WÖHRLE

DEVICE MANUAL

CIMO 9 Operating Panel

C 09

Manual order no.: T -C-02/

Device Manual

Guide for:	CIMO-9" Operating Panel (CB-09)
Order Code:	**TB-C-02/GB/2.0**
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Safety

Proper Use

CIMO monitor operating panel are high-performance, flexible and control-independent monitoring units designed for direct applications in industrial production and manufacturing equipment.

Among the special features exhibited by the CIMO system is the front panel that consists of an aluminum plate containing all operational elements and the filter screen. The entire front panel is covered with a durable polyester film that is resistant to many of the most commonly used industrial chemicals.

CIMO monitor operating panel are exclusively designed for display, monitoring and input.

For safety reasons, subsequent modifications to the devices by the purchaser are expressly prohibited!

Proper use also includes observance of our established guidelines for operation and shipping.

Safety Notes

All our products have been designed and manufactured in accordance with the most up to date state of the art and, when properly employed, are safe in all operations. There are, however, a number of items that must be observed:

Warning labels

Wöhrle devices are equipped with labels warning the user against contact with electrically conductive parts and against subjecting control components to static discharges. Please heed these labels.

Wöhrle assumes no liability for damage or injuries resulting from the improper use of its devices or if the devices are employed in a manner that is not in accordance with that described in the manual.

Accessories

All spare parts and accessories have been specially designed and manufactured for use with Wöhrle equipment. Spare parts and accessories not supplied by Wöhrle have not been tested by us and are therefore not approved. Wöhrle assumes no liability for damages resulting from the use of such parts.

Installation Notes

- Check that the circuit box or panel is designed to handle the expected mechanical load.
- Make sure there is an adequate amount of space between the back of the system and the housing (at least 50 mm).
- Tighten all connections in the system and make sure they are not subjected to strain.
- Make sure you are using the proper power supply.
- Do not install systems in cabinets where the system may be affected by nearby sources of strong electrical or magnetic fields (motors, rectifiers, etc.).
- Check the protection class and method of the cabinet, panel or housing. While the front of the system is equipped with IP 65 protection, the protection at the rear is significantly lower.

Note :

- For measurements in millimeters: 1 inch = 25.4 mm.

Device Overview

Front view

The entire front panel is covered with a durable polyester film that is resistant to many of the most commonly used industrial chemicals.

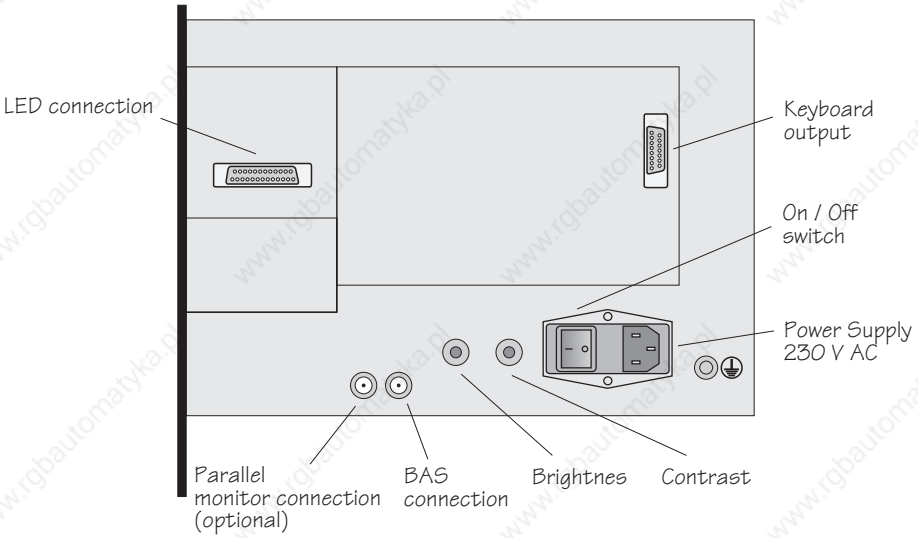
All keys are raised and have a discernible “breakpoint” when pressed, thus giving them the feel of a mechanical push-button.

Depending on the proposed application, there are 2 different types of device available:

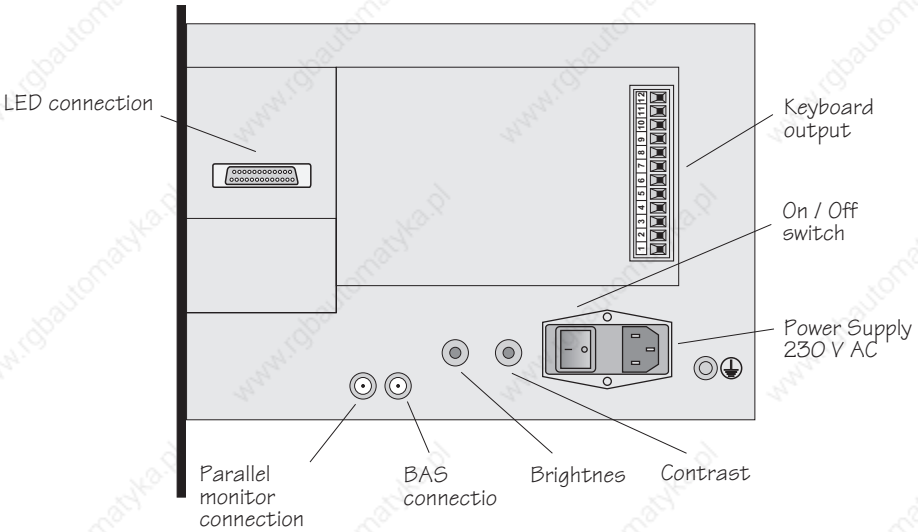
- CIMO 9” operating panel for connection to a Siemens CP526/27
  Order number: **CB-09/SK2L-304**
- CIMO 9” operating panel for connection to a Siemens WF470
  Order number: **CB-09/SK2L-303**

Side View

CP-operating panel (CB-09/SK2L-304)

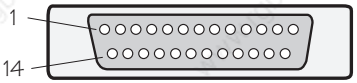


WF-operating panel (CB-09/SK2L-303)



Interface / Pin Assignments

LED-Selection



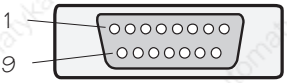
25pin sub-min-D male

Pin	Assignment
01	LED F9
02	LED F4
03	LED F10
04	LED F5
05	LED F11
06	LED F6
07	LED F12
08	LED F7
09	LED F13
10	LED F8
11	LED F14
12	LED F1
13	LED F15
14	LED F3
15	LED F2
16	LED F16
17-21	n.c.
22-25	GND

The LEDs integrated into the 16 soft keys can be accessed via digital SPS outputs. Connection is by means of an accessory board that is part of the standard delivery and that contains the required drop resistors.
The LEDs are supplied with 24 VDC power.

20 mA Serial Key Output Interface

(CP526/27 operating panel Only)



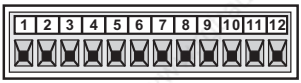
15 pin sub-min-D male

Pin	Assignment
01-03	n.c.
04	+24 V DC
05-08	n.c.
09	TxD -
10	GND
11-12	n.c.
13	TxD +
14-15	n.c.

Parallel Key Output Interface

(WF470 operating panel Only)

12pin screw down plug

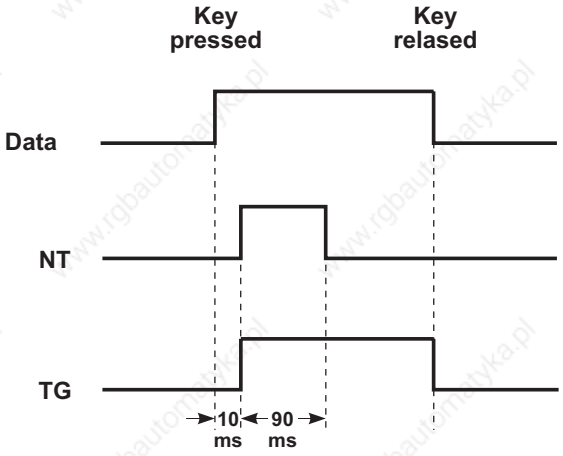


Pin	Assignment
01	GND
02	+24 V
03	D 0
04	D 1
05	D 2
06	D 3
07	D 4
08	D 5
09	D 6
10	D 7
11	NT
12	TG

Note:

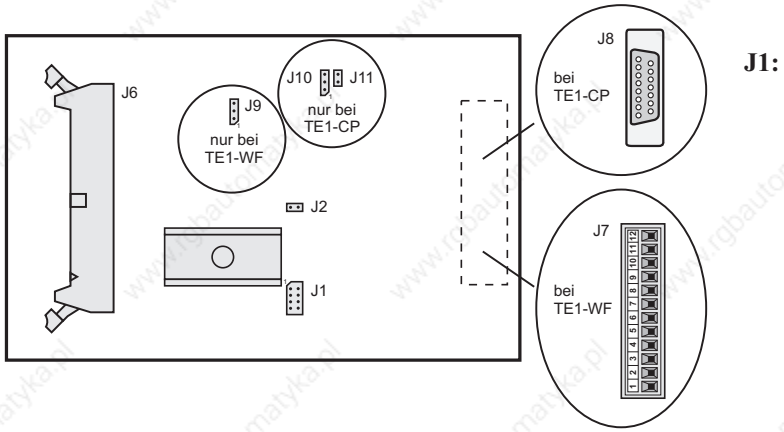
The TG signal (pin 12) must be on D7 for WF470 devices.
NT (pin11) and D7 (pin 10) are not used on WF470 devices.

Timing characteristics of the parallel interface



Key Encoder/Key Codes

Jumper description of key encoder TE1



J1:

Memory selection (Operating system and key code are on the same memory)

Pin 2-4 and Pin 5-7 bridged	→	27C64, 27C128 and 28C64
Pin 2-4 and Pin 3-5 bridged	→	27C256
Pin 4-6 and Pin 3-5 bridged	→	27C512
Pin 3-4 and Pin 5-7 bridged	→	28C256

J2: Key lock

Pin 1-2 bridged	→	all keys are locked

J9: TG signal (only at WF encoder)

Pin 1-2 bridged	→	low active
Pin 2-3 bridged	→	high active (factory setting)

J10: Interface (only at CP encoder)

Pin 1-2 bridged	→	active
Pin 2-3 bridged	→	passive (factory setting)

J11: Interface (only at CP encoder)

Pin 1-2 bridged	→	active
Pin 1-2 open	→	passive (factory setting)

J6: Matrix keyboard connection (connection of front panel keys)

J7/J8: Output interface (according to encoder type)

TE1-CP (J8)	→	15pin sub-min-D male
TE1-WF (J7)	→	12pin screw down plug

CIMO keyboard layout

Codes can be freely programmed via an EPROM or EEPROM, 2 levels per key (unshift/shift) and 1 ASCII character.

Standard code for CP operating panel

Operating keys

key	code	key	code	key	code
7	37	8	38	9	39
4	34	5	35	6	36
1	31	2	32	3	33
-	2D	0	30	.	2E
	95		92		94
	90		97		91
	9C		93		9D
	6C		9E		9E

Softkeys

key	code	key	code	key	code	key	code
F1	C0	F2	C1	F3	C2	F4	C3
F5	C4	F6	C5	F7	C6	F8	C7
F9	80	F10	81	F11	82	F12	83
F13	84	F14	85	F15	86	F16	87

Standard code for WF operating panel

Operating keys

key	code	key	code	key	code
7	29	8	2A	9	2B
4	39	5	3A	6	3B
1	49	2	4A	3	4B
-	59	0	5A	.	5B
	2C		3D		2D
	4C		4E		4D
	5C		3C		5D
	6C (acknowl.)		6D		6D

Softkeys

key	code	key	code	key	code	key	code
F1	01	F2	02	F3	03	F4	04
F5	05	F6	06	F7	07	F8	08
F9	11	F10	12	F11	13	F12	14
F13	15	F14	16	F15	17	F16	18

Monitor Adjustment

Note !

Adjustments may only be carried out by properly trained technicians !

All delivered systems have already been pre-adjusted to the corresponding connection assembly. Correct display is, however, dependent on:

- Cable lengths,
- Ambient condition, etc.

Should adjustments be necessary, proceed as follows:

Caution

– Exercise extreme caution when working inside the unit.
Monitors operate with high voltage (approx. 12,000 volts).

– Do not touch any conductors or connections.

– Use only insulated tools.

– Work at a safe location. Always work in pairs, with one technician watching the image while the other carries out the adjustments.

– When opening the unit, make sure no conducting parts fall into it.

– Always disconnect the unit from the power source before re-installing it.

Procedure:

1. Turn off power to the unit.
2. Remove the top cover panel.
3. Connect the video cable.
4. Turn power on.
5. Set the brightness control to one-half maximum.
6. Perform the necessary adjustments.
7. After completing the adjustment work, turn off power to the unit and re-install the top cover panel.

Horizontal frequency (1)

If horizontal adjustment is required, the unit should be returned to the manufacturer. (Any independent adjustments are made at the owner's risk.)

If the vertical lines are distorted, particularly at the upper screen border, or if the screen shows only horizontal lines, a horizontal frequency adjustment is required.

The adjuster is labeled "H.FRQ". The adjustment is correct when the vertical lines are straight.

Vertical frequency (2)

If the image rolls vertically up or down, the vertical frequency needs to be adjusted.

The adjuster is labeled "V.HOLD". (On the PCB the adjuster is incorrectly labeled "H.HOLD".)

During the adjustment, let the image roll down first, then turn the potentiometer until the image gradually moves upward to the required position. If the potentiometer is turned too far, the image will scroll upwards off the screen.

Image amplitude (3)

If the image is too large or too small in the vertical direction, use the "V.HEIGHT" adjuster to correct the problem.

Horizontal phase (4)

You can use this potentiometer to shift the image to the left or to the right.

The adjuster is labeled "H.PHASE".

Contrast setting (5)

If the video signal amplitude at the BAS input is too great, the video amplifier will become overloaded (distortion in areas of light/dark transition).

You can correct this problem with the "CONTR" potentiometer.

External brightness and contrast

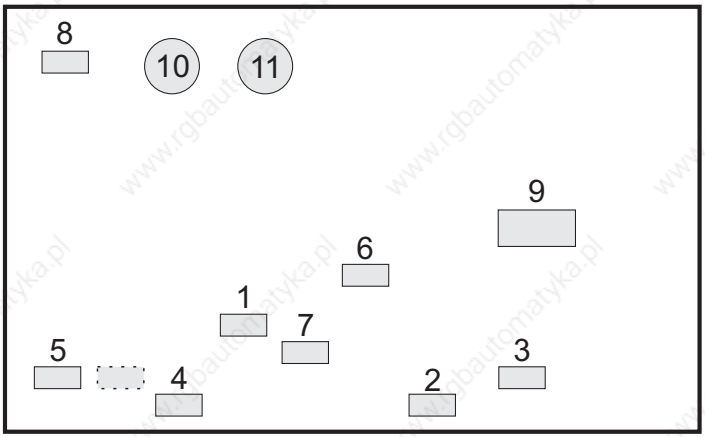
These adjusters are accessible from the outside of the unit, and are located on the unit's side panel.

Never turn the brightness and contrast controls to their maximum positions for longer periods of time, in order to extend the life of the picture tube.

Other adjusters

- Vertical linearity, “V.LIN”: (6)
- Vertical position, “V.SHIFT”: (7)
- Focus, “DY.FOCUS”: (8)
- Background brightness “SUB.BRIGHT”: (9)
- Horizontal width, “H.WIDTH”: (10)
- Horizontal linearity, “H.LIN”: (11)

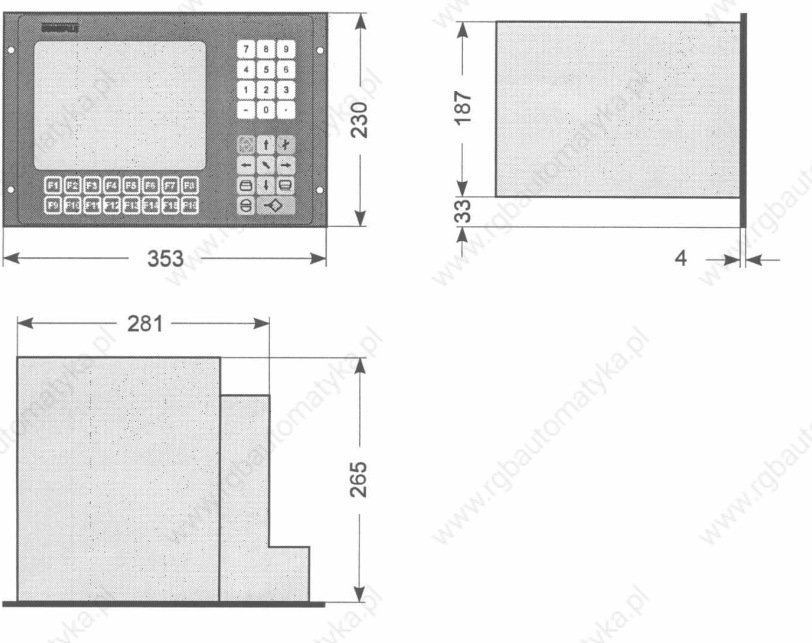
Location diagram:



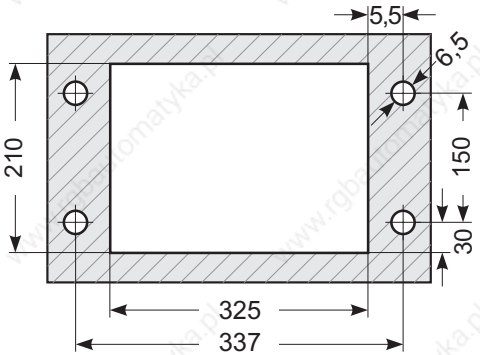
1	Horizontalfrequency	**7**	Vertical position
2	Verticalfrequency	**8**	Focus
3	Image amplitude	**9**	Background brightness
4	Horizontal phase	**10**	Horizontal width
5	Contrast	**11**	Horizontal linearity
6	Vertical linearity		

Dimensions

Dimensions in mm



Control panel section in mm



General tolerances (untoleranced dimensions) in accordance with DIN 7168 m.

Technical Data

CIMO CB-09	SK2L-304 for CP	SK2L-303 for WF
Monitor	Monochrome green	
Diagonal screen size	9"	
Resolution	Typ. 1200 x 280	
Monitor control		
Signal input	BAS / analog ; composite / video	
Band width	30 MHz (-3 dB)	
Interface	BNC	
Synchronization		
Horizontal frequency	15.625 KHz ±500 Hz	
Image frequency	40 to 61 Hz	
Monitor connection		
Video cable length	50 m, maximum	
Keyboard		
Operator keys	2 x 12; preprinted polyester film	
Softkeys	2 x 8 with LED (F1-F16); preprinted polyester film	
Keyboard encoder	TE1-CP	TE1-WF
Interface	Serial; TTY/20 mA active/passive jumper selectable	Parallel; (data output: D0-D7 control output: NT/TG)
Data output	———	24 V DC for digital PLC inputs
Output current	———	Max. 12 mA / per output (short-circuit proof)
Connector	15pin sub-min-D male	12pin screw down plug (single wire, 1.5 mm^2 max.)
Programming	Via EPROM or EEPROM, jumper selectable	
Programming level	2 levels per key (unshift/shift)	
Number of character	1 ASCII character per key	
Key lock	Via jumper	

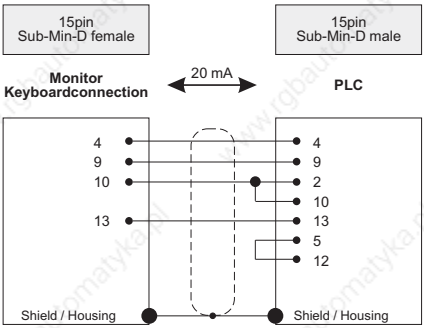
CIMO CB-09	SK2L-304 for CP	SK2L-303 for WF
Device technology		
Power supply (Monitor)	230 V AC in accord. with IEC 38 (115 V avaiable)	
Power supply (Keyboard)	20 V DC to 30 V DC (via PLC)	
Unit safety	T 1 A fuse	
Power consumption	20 Watts	
Protection method when installed	IP 65 in accord. with DIN 40050	
Operating temperature range	0 °C to +50 °C in accord. with DIN 40040, 10 to 95 % relative humidity, non-condensing	
Storage / shipping temperature	-10 °C to +60 °C in accord. with DIN 40040	
Weight	Approx. 5,3 kg	
Front panel	Aluminium with polyester film, black	
Housing	Full metal, sealed	
Dimensions in mm	W 353 x H 230 x D 265	
Connection type (power supply)	Via cold device cable	

The above technical data apply to the standard configuration. Your system may be equipped with additional options.
We reserve the right to make technical changes at any time and without prior notification.

Accessories/Spare Parts

You can order accessories and spare parts by Wöhrle.

Article	Order no.:
Connecting cable for CP controls	
Coaxial cable with 2 BNC connectors, from CIMO to controller, 5 m *	DK-BNC/005
Single-lead video cable from CIMO to CP 526/27/28, 5 m *	DK-CP526/005
Connecting cable between CIMO keyboard interface and CP keyboard interface, 5 m *	DK-TE1-CP526/005



Connecting cable for WF controls	
Coaxial cable with 2 BNC connectors, from CIMO to controller, 5 m *	DK-BNC/005
Single-lead video cable, from CIMO to WF 470, 5 m *	DK-WF470/005
Adapter cable from WF connecting cable to controller, 0.15 m	DK-WF470/ADA015

** Other lengths are indicated by the 3-digit code* *005 = 3-digit code*

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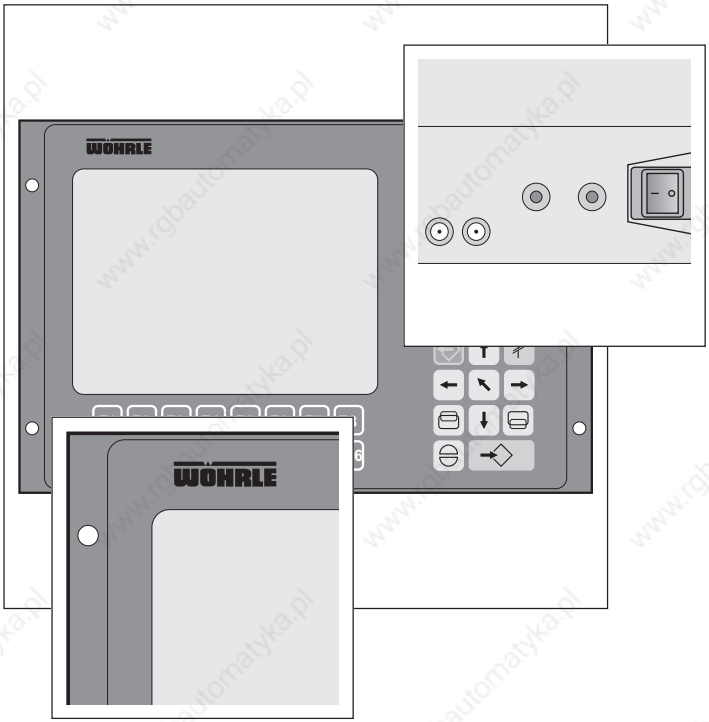

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