

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

WOODWARD

CMP1120

DISPLAY AND OPERATING UNIT

Used with the applicable SYSTEM LINE CMP1 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: SEG SYSTEM LINE CSP2 Combined Protection and Control System



Combined Protection and Control System

CSP2-F Feeder Protection

CSP2-L Cable-/Line Differential Protection

CSP2-T Transformer Differential Protection



3 Display/Operating unit **CMP1**

The **CMP1** is easy to operate and ergonomically designed. The **CMP1** is installed in the front door of the medium-voltage compartment as a separate operating and control unit (MMU). Generally the display shows the phase current values and the single line diagram of the feeder.

The required communication with the base unit **CSP2** is realised by a CAN-fieldbus. A single CAN-cable creates the connection to the base unit **CSP2** and therefore replaces the conventional cable tree. This CAN-cable can be easily joined to the auxiliary voltage supply cable.

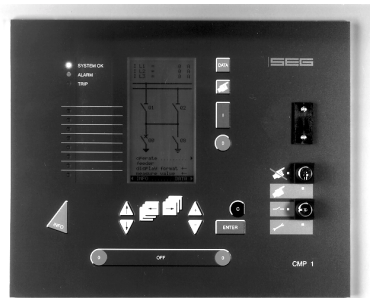


Figure 3.1: **CMP1**

The most important features of the **CMP1** include:

- Flat, compact design,
- Wide ranging power supply,
- Large, automatic LC graphic display with illuminated background (128 x 240 Pixel):
 - Representation of the configured single line diagram,
 - Display of switch positions, measuring values and pop-up messages,
 - Protocolling of events including time stamps,
 - Protocolling of fault events including fault values as effective values,
 - Extensive commissioning support and
 - various test functions.
- Front operating panel as per protection class IP54,
- Multi-coloured function keys for menu guidance, control and Danger-OFF function,

- Two key switches for fixing the switching authorizations:
 - Local/remote operation mode and
 - Normal operation/Parameter setting mode.
- 11 multi-coloured LEDs (configurable),
- Integrated signal relay for system fault message,
- CAN interface for communication with **CSP2**,
- Two RS232 interfaces for parameter setting and the evaluation of data via PC/laptop.

3.1 Operating the **CMP1**

The control of the medium-voltage feeder and parameter setting can be carried out by the **CMP1**. All inputting of information can be made with the front operating panel. Check-back signals and the status of the devices are shown on the large graphic display, which has a illuminated background. The switch positions are shown graphically, messages as texts and parameters/measured values are in table form.

3.2 Operating elements of the CMP1

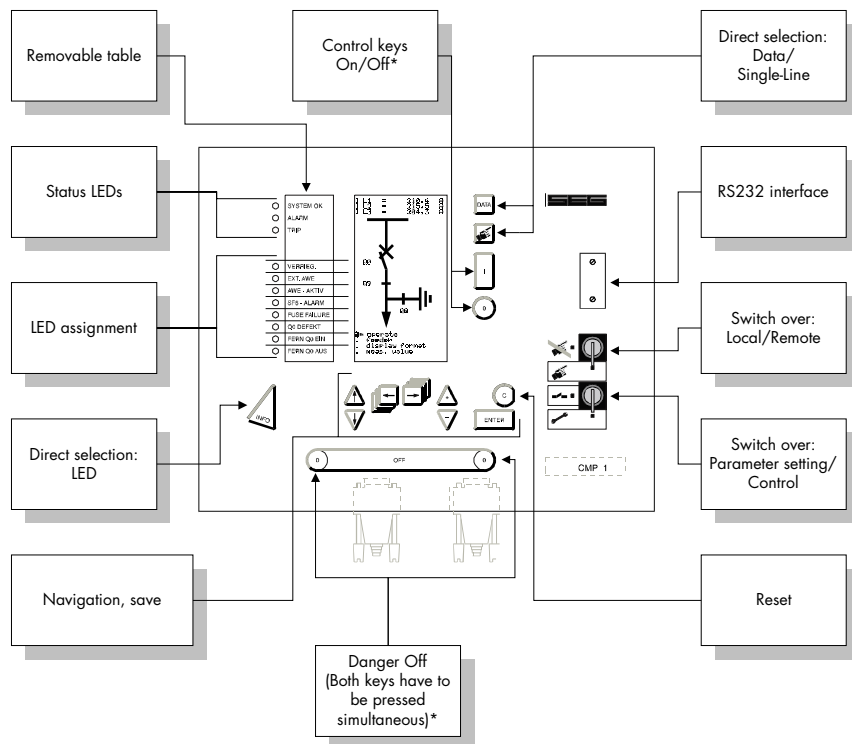


Figure 3.2: Operating elements of the CMP1

3.3 Functions of the operating elements

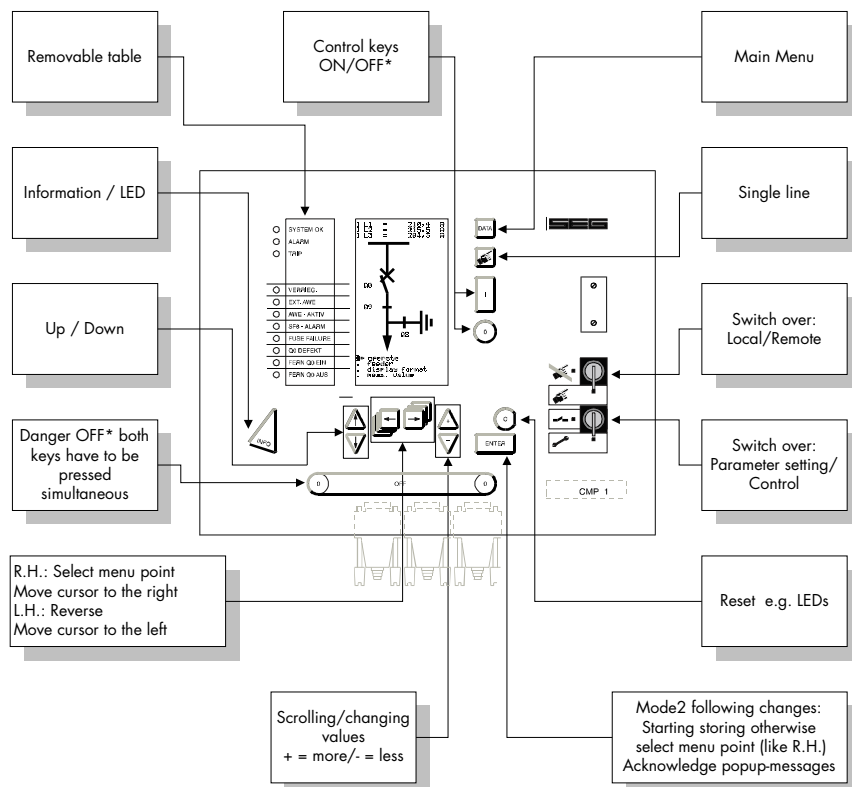


Figure 3.3: Functions of operating elements

3.4 The operating modes

Two key switches allow for various switch authorisations to be set:

- MODUS 1: Local operating/control,
- MODUS 2: Local operating/parameter setting and
- MODUS 3: Remote control.

Depending on their position, the switches will either allow the control or parameter setting of the **CSP2**.

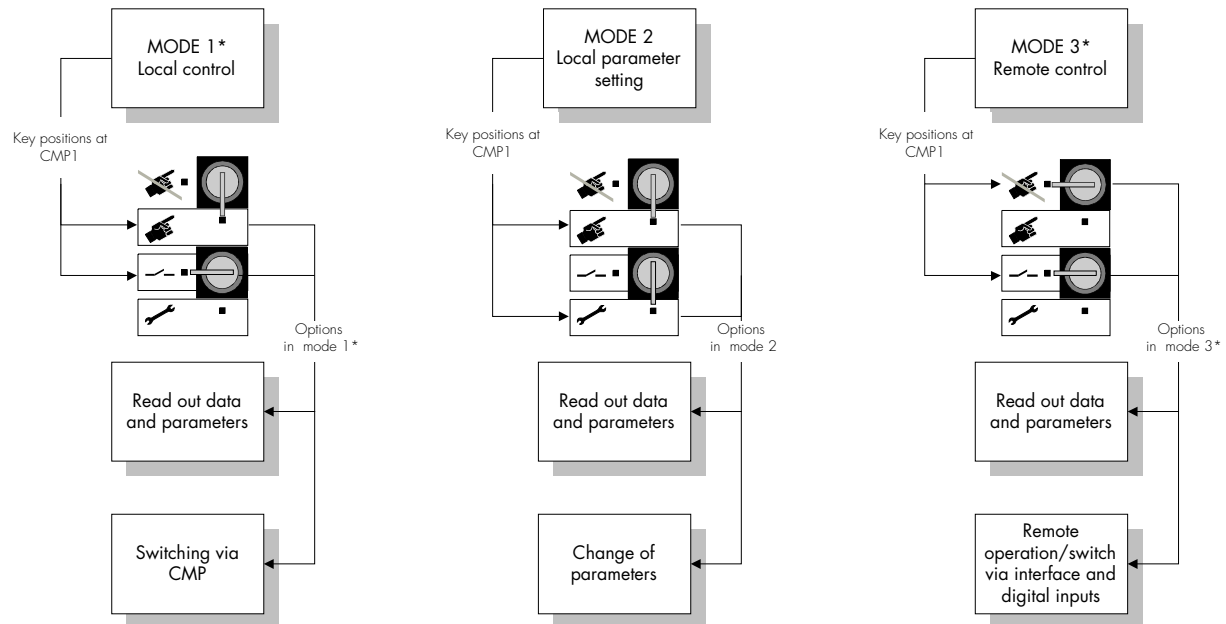


Figure 3.4: The operating modes

3.5 Control of switching devices

The switching devices shown in the single line diagram can be selected and controlled by the operating unit **CMP1**. Every control command that is given, is first checked by the internal, as well as external pre-programmed interlocking logics before being carried out. Switching operations via the **CMP1** can only be carried out in MODUS 1 – Local operating/control.

The positions of the switching devices, e.g. those of the circuit breakers, are recorded and monitored via its auxiliary contacts. In this procedure the contact bounce of the auxiliary switch is suppressed via software.

The integrated control logic evaluates and processes the available switch positions as well as the readiness of the switch (spring charged). It then issues the »OFF« or »ON« command, only if the pre-programmed interlocking conditions have been scrutinized.

The switch-on and switch-off coils of the circuit breaker and the motors-drives of the switching devices are to be controlled by the power outputs of the **CSP2**. By simple wire bridges there is a choice between

- direct control (with change of polarity) and
- indirect control (without change of polarity)

of motor driven switching devices.

A switch-on command will only take place if the switch-off position has been clearly signalled beforehand, and vice versa.

Switching actions are carried out sequentially. All control commands issued have a time limit. If the control commands are not carried out within a specified time, the **CSP2** will give a fault signal. Monitoring of the check-back signals of the controlled switching device is carried out by the maximum control and reaction times of the switching device.

6 Technical Data

6.1 Auxiliary voltage

Fixed auxiliary voltages (EN 60255-6):

Direct circuit (DC): 24 V, 48 V, 60 V, 110 V, 220 V

Alternating circuit (AC): 24 V, 100 V, 110 V, 230 V

Furthermore the power supply covers the following commonly used auxiliary voltages (among others in the UK) with limited tolerance ranges:

240 V AC with tolerance range between $-20\%/+15\%$

254 V AC with tolerance range between $-20\%/+10\%$

The permissible voltage deviations refer to the fixed aux. voltages.

6.1.1 Power supply **CMP1**

<i>Voltage ranges of power supply</i>	<i>Power consumption in idle state</i>	<i>Max. power consumption</i>
19 - 395 V DC	5 W	8 W
22 - 280 V AC (Frequency range: 40 - 70 Hz)	5 VA	8 VA

6.1.2 Power supply **CSP2**

Voltage supply *CSP2-F/L/T*

<i>Voltage ranges of power supply</i>	<i>Power consumption in idle state</i>	<i>Max. power consumption</i>
19 - 395 V DC	19 W	27 W
22 - 280 V AC (Frequency range: 40 - 70 Hz)	19 VA	27 VA

Buffering the power supply

Minimum buffering time: $t \geq 50 \text{ ms}$, to $U_e < U_{\text{emin}}$,

When a power supply failure occurs, the function of the device is guaranteed for at least 50 milliseconds.

6.6.8 Environmental tests

Classification

DIN EN 60068-1[03/95]	Climatic classification	10/055/56
DIN EN 60721-3-3[09/95]	Classification of ambient conditions	3K6/3B1/3C3/3S2/3M4

Test Ad: Cold

DIN EN 60068-2-1[03/95]	Temperature	-10°C/-25°C
	Duration of stress	16h

Test Bd: Dry heat

DIN EN 60068-2-2[08/94]	Temperature	55°C/70°C
	Relative humidity	<50%
	Duration of stress	72 h

Test Cab: Damp heat (steady state)

IEC 60068-2-78[08/01]	Temperature	40°C
	Relative humidity	93%
	Duration of stress	56

Test Dd: Damp heat (cyclic)

DIN IEC 60068-2-30 [09/86]	Temperature	55°C
	Relative humidity	95%
	Cycles (12 + 12 hours)	2

6.7 Dimensions and weights

Dimensions

Base unit CSP2-F/-L/-T25:	W 367,8 mm x H 263,9 mm x D 138,4 mm
Base unit CSP1-B:	W 368,0 mm x H 447,0 mm x D 155,0 mm
Operating panel CMP1:	W 307,0 mm x H 246,0 mm x D 55,0 mm

Weights (Net)

Base unit CSP2-F/-L:	6,5 kg
Base unit CSP2-T:	6,9 kg
Base unit CSP1-B:	13,0 kg
Operating panel CMP1:	2,8 kg

CAN communication cable

Length: 4 m

7 Order form

Base unit (single device) of Feeder protection and control system ¹		CSP2-		CC			
Current and voltage protection functions, measuring functions, monitoring functions, automatic reclosing, disturbance recording, programmable logic functions, control functions, up to 5 recognizable devices (display, wide range power supply: AC and DC Control (direct/indirect) of max. 3 switching elements – DC driven (1 CB/isolator/ earthing switch) F3 of max. 5 switching elements – DC driven (2 CBs/isolator/ earthing switch) F5							
Measuring Conventional transformer technology: Phase currents and earth current 1 A/5 A, voltage 100 V/110 V							
Communication without					00		
Type of protocol:	SCADA interface:				3F		
IEC 60870-5-103	fibre optic (FO) ² electrical: RS485				3W		
PROFIBUS DP	fibre optic (FO) ² electrical: RS485				PF PW		
MODBUS RTU ³	fibre optic (FO) ² electrical: RS485				MF MW		
DNP 3.0 ³	fibre optic (FO) ² electrical: RS485				DF DW		
Menu German English					G E		
Disturbance recording Standard extended non-volatile memory						* K	

* Please leave box empty if option is not required (no extra charge).

¹ the complete feeder protection and control system consists of **one** base unit (CSP) and **one** indication and operating unit (CMP).

² Wave length: 850 nm; phase diameter (core/sleeve): 62,5/125 µm multimode; plug type: type FH-ST, range: up to 2 km.

³ in preparation!

Indication and operating unit for protection and control systems		CMP1-	1	2	
Front plate IP 54; key switches, LC- Display, control buttons, wide range power supply: AC and DC					
Interfaces 2 x RS232 (front plate and rear) CAN-Bus (rear)					
Front plate design (Logo) Standard (SEG) OEM					0 1