

## easYgen-400 / easYgen-600 / easYgen-800



## Genset Start/Stop Control

**Do you package gensets, build switchgear or integrate systems?** With several decades of experience in genset control technology, Woodward's easYgen family offers a one-stop-shop solution for all of your genset control needs. easYgen family genset controls cover the full range of generator system applications, ranging from simple functions, such as start/stop of a genset to complex ones, like synchronizing and power management of large fleet of gensets.

### DESCRIPTION

The Woodward easYgen-100 series is designed for a single-generator set used in isolated stand-by or prime power applications. The controllers include purpose-built algorithms and logic to start, stop, control, and protect the genset, and open/close circuit breakers. Equipped with state-of-the-art communication interfaces, Woodward's easYgen-100 Series of genset controllers provides exceptional versatility and value for OEM genset packagers.

The easYgen-100 Series is available in three versions:

- **easYgen-400** small start/stop controller contains a big liquid crystal display (LCD), configurable I/Os and electronic engine support.
- **easYgen-600** compact start/stop controller offers a state of the art LCD, adequate on-board I/Os and common industrial connectivity
- **easYgen-800** advanced start/stop controller comes with a large LCD, I/O expansion capability, Ethernet and SD card connectivity

**ToolKit-SC** is a single service tool for configuring easYgen-100 and -1000 series controllers. The module's password-protected integral front panel lets you adjust various parameters on-site.

### FEATURES

- Three-phase true RMS power sensing
- Operation modes: AUTO, STOP, and MANUAL modes accessible through front panel, discrete inputs or via interfaces
- Remote control via multiple interfaces and discrete inputs
- Direct support of several ECUs such as Bosch, Cummins, John Deere, MTU, Perkins, Scania, Volvo, Woodward
- Dedicated relay outputs for cranking and fuel solenoid
- Event and data logging capabilities with real time clock
- Maintenance scheduler with multipurpose flexible timers
- Operating hours, start, maintenance counters and monitoring
- Three switchable parameter sets of AC system winding, Rated Voltage, Rated Frequency, Rated Current, Rated Power, Rated Speed
- Can be configured from computer via USB or front panel with password protection
- Manual breaker operation with tactile buttons on front panel
- Custom boot-up logo with adjustable screen display time
- Multilingual customizable user interface

### easYgen-400 Unique Features

- ✓ Compact design – optimize footprint of your control panel
- ✓ CAN J1939 – direct communication with electronic engines
- ✓ Crank disconnect function - an additional layer of engine safety

### • Manual and Remote Start/Stop application in:

- Single-unit isolated operation
- Stand-by operation
- Prime power operation
- Rental power operation

### • Easy to set up and commission

### • Comprehensive engine, and generator protection

### • Engine ECU interface to electronic engines

### • Programmable I/Os

### • Power metering

### • Communication ports: CAN J1939, RS-485, USB

### • Dedicated relays for engine and breaker interface

### • Switchable parameter sets for mobile genset applications

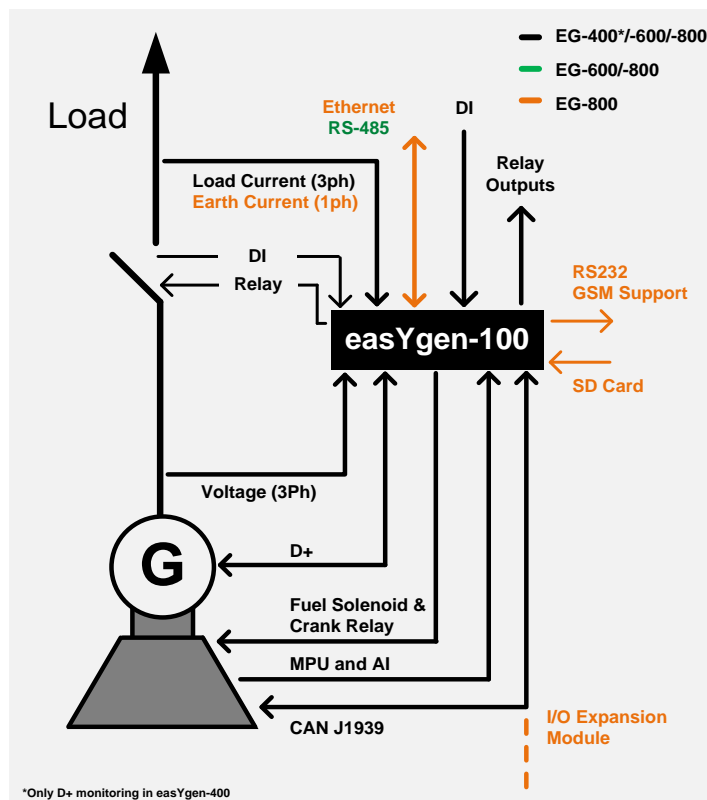
### • Can be configured from computer or front panel

### • Event log and event-triggered data log

## SPECIFICATIONS

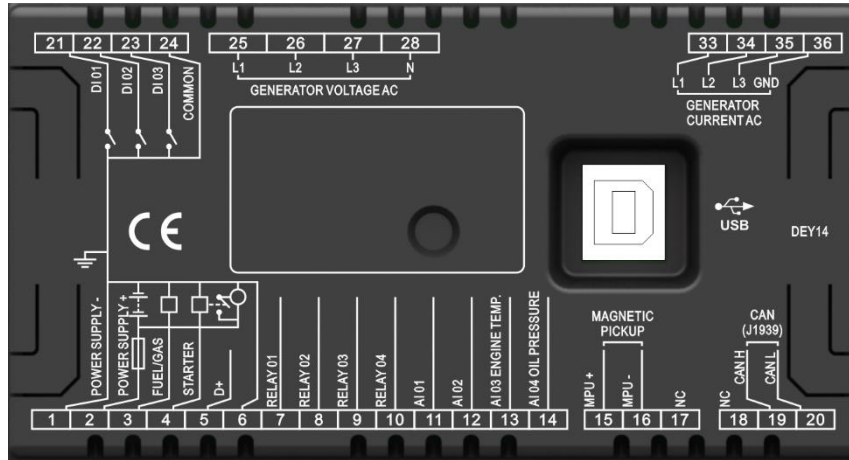
<b>Power Supply</b>		<b>Current Accuracy</b>	
Operating Voltage (Reverse polarity protected)	8.0 V <sub>DC</sub> to 35.0 V <sub>DC</sub> , Continuous Power Supply.	Excitation current D+ (easYgen-600, easYgen-800)	1 % 110 mA (12 V); 230 mA (24 V)
Maximum supply voltage	Short Time 80 V (5-10 s); Long T. 50 V	Start Relay and Fuel Relay Outputs	Rated 10Adc, 24Vdc running stand-alone. Rated 5Adc, 24Vdc when running in parallel with the FUEL/GAS relay. (easYgen-600/800 only) Rated 5Adc, 24Vdc when running in parallel with the FUEL/GAS relay. (easYgen-400) 2Adc at 24Vdc (acc. to UL 6200)
Minimum supply voltage	6.5 V	<b>Housing</b>	
Maximum operating current (easYgen-800)	(All relays closed, LCD bright) 450 mA (12 V); 220 mA (24 V)	Case Dimensions	easYgen-400: 135 x 110 x 44 mm easYgen-600: 209 X 166 x 45 mm easYgen-800: 237 x 172 x 45 mm
Maximum standby current (easYgen-800)	(All relays closed, LCD dimm) 420 mA (12 V); 200 mA (24 V)	Panel Cutout	easYgen-400: 114 x 88 mm easYgen-600: 186 x 141 mm easYgen-800: 214 x 160 mm
Power Consumption	<4 W (standby ≤ 2 W)	Operating Conditions	Temperature: (-25 to +70) °C; Humidity: max. 93%, non-condensing
<b>Alternator Input Range</b>	50 Hz/60 Hz	Storage Condition	Temperature: (-25 to +70) °C Humidity: max. 93%, non-condensing
3-Phase 4-Wire	AC15V - AC360V (ph-N)	Protection Level	IP65 in the front, mounted with kit IP20 on rear side
3-Phase 3-Wire	AC30V - AC620V (ph-ph)	Net Weight	easYgen-400: 0.3 kg easYgen-600: 0.56 kg easYgen-800: 0.85 kg
Single-Phase 2-Wire	AC15V - AC360V (ph-N)		
2-Phase 3-Wire	AC15V - AC360V (ph-N) AC30V - AC300V (ph-ph) (according UL6200)		
<b>AC-Measurement</b>	Phase-phase: 100 .. 624 V : 1%; 50 .. 100 V : 1.5 % Phase-phase: 100 .. 300 V : 1%; 50 .. 100 V : 1.5 % (according to UL6200) Phase-neutral: 100 .. 360 V : 1% 50 .. 100 V : 1.5 %		
Voltage Accuracy (400/480 V % rated)			
Minimum frequency	Generator: 10 Hz		
Maximum frequency	Generator: 99.5 Hz;		
Frequency resolution	0.1 Hz (10 .. 99 Hz)		
Frequency accuracy	±0.1 Hz		
Nominal CT secondary rating	5 A		
Overload Measurement	Max.: 10 A		

## APPLICATION

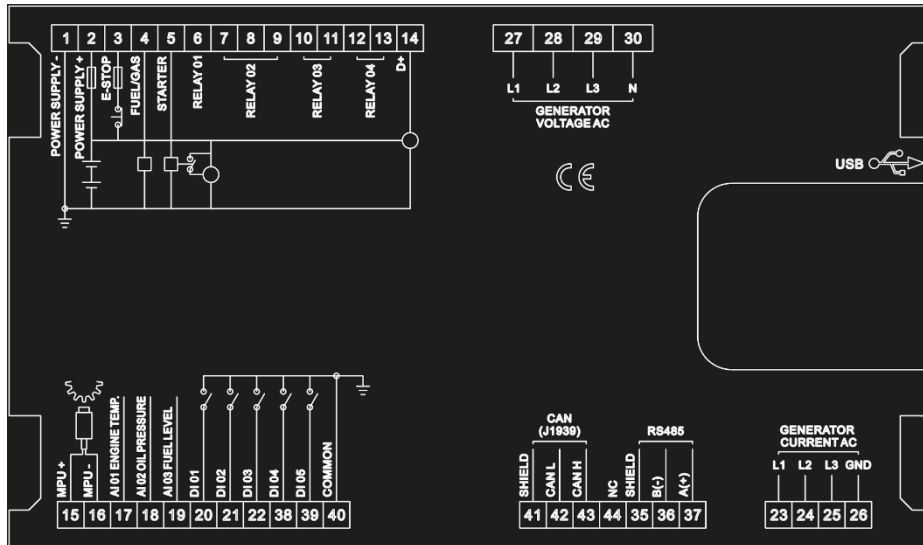


# TERMINALS

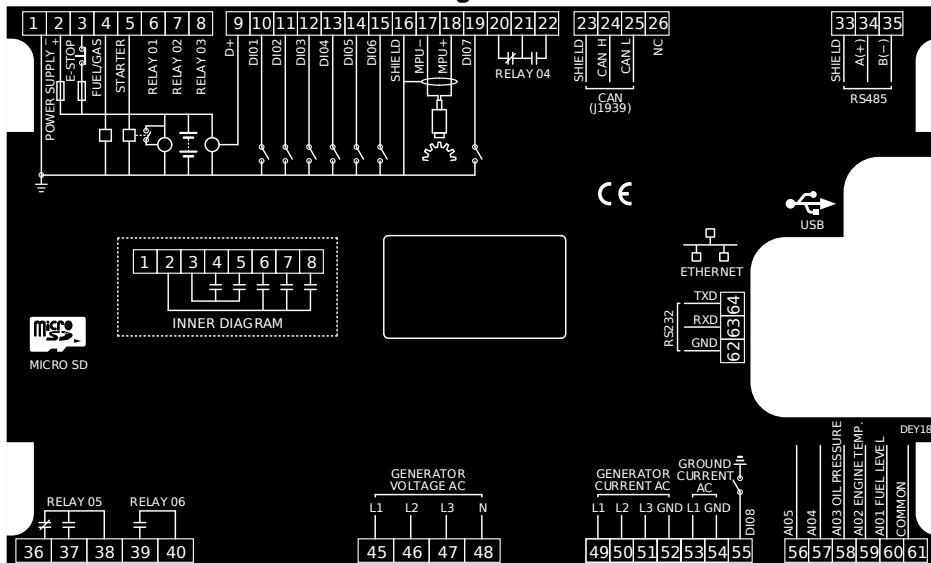
easYgen-400



easYgen-600



easYgen-800



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## FEATURES OVERVIEW

	easYgen-100 Series			
	Model	easYgen-400	easYgen-600	easYgen-800
<b>Measuring</b>				
Generator voltage (3-phase/4-wire)			✓	
Generator current (3x true r.m.s.)			✓	
Earth current (1x true r.m.s.)	—	—		✓
<b>Control</b>				
Isolated single unit operation			✓	
Stand-by operation			✓	
GCB control				
Start/stop sequence for diesel and gas engines	Diesel	Diesel		Diesel/Gas
Tactile buttons to start/stop the genset and open/close the breaker			✓	
<b>Protection</b>				
Generator	Voltage / # of levels	✓ / 1		✓ / 2
	Frequency / # of levels			
	Voltage asymmetry	-	-	✓
	Rotation Field	-	-	✓
	Current	✓	✓	✓
	Reverse Power	-	-	✓
	Overload	✓	✓	✓
Earth fault (measured)	—	—		✓
Engine	Over speed / # of level	✓ / 1		✓ / 2
	Under speed / # of level			
	Speed signal	✓	✓	✓
	Crank disconnect	✓	✓	✓
Battery voltage	✓	✓	✓	
<b>HMI, Counters, and Event Log</b>				
Integral display with tactile buttons	Monochrome LCD (132 x 64)	Monochrome LCD (132 x 64)		TFT LCD (480 x 272)
Customizable power-up text and image	✓	✓		✓
Front panel configuration with PIN protection	✓	✓		✓
Flush mounting	✓	✓		✓
Operating hours/start/maintenance counters	✓	✓		✓
Event recorder with real time clock	50	50		99 internal; extended data log using SD card
kWh, kvarh	✓/-	✓/-		✓/✓
Switchable parameter sets	—	—		✓
<b>I/Os and Interfaces</b>				
Discrete inputs	3 (+2 switchable as AI/DI)	1x E-Stop, 5x configurable		1x E-Stop, 8x configurable
Relay outputs	6	6		8
Analog inputs	4x resistive (2 switchable as AI/DI)	3x resistive		5x resistive
Speed input (MPU)	1	1		1
Aux. excitation (D+)	1	1		1
Ethernet (TCP/IP)	—	—		1
CAN (J1939)	1	1		1
USB service port	1	1		1
RS485	—	1		1
RS232	—	—		1
External DI/DO via CAN bus	-/-	-/-		16 / 16
Micro SD card support	—	—		1
<b>Listings/Approvals</b>				
CE Marked		✓		
UL / cUL Listing	✓	✓		✓
<b>Part Numbers</b>				
Control with connectors and fastening kit	8440-2250	8440-2252		8440-2254
Spare connector kit	10-009-352	10-004-674		10-004-675

## RELATED PRODUCTS

- Configuration tool **ToolKit-SC** (Product Specification # 37695) : P/N 9927-2684
- I/O Expansion Board **IKD1** (Product Specification # 37171): P/N 8440-2116
- Small Engine Control Module **SECM-70** (Product Specification # 36363)