



GCP-30 Series

Genset Control Package Mains & Generator Protection & Control

APPLICATIONS

The GCP-30 Series genset control is designed to provide total control for medium sized to big applications with multiple gensets.

A network of the compact, versatile GPC-30 controls is capable of controlling up to eight gensets with automatic sequencing.

Load management features include automatic base/peak shaving, import/export control and emergency power/back up power generation.

The GCP-31 has logic for one, the GCP-32 has logic for two circuit breakers including open/closed transition.

DESCRIPTION

Features

- True RMS 8x voltage (gen/bus/mains)
- True RMS 4x current (gen/mains)
- Start/stop logic for Diesel/Gas engines
- Engine pre-glow or purge control
- Battery voltage monitoring
- Speed control with overspeed monitoring
- kWh/oper.hours/start/maintenance counter
- Load dependent start/stop
- Configurable trip/control set points
- Configurable delays for each protection
- Magnetic/switching Pickup input
- 16 configurable discrete alarm inputs
- 7 configurable/programmable relays
- Two-line LC display
- Synchroscope
- Push-buttons for direct control
- CAN bus communication
- Multi level password protection

DESCRIPTION (continued)

Protection ANSI

Mains

- Over-/undervoltage (59/27)
- Over-/underfrequency (81O/U)
- Phase/vector shift (78)

Generator

- Over-/undervoltage (59/27)
- Over-/underfrequency (81O/U)
- Overload (32)
- Reverse/reduced power (32R/F)
- Load imbalance (46)
- Time-overcurrent (TOC) (50)

Controller (all versions)

- Speed/frequency/real power
- Voltage/power factor cosphi
- Mains import/export power
- Load/var sharing (up to 8 units)

Controller (GCP-31)

Synchronizer for 1 CB

- Isolated operation
- Mains parallel operation
- Softloading

Controller (GCP-32)

Synchronizer for 2 CB

- AMF automatic mains failure
- Isolated operation
- Open transition (break-before-make)
- Closed transition (make-before-break)
- Mains parallel operation

Special (Version dependent)

- 2 config. analog outputs (0/4..20 mA)
- Active power setpoint (0/4..20 mA)
- Discrete raise/lower for n/f/U/P/Q
- Analog raise/lower for n/f/U/P/Q
- PWM raise/lower for n/f/P
- 3/6 conf. analog measuring inputs (0/4..20 mA, Pt100, VDO)
- Event recorder with real time clock

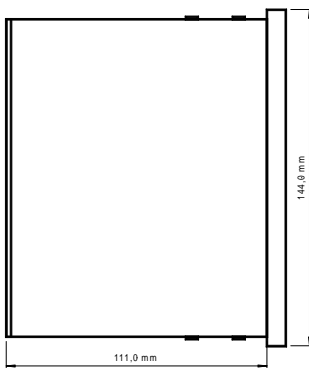
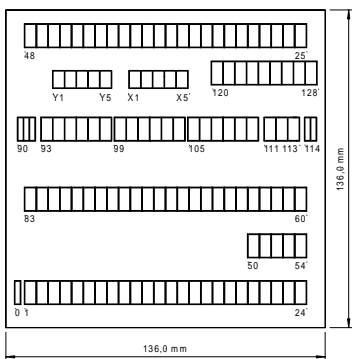
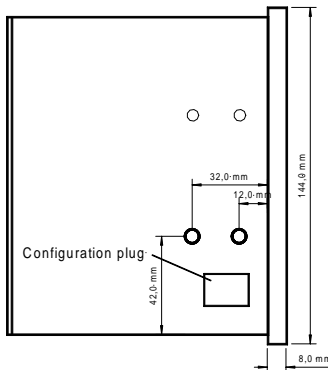
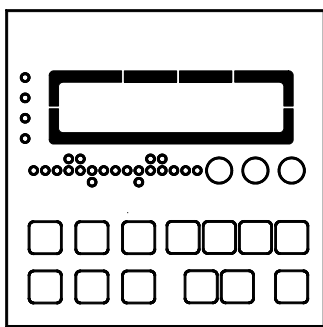
- AMF auto start/stop
- Complete engine, generator, and mains protection and controller into one unit
- True RMS sensing
- Synchronization for one/two breakers
- Load management-automatic base load/peak shaving, import/export power control, automatic sequencing
- Load/var sharing
- Counters for kWh, engine starts, operating hours, maintenance call
- Freely configurable discrete and analog alarm inputs
- Freely configurable relay and analog outputs
- PC and front panel configurable
- CAN bus based communication
- UL/cUL Listed

SPECIFICATIONS

Accuracy.....Class 1
 Power supply.....12/24 Vdc (9.5..32 Vdc)
 Intrinsic consumptionmax. 15 W
 Ambient temperature.....-20..70 °C
 Ambient humidity.....95 %, non-condensing
Voltage Rated: [1] 57/100(120) Vac ... or [4] 230/400 Vac
 UL: [1] max. 150 Vac or [4] max. 300 Vac
 Setting range: [1] 50..125 Vac or [4] 200..440 Vac
 Measuring frequency.....50/60 Hz (40..70 Hz)
 Linear measuring range up to1.3xUn
 Input resistance.....[1] 0.21 MΩ, [4] 0.7 MΩ
 Max. power consumption per path< 0.15 W
Current[#].....[./1] ..1 A or [./5] ..5 A
 Current-carrying capacityIgen = 3.0xIn
 Imains = 1.5xIn
 Load< 0.15 VA
 Rated short-time current (1 s)[./1] 50xIn, [./5] 10xIn
Discrete inputs.....metallically separated
 Input range12/24 Vdc (4..40 Vdc)
 Input resistance.....approx. 6.7 kΩ

Relay outputs.....metallically separated
 Contact materialAgCdO
 Load (GP).....24 Vdc@2 Adc, 250 Vac@2 Aac
 Pilot duty (PD)24 Vdc@1 Adc
Analog input[#].....freely scaleable
 Type0/4..20 mA, Pt100, VDO
 Resolution10 Bit
Analog output.....metallically separated
 Type0/4..20 mA, freely scaleable
 Resolution8/12 Bit (depending on model)
 Max. load 0/4..20 mA500 Ω
 Insulating voltage3,000 Vdc
Housing.....Type APRANORM DIN 43 700
 Dimensions.....144x144x118 mm
 Front cutout138x136 mm
 Connectionscrew/plug terminals depending
 on connector 1.5 mm² or 2.5 mm²
 Frontinsulating surface
 Protection system.....IP 21
 Weightdepending on version, approx. 1,000 g
Disturbance test (CE).....tested according to
 applicable EN guidelines
Listings.....UL/cUL listed (voltages up to 300 Vac)
 for ordinary loc., file E212970

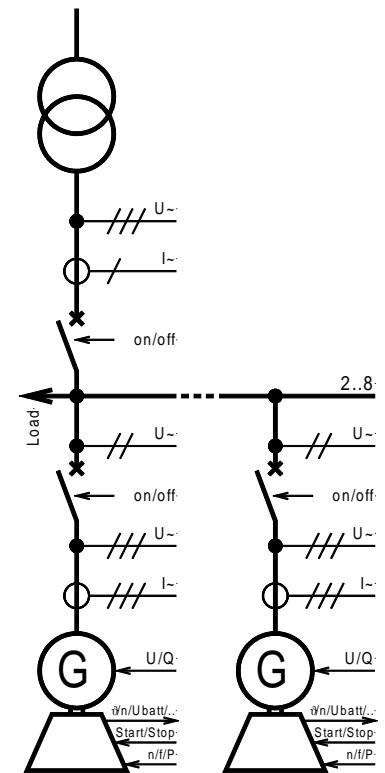
DIMENSIONS



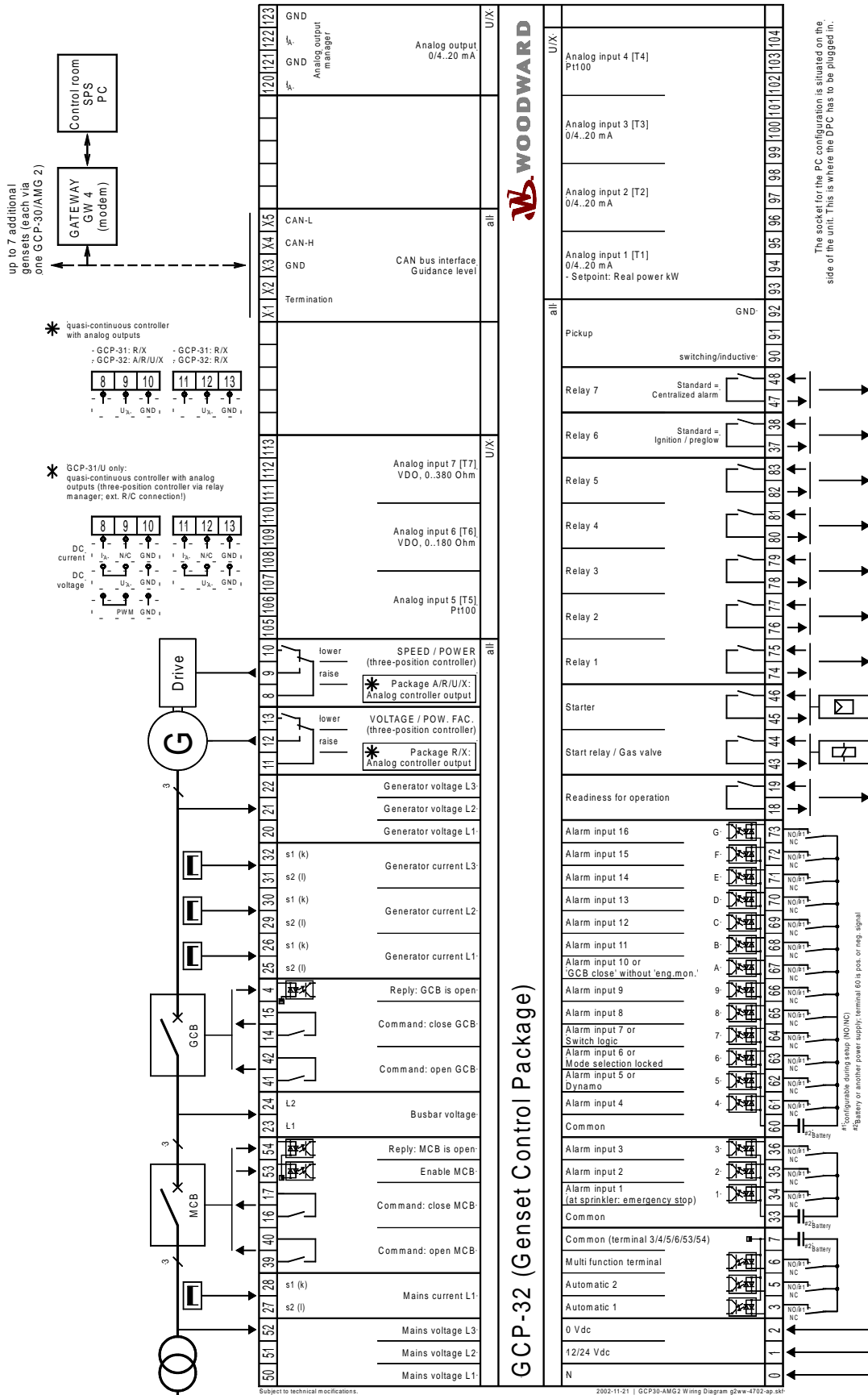
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APPLICATIONS

Typical application for the GCP-32
 (GCP-31 same but without MCB)



WIRING DIAGRAM (GCP-31 upon request)



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FEATURES OVERVIEW

Package	GCP-31				GCP-32			
	A	R	U	X	A	R	U	X
Control								
Breaker control logic	1	1	1	1	2	2	2	2
Synchronization	✓	✓	✓	✓	✓	✓	✓	✓
Isolated single-unit operation	✓	✓	✓	✓	✓	✓	✓	✓
AMF (auto mains failure operation)	✓	✓	✓	✓	✓	✓	✓	✓
Stand-by operation	✓	✓	✓	✓	✓	✓	✓	✓
CHP operation	✓	✓	✓	✓	✓	✓	✓	✓
Peak load op. (auto start/stop)	✓	✓	✓	✓	✓	✓	✓	✓
Mains parallel operation	✓	✓	✓	✓	✓	✓	✓	✓
Open transition (break-before-make)	✓	✓	✓	✓	✓	✓	✓	✓
Closed transition (make-before-break)	✓	✓	✓	✓	✓	✓	✓	✓
Softloading	✓ #1	✓ #1	✓ #1	✓ #1	✓	✓	✓	✓
Accessories								
Start/stop logic for Diesel/Gas engines	✓	✓	✓	✓	✓	✓	✓	✓
kWh counter	✓	✓	✓	✓	✓	✓	✓	✓
Operating hours/start/maintenance counter	✓	✓	✓	✓	✓	✓	✓	✓
Configuration via PC #2	✓	✓	✓	✓	✓	✓	✓	✓
Event recorder, real time clock			50	50			50	50
Protection								
Generator: voltage/frequency	✓	✓	✓	✓	✓	✓	✓	✓
Mains: volt./freq./phase shift	✓	✓	✓	✓	✓	✓	✓	✓
Generator: overload	✓	✓	✓	✓	✓	✓	✓	✓
Generator: reverse power	✓	✓	✓	✓	✓	✓	✓	✓
Generator: reduced power	✓	✓	✓	✓	✓	✓	✓	✓
Generator: load imbalance	✓	✓	✓	✓	✓	✓	✓	✓
Generator: time-overcurrent (TOC)	✓	✓	✓	✓	✓	✓	✓	✓
Controller								
Discrete raise/lower: n/f & P	✓		✓ #3					
Discrete raise/lower: U & Q	✓		✓ #3		✓		✓	
Analog raise/lower: n/f & P (+/-3 Vdc)		✓	✓ #3	✓	✓	✓	✓	✓
Analog raise/lower: U & Q (+/-5 Vdc)		✓	✓ #3	✓		✓		✓
PWM raise/lower: n/f & P			✓ #3					
Mains import/export power	✓	✓	✓	✓	✓	✓	✓	✓
Load-dependent start/stop	✓	✓	✓	✓	✓	✓	✓	✓
Active power setpoint value: 0/4..20 mA			✓	✓			✓	✓
Load/var sharing	✓	✓	✓	✓	✓	✓	✓	✓
I/O's								
Magnetic/switching Pickup	✓	✓	✓	✓	✓	✓	✓	✓
Discrete alarm inputs (configurable)	16	16	16	16	16	16	16	16
Relay outputs (configurable)	7	7	7	7	7	7	7	7
Analog inputs (configurable)			3 #4	6 #5			6 #5	6 #5
Analog outputs 0/4..20 mA (configurable)			2	2			2	2
CAN bus communication #6	✓	✓	✓	✓	✓	✓	✓	✓
LS 4 - Circuit Breaker Control #7			✓					
Listings/Approvals								
UL/cUL listed	✓	✓	✓	✓	✓	✓	✓	✓

#1 In isolated parallel operation with min. 2 gensets in parallel

#2 Cable incl. software necessary (DPC)

#3 +/-20 mA and +/-10 Vdc and PWM signal (type and range configurable); bias setpoint via relay manager

#4 [T2]..[T3] = 0/4..20 mA
[T4] = Pt100

#5 [T2]..[T3] = 0/4..20 mA
[T4]/[T5] = Pt100
[T6] = VDO, 0..180 Ohm
[T7] = VDO, 0..380 Ohm

#6 Remote monitoring, control, configuration (GW 4 could be used for several interfaces)

#7 External unit

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