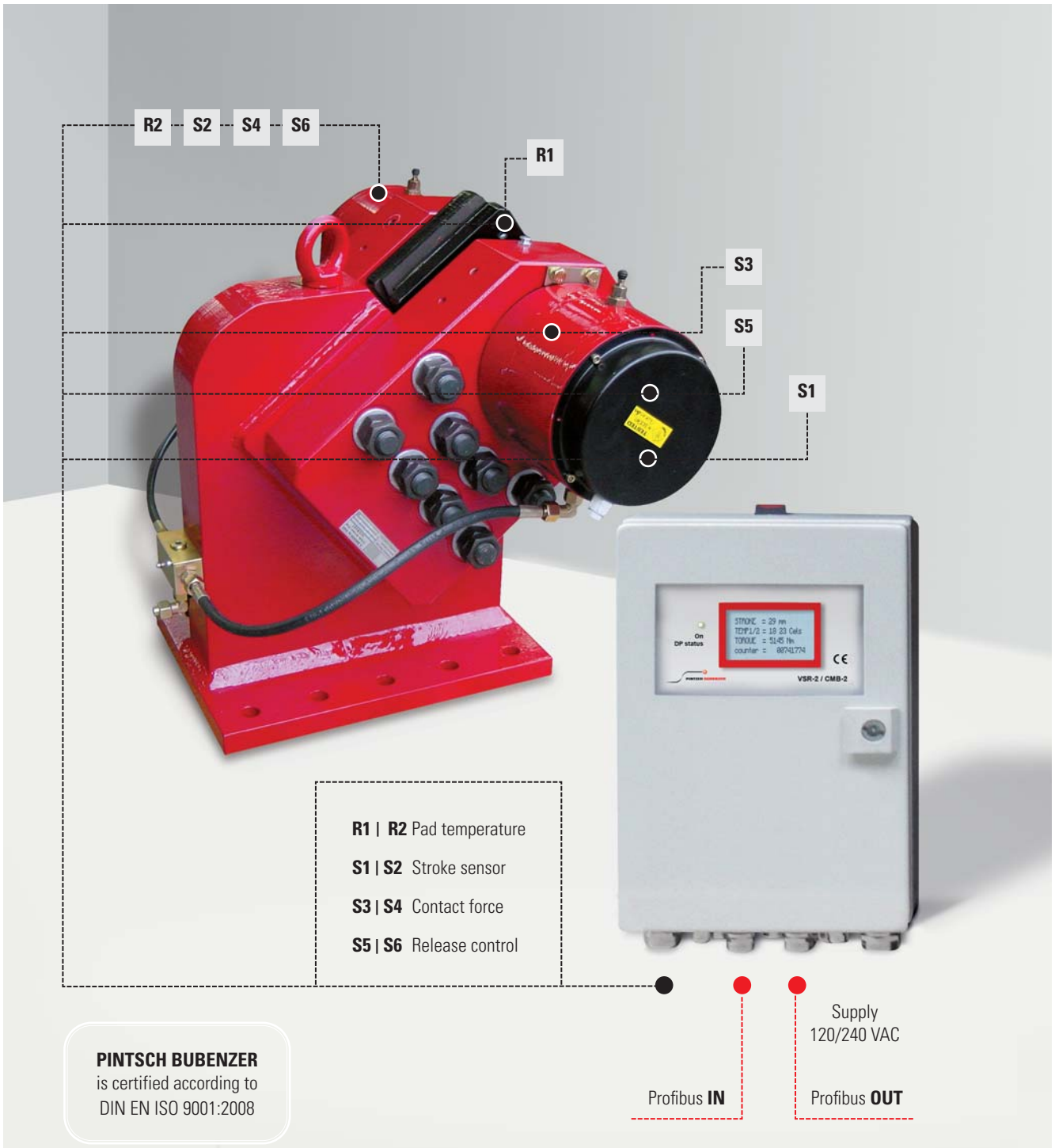
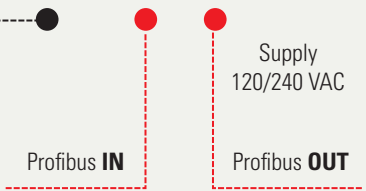


# Monitoring System CMB2-SF



- R1 | R2** Pad temperature
- S1 | S2** Stroke sensor
- S3 | S4** Contact force
- S5 | S6** Release control

**PINTSCH BUBENZER**  
is certified according to  
DIN EN ISO 9001:2008



## Visual indication of

<p><b>Cylinder stroke</b> &lt; 2,5 mm</p>	<p><b>Maximum brake pad temperature</b></p>	<p><b>Air gap difference between disc and pad surface by measuring the temperature difference between pads caused by unilateral pad rubbing</b></p>	<p><b>Contact force</b></p>
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# Description CMB2-SF



## Main Features

Industrial display with 4 rows of 20 characters for indication of measurement data and error messages

High ambient temperature range – 20°C.....+70°C (-4°F.....158°F)

Protection class IP66

Internal keypad for parameter change

Up to 5 m cable length from sensor to electronic box.

Brake operation cycle counter

Supply voltage selection switch 115/230 V AC

Profibus connection. All scaled measure signals and error bits are transferred by bus system to the main control PLC. No expensive analogue inputs in customers PLC are required!

## Parts of the system

**Supply voltage** The electronic unit can be connected directly to 110-240 V AC (50/60 Hz) supply voltage. The internal voltage selector switch must be set by the user to the corresponding position 115 or 230 V

**Display** All measured analogue and digital signals and error messages are shown on the display in English language. Other languages are available on request. The display is readable under direct sunshine (outdoor and container crane applications) and has a LED backlight for use in a dark environment, such as steel mills.

**Keypad** With the internal key pad, the user can adjust parameters such as changing the temperature display from Celsius (°C) to Fahrenheit (°F) or setting of the Profibus address.

**Reset button** The LED pushbutton on top of the electronic box indicates that the brake is outside its normal operating parameters by a flashing red light. When the problem on the brake is solved, the status of the CMB2-SF can be reset by pushing the button. The unit cannot be reset until the adjustments are made and the problem solved.

**Pad temperature sensor** A pair of Pt100 sensors (R1, R2) measure the temperature of each brake pad. If the temperature is too high, or unequal between left, or right hand side the unit generates a signal that can be sensed by the main control PLC to warn the operator that attention is required.

**Contact force sensor** A load cell located in each brake cylinder (S3 S4) measures the contact force of the spring pack. This signal is used to detect a spring failure or malfunction of the hydraulic system.

**Stroke sensor** These analogue sensors (S1, S2) measure the stroke of the piston. If the rated stroke of 2 mm/side increases beyond the maximum value due to pad wear. If the value is higher than 2.5 mm, the customer should readjust the stroke back to 2.0 mm in accordance with the manual. Failure to do so can result in a reduced braking performance. Again a signal bit is set to flag the problem to the control PLC.

**Proximity switch release control** These 2 switches (S5 S6) are independent from the CMB2-SF and have to be connected directly to the main control PLC to be active.

**Relay contact** A dry contact (max 250 V 2 A) is connected to terminals 21/22. It is closed in normal status of the CMB2 and open, if the system is in error mode, or switched off. If no Profi-bus is available, this contact can be connected to main control PLC input, to give a common error signal.

**Profibus** All scaled measured data and warning signals are transferred by the Profibus-DP slave port to the main control PLC. No expensive analogue inputs (6 pcs. per brake) are required in PLC. The address of the DP slave can be easily set in the unit by a parameter change in the software. Up to 126 brakes can be connected to one Profibus master.

## Options

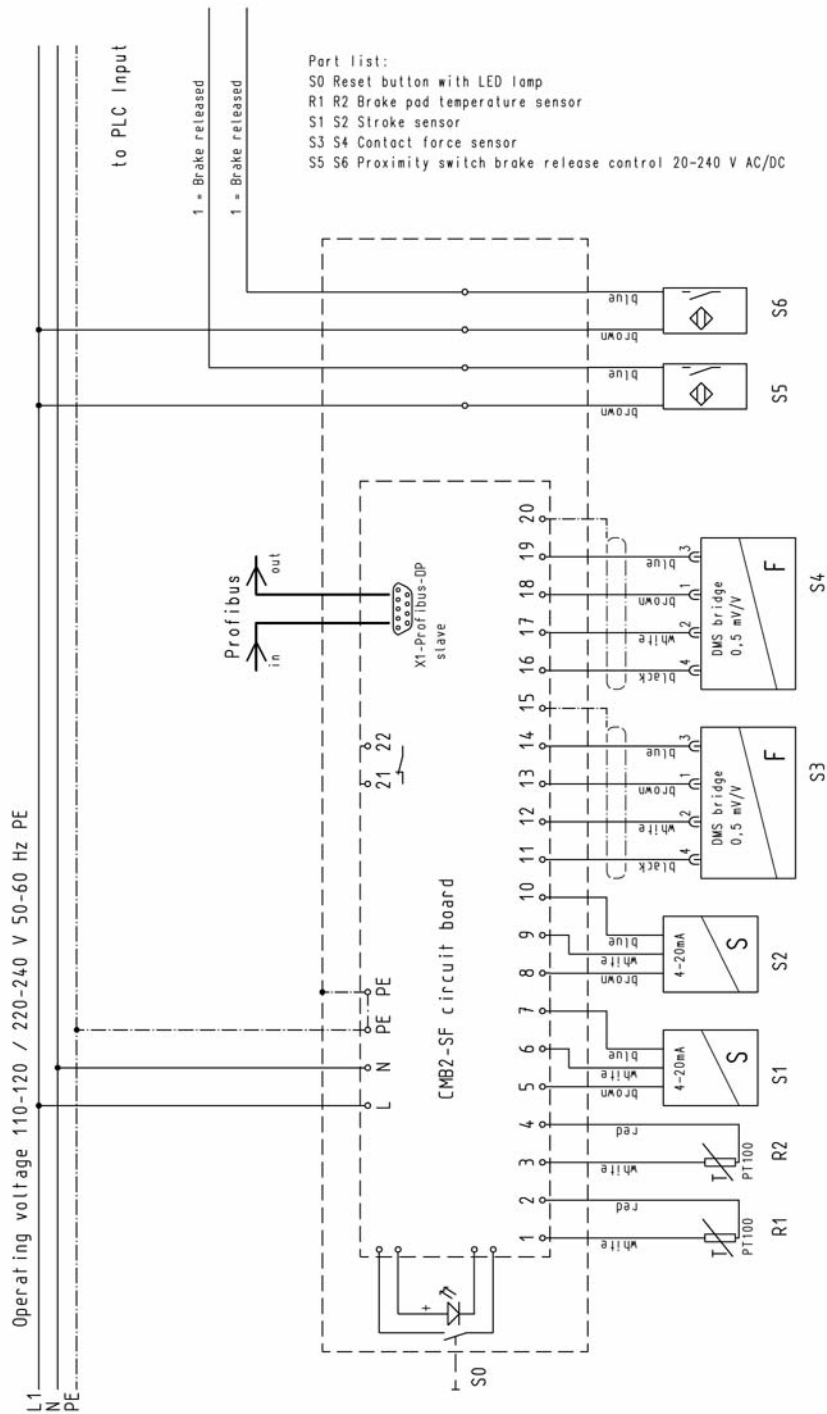
Stainless steel electronic box IP66 for outdoor use

# Monitoring System CMB2-SF

Dimensions and technical data



Rev. 12-06

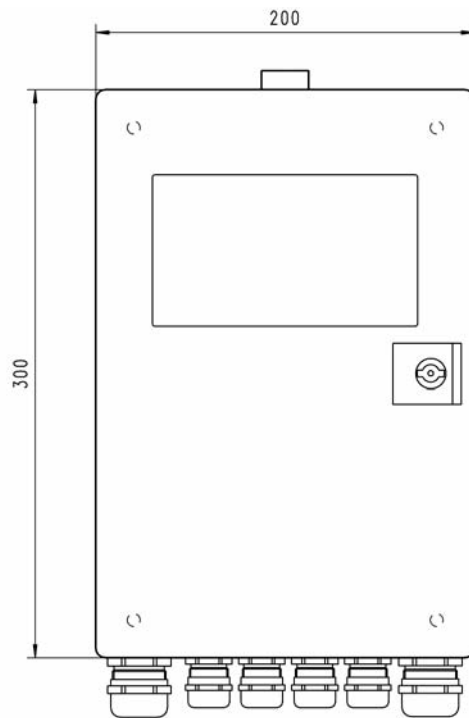


# Monitoring System CMB2-SF

Dimensions and technical data

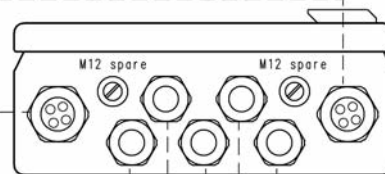


Rev. 09-02



### Cable glands wired by PB:

- M25: Stroke , Force, Temperature, Release control left side
- M25: Stroke , Force, Temperature, Release control right side



### Cable glands free for customer:

- M20: Profibus In, max cable diameter 13 mm
- M20: Profibus Out, max cable diameter 13 mm
- M20: Supply voltage, max cable diameter 13 mm
- M20: Signals to crane, max cable diameter 13 mm
- M20: Release control, max cable diameter 13 mm