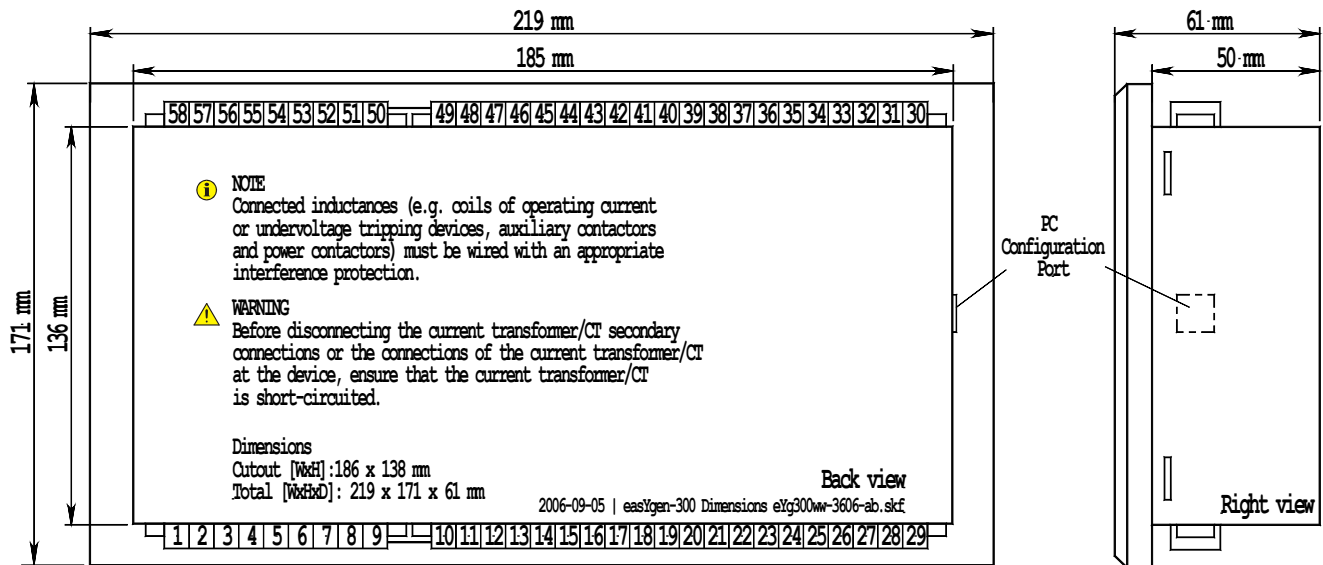
- **FlexApp™** Technology
- Flexible and multifunctional **DynamicsLCD™**
- AMF/loss of mains auto start/stop
- Complete engine, generator, and mains protection in one unit
- True rms voltage sensing with **FlexRange™**
- True rms current/power sensing
- kWh meter
- Counters for engine starts, operating 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

# 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,  $\Delta/\Delta$ )  
     100 Vac [1] Rated ( $V_{rated}$ ) ..... 69/120 Vac  
         Max. value ( $V_{max}$ ) ..... 86/150 Vac  
         Rated ( $V_{phase-ground}$ ) ..... 150 Vac  
     Rated surge volt. ( $V_{surge}$ ) ..... 2.5 kV  
**and** 400 Vac [4] Rated ( $V_{rated}$ ) ..... 277/480 Vac  
         Max. value ( $V_{max}$ ) ..... 346/600 Vac  
         Rated ( $V_{phase-ground}$ ) ..... 300 Vac  
     Rated surge volt. ( $V_{surge}$ ) ..... 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 $\times V_{rated}$   
 Measuring frequency ..... 50/60 Hz (40 to 70 Hz)  
 Input resistance per path ..... [1] 0.498 M $\Omega$ , [5] 2.0 M $\Omega$   
 Max. power consumption per path ..... < 0.15 W  
**Current** Rated ( $I_{rated}$ ) ..... [1] ..1 A or [5] ..15 A  
 Linear measuring range .....  $I_{gen} = 3.0 \times I_{rated}$ ,  $I_{mains} = 1.5 \times I_{rated}$   
 Burden ..... < 0.15 VA  
 Rated short-time current (1 s) ..... [1] 50 $\times I_{rated}$ , [5] 10 $\times I_{rated}$

**Discrete inputs** ..... isolated  
 Input range ..... 12/24 Vdc (6.5 to 40.0 Vdc)  
 Input resistance ..... approx. 6.7 k $\Omega$   
**Relay outputs** ..... isolated  
 Contact material ..... AgCdO  
 Load (GP) ..... 2.00 Aac@250 Vac  
         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 Flush ..... 219 $\times$ 171 $\times$ 61 mm  
 Front cutout Flush ..... 186 [+1.1] $\times$ 138 [+1.0] mm  
 Connection ..... screw/plug terminals 2.5 mm<sup>2</sup>  
 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

Model Mounting	Rated PT secondary <i>FlexRange™</i>	Rated CT secondary	Part Number (P/N)	Description
1500	69/120 Vac	..15 A	8440-1809	EASYGEN-1500-55B
	<b>and</b> 277/480 Vac	..1 A	8440-1810	EASYGEN-1500-51B



# FEATURES OVERVIEW

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Configured as ...		easYgen-1500			
		{0}	{1o}	{1oc}	{2oc}
		No CB control	1 CB control (GCB open)	1 CB control (GCB open / close)	2 CB control (GCB / MCB open / close)
<b>Measuring</b>					
Generator voltage (3phase/4-wire)	rated 69/120 Vac	✓	✓	✓	✓
- true rms	max. 86/150 Vac	✓	✓	✓	✓
- FlexRange™	rated 277/480 Vac	✓	✓	✓	✓
	max. 346/600 Vac	✓	✓	✓	✓
Generator current #1 (3phase/4-wire, true RMS)	..1 A or ..1/5 A	✓	✓	✓	✓
Mains voltage (3phase/4-wire)	rated 69/120 Vac	(✓)#2	(✓)#2	(✓)#2	✓
- true rms	max. 86/150 Vac	(✓)#2	(✓)#2	(✓)#2	✓
- FlexRange™	rated 277/480 Vac	(✓)#2	(✓)#2	(✓)#2	✓
	max. 346/600 Vac	(✓)#2	(✓)#2	(✓)#2	✓
Mains current #1 (1phase/2-wire, true RMS)	..1 A or ..1/5 A	(✓)#2	(✓)#2	(✓)#2	✓
<b>Control</b>					
Breaker control logic	FlexApp™	0	0	1	2
	GCB open#3		✓	✓	✓
Number of controlled power circuit breakers can be user configured depending on application needs out of 4 Modes	GCB open/close#3			✓	✓
	GCB/ MCB open/close#3				✓
Isolated single-unit operation				✓	✓
AMF (auto mains failure operation)					✓
Stand-by operation					✓
Open transition (break-before-make)					✓
ATS (automatic transfer switching)					✓
<b>Accessories</b>					
Softkeys (advanced LC display)	DynamicsLCD™	✓	✓	✓	✓
Start/stop logic for Diesel/Gas engines		✓	✓	✓	✓
kWh meter, kvarh meter		✓	✓	✓	✓
Operating hours/start/maintenance counter		✓	✓	✓	✓
Configuration via PC #4		✓	✓	✓	✓
Event recorder with real time clock (battery backup)		300	300	300	300
Flush-mounting		✓	✓	✓	✓
<b>Protection</b> ANSI#					
Generator: voltage/frequency	59/27/810/81U	(✓)#6	✓	✓	✓
Generator: overload, reverse/reduced power	32/32R/32F	(✓)#6	✓	✓	✓
Generator: unbalanced load	46	(✓)#6	✓	✓	✓
Generator: definite time-overcurrent	50/51	(✓)#6	✓	✓	✓
Generator: inverse time-overcurrent	IEC255	(✓)#6	✓	✓	✓
Generator: ground fault #5		(✓)#6	✓	✓	✓
<b>I/Os</b>					
Speed input (magnetic/switching; Pickup)		✓	✓	✓	✓
Discrete alarm inputs (configurable)		8	8	7	5
Relay outputs (configurable)	LogicsManager™	8	7	6	4
Analog inputs #7 (configurable)	FlexIn™	2	2	2	2
CAN bus communication #8	FlexCAN™	✓	✓	✓	✓
RS-232 Modbus RTU Slave #9		✓	✓	✓	✓
<b>Listings/Approvals #10</b>					
UL/cUL Listed		✓	✓	✓	✓
LR, GL Marine Approval		✓	✓	✓	✓
CE Marked		✓	✓	✓	✓

- #1 Selection during order; both ..1/5 A (standard) or both ..1 A (alternatively);
- #2 the mains are measured and may be displayed, but they will not be evaluated
- #3 dedicated to a fixed relay
- #4 external Woodward DPC cable required.  
USB connector: P/N 5417-1251 / RS-232 connector: P/N 5417-557 or CAN connection by LeoPC1 software
- #5 calculated + measured ground current
- #6 possible (not dedicated to a fixed relay)
- #7 selectable during configuration  
VDO (0 to 180 Ohm, 0 to 5 bar, 2-pole)  
VDO (0 to 180 Ohm, 0 to 10 bar, 2-pole)  
VDO (0 to 380 Ohm, 40 to 120°C, 2-pole)  
VDO (0 to 380 Ohm, 50 to 150°C, 2-pole)  
Pt100  
Resistive input (linear 2pt. or free chart 9pt.)  
20 mA (0/4 to 20 mA, freely configurable)
- #8 freely selectable during configuration  
CANopen, CAN (CAL), or 1939; request info
- #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

### Example of the LogicsManager

