



GCP-20 Series

Genset Control Package

Mains & Generator Protection & Control

APPLICATIONS

The GCP-20 Series genset control is designed to provide total control for stand-alone and multiple unit applications in isolated or mains parallel operation.

There are three GCP-20 Series Packages available for various genset applications. The GCP-20 is designed for stand-by gensets. Open or closed transition power transfers including logic for two circuit breakers. The GCP-21 is designed for continuous parallel operation and has control logic for one circuit breaker. The GCP-22 has control logic for two circuit breakers that enable automatic power transfers like open transition, closed transition and softloading.

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

DESCRIPTION

Features (all versions)

- True RMS voltage (generator/busbar/mains)
- True RMS current (generator/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
- Configurable trip/control set points
- Configurable delays for each protection
- Speed input (magnetic/switching pickup, MPU)
- 14 configurable discrete alarm inputs
- 4 configurable/programmable relays
- Two-line LC display
- Push-buttons for direct control
- Multi level password protection

Controller (all versions)

- Speed/frequency/voltage
- Isolated operation

DESCRIPTION (continued)

Protection (all versions) ANSI

Mains

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

Generator

- Over-/undervoltage (59/27)
- Over-/underfrequency (81O/U)
- Overload/reverse power (32/32R)
- Unbalanced load (46)
- Time-overcurrent (50)

GCP-20 (unique features)

Synchronizer for GCB and MCB

- AMF automatic mains failure
- Open transition (break-before-make)
- Closed transition (make-before-break)

GCP-21/-22 (unique features)

Synchronizer for GCB

- Real power/power fact. cosphi control
- Mains parallel operation
- Mains import/export power control
- Reduced power monitoring (32F)
- Load dependent start/stop
- Load/var sharing (up to 8 units)

GCP-22 (unique features)

Synchronizer for GCB and MCB

- AMF automatic mains failure
- Open transition (break-before-make)
- Closed transition (make-before-break)
- Softloading

Special (Version dependent)

- 2 configurable analog outputs (0/4 to 20 mA)
- Generator real power setpoint via 0/4 to 20 mA
- Discrete raise/lower for n/f/V/P/Q
- Analog raise/lower for n/f/V/P/Q
- 3 conf. analog alarm inp. (0/4 to 20 mA, VDO)
- CAN bus communication

- Complete engine, generator, and mains protection and controller into one unit
- AMF auto start/stop
- True RMS sensing
- Synchronization for one/two breakers
- Load management-automatic base load/peak shaving, import/export power control
- Automatic start/stop 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 communication
- CE marked
- UL/cUL Listed

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)	B300
	1.00 Adc@24 Vdc / 0.22 Adc@125 Vdc / 0.10 Adc@250 Vdc

Analog output.....	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	3,000 Vdc

Housing.....	Type APRANORM DIN 43 700
Dimensions	144×96×118 mm
Front cutout	138 [+1.0] × 92 [+0.7] mm
Connection	screw/plug terminals depending on connector 1.5 mm ² or 2.5 mm ²
Front.....	insulating surface

Protection system for proper installation

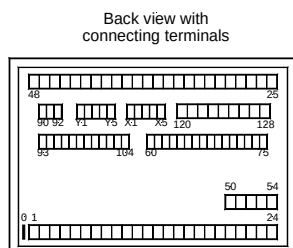
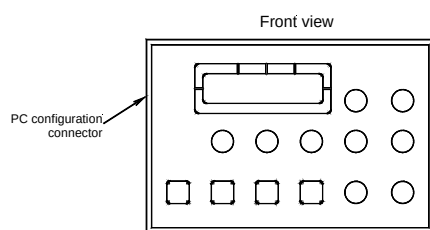
Front IP42
(sealed IP54; gasket kit = P/N 8923-1038)

Back IP21

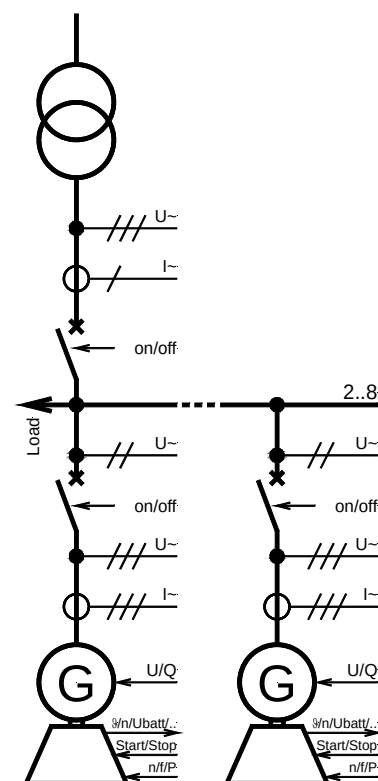
Weight depending on version, approx. 1,000 g

Disturbance test (CE).....tested according to applicable EN guidelines

Listings UL/cUL listed (voltages up to 300 Vac)



2003-01-29 | GCP20-AMG3 Dimensions g3ww-0503-ab skf



FEATURES OVERVIEW

GCP-20 Series Genset Control	GCP-20					GCP-21				GCP-22				
	Package	T2	LS	B	X	LSX	LS	LSB	LSR	LSX	LS	LSB	LSR	LSX
Control														
Breaker control logic	2	2	2	2	2		1	1	1	1	2	2	2	2
Synchronization	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Isolated single-unit operation	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
AMF (auto mains failure operation)	✓	✓	✓	✓	✓						✓	✓	✓	✓
Stand-by operation	✓	✓	✓	✓	✓						✓	✓	✓	✓
CHP (combined head & power) operation							✓	✓	✓	✓	✓	✓	✓	✓
Peak load operation (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	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Protection														
Generator: voltage/frequency	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Mains: volt./freq./phase shift							✓	✓	✓	✓	✓	✓	✓	✓
Generator: overload	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Generator: reverse power	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Generator: reduced power							✓	✓	✓	✓	✓	✓	✓	✓
Generator: unbalanced load	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Generator: time-overcurrent (TOC)	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Controller														
Discrete raise/lower: n/f	✓	✓					✓				✓			
Discrete raise/lower: U	✓	✓				✓	✓		✓		✓		✓	
Discrete raise/lower: P							✓				✓			
Discrete raise/lower: Q							✓		✓		✓		✓	
Analog raise/lower: n/f (+/-3 Vdc)			✓	✓	✓			✓	✓	✓		✓	✓	✓
Analog raise/lower: U (+/-5 Vdc)			✓	✓				✓		✓		✓		✓
Analog raise/lower: P (+/-3 Vdc)								✓	✓	✓		✓	✓	✓
Analog raise/lower: Q (+/-5 Vdc)								✓		✓		✓		✓
Mains import/export power (cur. meas.)							✓	✓	✓	✓	✓	✓	✓	✓
Load-dependent start/stop							✓	✓	✓	✓	✓	✓	✓	✓
Real power setpoint value: 0/4 to 20 mA										✓				✓
Load/var sharing		✓				✓	✓	✓	✓	✓	✓	✓	✓	✓
I/Os														
Speed input (magnetic/switching Pickup)	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Discrete alarm inputs (configurable)	14	14	14	14	14		14	14	14	14	14	14	14	14
Relay outputs (configurable)	4	4	4	4	4		4	4	4	4	4	4	4	4
Analog inputs (configurable)	2 #3			4 #4	4 #4				4 #4	3 #5			4 #4	3 #5
Analog outp. 0/4 to 20 mA (configurable)										2				2
CAN bus communication #6		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Listings/Approvals														
CE marked	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
UL/cUL listed	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Product number P/N														
120 Vac, ..5 A		8440-1581	5448-878	5448-877	8440-1584		8440-1586	8440-1541	8440-1346	8440-1587	8440-1590	8440-1103	8440-1052	8440-1591
400 Vac, ..5 A	8440-1038	5448-918	8440-1582	8440-1583	5448-917		5448-916	8440-1014	5448-915	8440-1013	5448-914	8440-1012	5448-913	8440-1011

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

#2 Cable incl. software necessary (DPC)

#3 [T1] & [T2] = 0/4 to 20 mA

#4 [T1]= VDO 0 to 5/10 bar; 0 to 180 Ohm; [T2] = VDO 40 to 120°C; 0 to 380 Ohm; [T3] & [T4] = 0/4 to 20 mA; freely scaleable

#5 [T1]= VDO 0 to 5/10 bar; 0 to 180 Ohm; [T2] = VDO 40 to 120°C; 0 to 380 Ohm; [T3] = 0/4 to 20 mA; freely scaleable

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

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WIRING DIAGRAM (GCP-20 and GCP-21 upon request)

