CC120

INSTALLATION MANUAL

COUNTALINE

ELECTRONIC COUNTERS

rhomberg bräsler

guarantee

guarantee

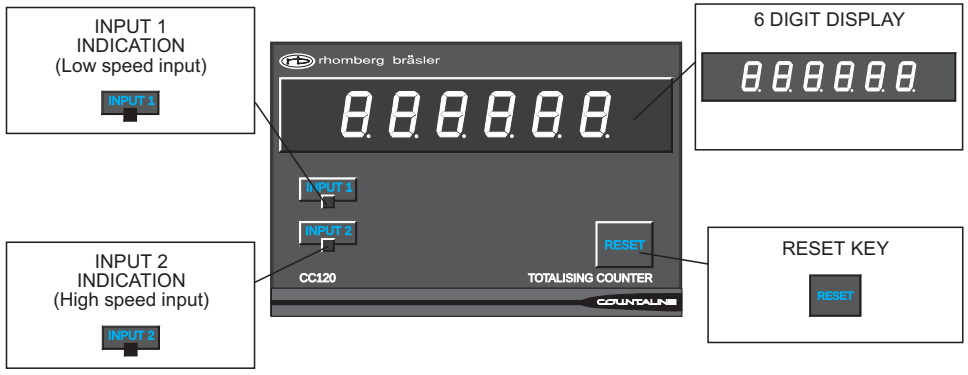
guarantee

12 months

Congratulations on the purchase of this new product. Special care with the design, workmanship and choice of materials has been taken to ensure reliable performance.

Each product is stringently tested twice before leaving our factory. Therefore, our products are guaranteed for a period of 12 (twelve) months from date of purchase. This guarantee is valid for defects arising from failure during operation under specified conditions. Our company does not accept liability for any consequential damages or losses arising from product malfunction.

front panel



contents

introduction

the CC120

The COUNTALINE CC120 is a versatile 6 digit totalising counter incorporating the latest microprocessor technology and is designed to be panel mounted.
The CC120 has multiple inputs that are available for direct connection to a variety of sensor types e.g. DC (NPN/PNP), NAMUR or potential-free switches. Both high and low speed inputs are available for simultaneous connection of various sensor combinations, depending on the specific application.

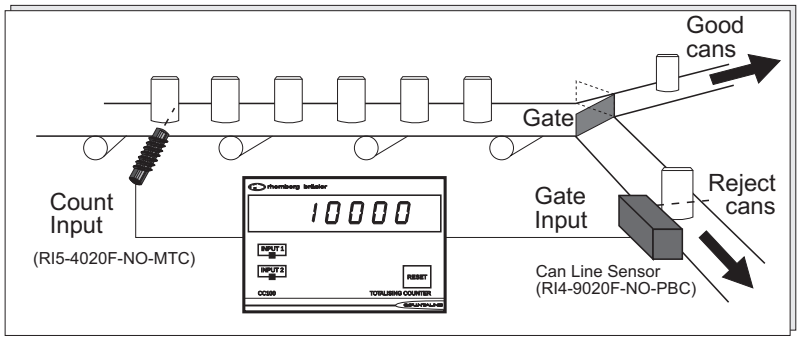


Figure 1 : Simplified Functional Diagram

key features

- ❒ Large 6-digit LED display with leading zero suppression
- ❒ High speed count input (5 kHz) with positive or negative active edge (order option)
- ❒ Independent low speed count input (30Hz) suitable for limit switches
- ❒ Both the high and low speed inputs can count simultaneously
- ❒ Error message for input overspeed indication (both high and low inputs)
- ❒ LED indication for both count inputs
- ❒ Error message for indication of a power supply interruption less than 0,3 seconds
- ❒ Reset via pushbutton on front panel or via external switch or NPN sensor
- ❒ Gate input for ignoring high speed input pulses
- ❒ DC (NPN or PNP) or NAMUR sensor compatible high speed and gate inputs (order option)
- ❒ Internal sensor power supply for direct connection of all sensors

installation

Panel cut-out

Cut or punch out a panel as shown in Figure 2. Ideal panel thickness is

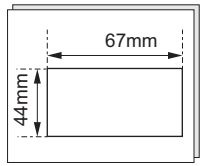


Figure 2 : Panel Cut-out Dimensions

Mounting

Refer to Figure 3. Insert the CC120 into the cut-out. Slide the retaining clip (1) over the case from the rear until the clip presses firmly against the panel. Secure the clip using the screws

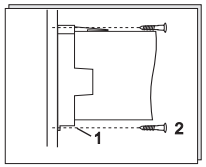


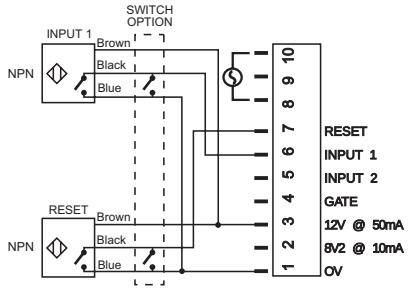
Figure 3 : Mounting Method

wiring and input connection

Low Speed Counting

CC120 DP/DN or CC120 NP/NN

INPUT 1 - Low speed counting

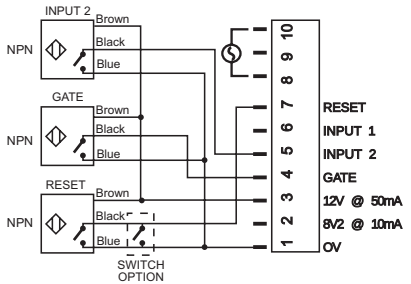


wiring and input connection

High Speed Counting

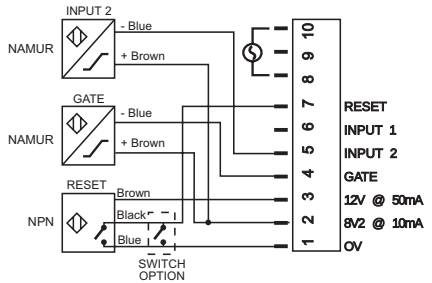
CC120 DP or CC120 DN

INPUT 2 - High Speed Input
(NPN/PNP Sensor)



CC120 NP or CC120 NN

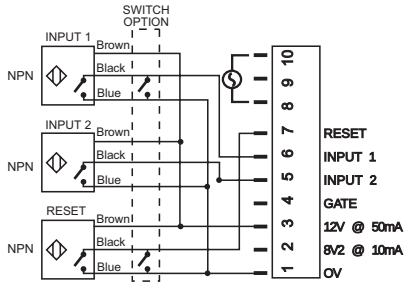
INPUT 2 - High Speed Input
(Namur Sensor)



High and Low Speed Counting

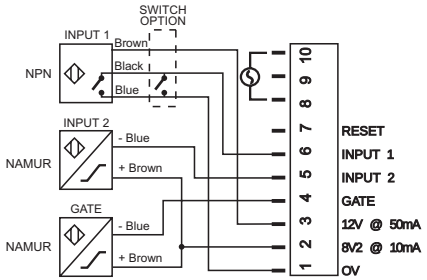
CC120 DP or CC120 DN

INPUT 1 - Low speed Input
(NPN Sensor or Switch Input)
INPUT 2 - High Speed Input
(NPN/PNP Sensor)



CC120 NP or CC120 NN

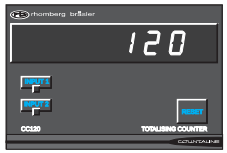
INPUT 1 - Low Speed Input
(NPN Sensor or Switch Input)
INPUT 2 - High Speed Input
(Namur Sensor)



set-up procedure

❒ Step 1: Apply power to the CC120

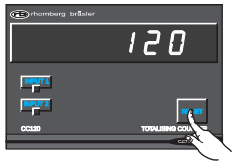
On power-up, the previous count value saved during power-down will be displayed with all leading zeros suppressed. Counting continues from this value unless the unit is reset.



Apply Power

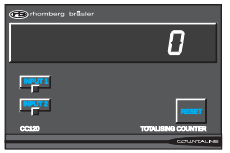
❒ Step 2: Resetting the CC120

The displayed count value can be reset to



Press reset key and release it within 2

RESET



PV is reset to zero.

detailed function description

Count Inputs

❒ Low Speed Input (Input 1)

The low speed input is suitable for frequencies up to 30Hz. This input has been designed to ignore contact bounce from mechanical switches and is suitable for potential free contact type sensors. Should the input frequency exceed 30Hz, an error message `0-SPd1' will be intermittently displayed while the unit continues

Clear error message and reset to zero

OR

Press reset key and

RESET

Count value resets to zero

Clear error message and retain count value

Press reset key

0-SPd1

RESET

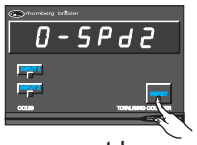
Count value remains while

detailed function description

❒ High Speed Input (Input 2)

The high speed input is suitable for frequencies up to 5kHz. Should the input frequency exceed 5kHz an error message `0-SPd2' will be intermittently displayed while the unit continues counting. This warns the user of possible

Clear error message and reset to zero



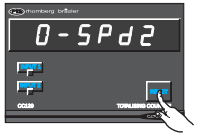
OR

Press reset key and

RESET

Count value resets to zero and

Clear error message and retain count value



Press reset key

0-SPd2

RESET

Count value remains while

detailed function description

Control Inputs

❒ Reset Input

The reset function is used either to reset the PV to zero or to clear any error messages (as described in `Count Input'). The counter can be reset by either depressing the reset key on the front panel or by activating the reset input (i.e.

❒ Gate

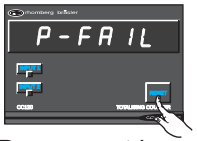
The gate input prevents the high speed count input (Input 2) from incrementing the count value as long as the gate is active.

detailed function description

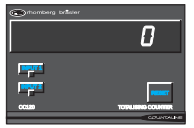
Power Failure

In the event of any power failure that lasts for longer than 0,3 seconds, the displayed count value will be saved to the non-volatile (back-up) memory. For power-failures shorter than 0,3 seconds an error message `P-FAIL' will be intermittently displayed while the unit continues counting. This warns the user of possible miscounts. At this

Clear error message and reset to zero



RESET

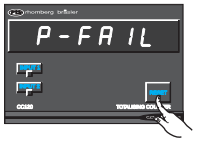


Press reset key and

Count value resets to zero and

OR

Clear error message and retain count value



RESET

Press reset key

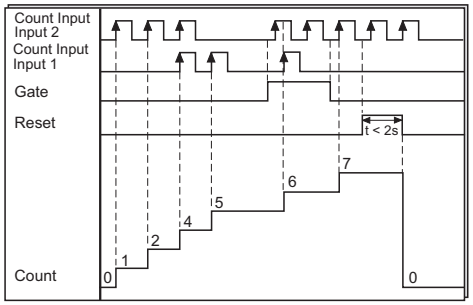
P-FA IL

Count value remains while

error messages

MESSAGE	CONDITION	REMEDY
0-SPd1	COUNT FREQUENCY EXCEEDED ON LOW SPEED INPUT	RESET FOR < 3 SECONDS
0-SPd2	COUNT FREQUENCY EXCEEDED ON HIGH SPEED INPUT	RESET FOR < 3 SECONDS
P-FA IL	POWER INTERRUPTION LESS THAN 0,3 SECONDS	RESET FOR < 3 SECONDS

operational diagrams



specifications

❒ General Specifications

Power Supply Tolerance	±15%
Power Consumption	<6VA
Operating Temperature	0-55°C
Protection Class (Front Panel)	IP54
Protection Class (Rear)	IP30

❒ Input Specifications

Input	Maximum Frequency	Minimum Pulse Width
Low Speed (Input 1)	30Hz	0,0167sec
High Speed (Input 2)	5kHz	100µsec
Gate	1kHz	500µsec
Reset	1kHz	500µsec

❒ Sensor Interface

Internal sensor power supply
NAMUR sensor option: 8.2V DC / 10mA
NPN or PNP sensor (i.e. DC option): 12V DC / 50mA
Maximum NPN sensor saturation voltage: 2V DC (high speed count and gate inputs)
2.5V DC (low speed count input)
Maximum PNP sensor saturation voltage: 2V DC (high speed count and gate inputs)