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 large applications with multiple gensets.

A network of the compact, versatile GPC-30 controls is capable of controlling up to 14 gensets with automatic sequencing. Load management features include automatic base loading/peak shaving, import/export control and emergency power/back up power generation.

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

Fully integrated communication to engine ECUs including [via CAN bus] standard SAE J1939, Deutz EMR, Scania S6, mtu MDEC; [via RS232] Caterpillar CCM to EMCP-II, and ECM.

DESCRIPTION (continued)

Protection

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 for up to 14 generators

Controller (GCP-31)
Synchronizer for 1 CB
- Isolated operation
- Softloading
- Mains parallel operation

Controller (GCP-32)
Synchronizer for 2 CB
- same as GCP-31 plus following
- Open transition (break-before-make)
- Closed transition (make-before-break)

Special (Version dependent)
- 2 configurable analog outputs (0/4 to 20 mA)
- Generator real power setpoint via 0/4 to 20 mA
- Mains import/export power via 0/4 to 20 mA
- Discrete outputs raise/lower for n/I/V/P/Q
- Analog outputs raise/lower for n/I/V/P/Q
- PWM outputs raise/lower for n/I/P
- 7 conf. analog measuring inputs
(0/4 to 20 mA, Pt100, VDO)
- Coupling to LS 4 (GCP-31 only; for details see product specification 37167)
- Event recorder with real time clock

- J1939 (Scania S6, Deutz EMR), mtu MDEC, and CAT CCM (EMCP-II, and ECM) coupling
- AMF auto start/stop
- Complete engine, generator, and mains protection and controller in one unit
- True RMS sensing of generator, busbar and mains voltage as well as generator and mains current
- Synchronization for one/two breakers
- Load management-automatic base load/peak shaving, import/export power control, automatic sequencing
- Load/var sharing for up to 14 generators incl. auto start/stop
- 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
- CE marked
- UL/cUL Listed
SPECIFICATIONS (for more see manual 37239)

Accuracy .......................................................................................... Class 1
Power supply ...................................................................................... 12/24 Vdc (9.5 to 32 Vdc)
Intrinsic consumption ....................................................................... max. 20 W
Ambient temperature ........................................................................ -20 to 70 °C
Ambient humidity ............................................................................... 95 %, non-condensing
 UL: [1] max. 86/150 Vac or [4] max. 173/300 Vac
Setting range (sec.) star: [1] 50 to 125 Vac or [4] 50 to 480 Vac
Setting range (sec.) delta: [1] 50 to 114 Vac or [4] 50 to 380 Vac
Setting range (prim.): 0.050 to 65.000 kVac
Measuring frequency ......................................................................... 50/60 Hz (40 to 70 Hz)
Linear measuring range up to ......................................................... 1.3×Vrated
Input resistance .............................................................................. [1] 0.21 MΩ, [4] 0.7 MΩ
Max. power consumption per path .................................................. < 0.15 W
Current-carrying capacity .................................................................. Igen = 3.0×Irated
Imains = 1.5×Irated
Load ................................................................................................. < 0.15 VA
Input range ....................................................................................... 12/24 Vdc (6 to 32 Vdc)
Input resistance ............................................................................... approx. 6.8 kΩ
Analog inputs .................................................................................. freely scaleable
Type ............................................................................................... 0/4 to 20 mA, Pt100, VDO
Resolution .......................................................................................... 10 Bit
Relay outputs ................................................................................... potential free
Contact material ............................................................................... AgCdO
Load (GP) ......................................................................................... AgCdO
2.00 Aac@24 Vac / 0.36 Aac@125 Vac / 0.18 Aac@250 Vac
Pilot duty (PD) .................................................................................. B300
1.00 Aac@24 Vac / 0.22 Aac@125 Vac / 0.10 Aac@250 Vac
Analog outputs .................................................................................. isolated
Type ............................................................................................... 0/4 to 20 mA, freely scaleable
Resolution .......................................................................................... 8/12 Bit (depending on model)
Max. load 0/4-20 mA ......................................................................... 500 Ω
Insulating voltage ............................................................................. 1,500 Vdc
Housing .......................................................................................... Type APRANORM DIN 43 700
Dimensions ...................................................................................... 144×144×118 mm
Front cutout .................................................................................... 138+[1.0]×138+[1.0] mm
Connection ...................................................................................... screw/plug terminals depending
on connector 1.5 mm² or 2.5 mm²
Protection system ............................................................................ with proper installation
Front ............................................................................................... IP42
Back ............................................................................................... IP21
Weight ............................................................................................ depending on version, approx. 1,000 g
Disturbance test (CE) ..................................................................... tested according to applicable EN guidelines
Listings ............................................................................................ UL/CUL listed (voltages up to 300 Vac)

DIMENSIONS

APPLICATIONS

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

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#### Control
- Breaker control logic
- Synchronization
- Isolated single-unit operation
- AMF (auto mains failure operation)
- Stand-by operation
- Peak load op. (auto start/stop)
- Mains parallel operation
- Open transition (break-before-make)
- Closed transition (make-before-break)
- Softstarting

#### Accessories
- Start/top logic for Diesel/Gas engines
- kWh counter
- Operating hours/maintenance counter
- Configuration via PC
- Event recorder, real time clock
- Language manager (English/German)

#### Protection
- Generator: voltage/frequency
- Mains: volt/freq./phase shift
- Generator: overload/load imbalance
- Generator: reverse/reduced power
- Generator: time-overcurrent (TOC)

#### Controller
- Discrete raise/lower: n½ & P
- Discrete raise/lower: V & Q
- Analog raise/lower: n½ & P
- Analog raise/lower: V & Q
- PWM raise/lower: n½ & P
- Mains import/export power via 20 mA
- Mains import/export power control
- Load-dependent start/stop
- Active power setpoint 0-20 mA
- Load/Var sharing for 14 generators

#### I/O's
- Magnetic/switching Pickup
- Discrete alarm inputs (configurable)
- Relay outputs (configurable)
- Analogue inputs (configurable)
- Analogue outputs 0-20 mA (config.)
- External operation mode selection via Di
- CAN bus comm., Guidance level
- CAN bus comm., Engine level
- RS232 comm., Engine level
- LS 4 - Circuit Breaker Control

#### Listings/Approvals
- CE Marked
- UL/CUL Listed

#### Part numbers PIN

1. Measuring inputs 120 Vac.../L A (8440-...)
2. Measuring inputs 400 Vac.../L A (8440-...)
3. Measuring inputs 120 Vac.../L A (8550-...)
4. Measuring inputs 400 Vac.../L A (8550-...)

- Measuring inputs 120 Vac.../L A (8440-...)
- Measuring inputs 400 Vac.../L A (8440-...)
- Measuring inputs 120 Vac.../L A (8550-...)
- Measuring inputs 400 Vac.../L A (8550-...)

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1: External unit LS 4 necessary.
2: In isolated parallel operation with min. 2 gensets in parallel.
3: Cable incl. software necessary (CPX).
4: +20 mA and +10 Vdc and PWM signal (type and range configurable); basic discrete setpoint via relay manager.
5: [T1]+[T2] = 0-20 mA, [T2]+[T3] = 0-100%.
6: CAN bus connection via KO1, gateway MEC, Scania EMS6, CAN SAE J1939 and/or ST3 (configurable).
7: Remote monitoring, control, configuration (GIV 4 could be used for several interfaces).
8: External unit LS 4.