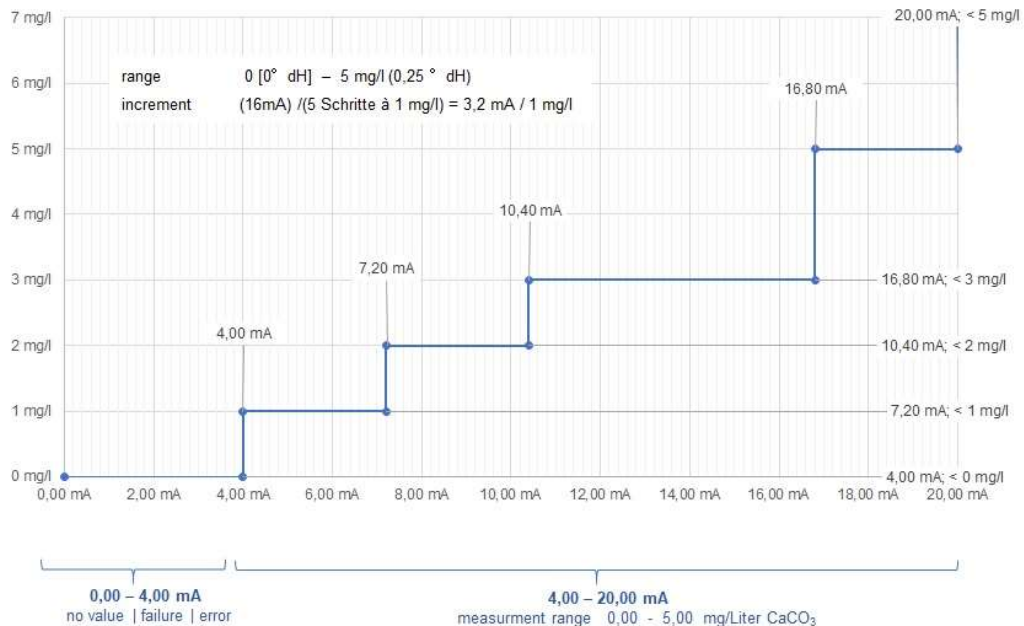


- The current value of the conversion box 0/4-20 mA current interface varies depending on the result of the Colormetry monitoring result.
- if the measured value is 0 mg / L the output is 4 mA.
 - if the measured value is 5 mg / L or more the output is 20 mA.
 - when NO MONITORING (invalid measurement) or device error occurs the output is 0 mA.

Colormetry CMU 324 HE | current loop interface



Intended use of the current interface in combination with an external controller (e.g. PLC)

→ the Colormetry device proceeds dependent on the parameter settings 1, 2, or 3 MONITORINGS in a MONITORING INTERVAL; INTERVALs can be set in a range of 30 to 240 min. in increments of 30 min

- if remote RELEASE-signal is connected
- |→ if the RELEASE of a remote signal is ENABLED at the beginning of a MONITORING INTERVAL, the first MONITORING starts; eventual further MONITORINGS start only, if the RELEASE still is ACTIVE/ENABLED
 - |→ if the RELEASE of a remote signal is DISABLED at the beginning of a MONITORING INTERVAL, MONITORINGS not starts; INTERVAL TIME keeps running in background

trigger-mode:

- in Colormetry INTERVAL TIME can be set ZERO
 - |→ in that case the monitoring device carries out one MONITORING after the other; but MONITORING RESULT is issued only if the MONITORING is CUT OFF by a remote input [RELEASE DISABLED]
 - |→ by cutting off the RELEASE [STAND BY-mode] during a MONITORING this analysis will be carried out to the end and a new MONITORING RESULT will be issued
- Using this function INTERVALs and MONITORINGS can be triggered by an external controller

IMPORTANT

the remote RELEASE signal must be ENABLED until the END of WASHING phase of the NMONITORING INTERVAL, so that the Colormetry issues a new MONITORING RESULT

- ⇨ please refer to the graphic below
- during the WASHING phase the output “water passing” on terminal clamps 5+6 of the Colormetry device is ACTIVE |→ feedback to PLC

Relationship between MONITORING RESULT and remote RELEASE signals

When the Colormetry starts MONITORING by the request of an external RELEASE signal, but the external remote signal is CUT OFF during the WASHING phase of a MONITORING INTERVAL, the result display varies depending on the MONITORING RESULT.

Example ① When concentration abnormalities are monitored (which means monitoring hard water)
→ Because the RELEASE signal is interrupted during the WASHING phase and the water in the monitoring tank inside the Colormetry may be stagnant, this MONITORING is INVALID.
Result: No alarm, No communication with the conversion box |→ the last result is displayed in the Colormetry device

Example ② If the device error (poor chemical injection, etc.) occurs during the self-check
→ Because the RELEASE signal is interrupted during the WASHING phase and the water in the monitoring tank inside the Colormetry may be stagnant, this MONITORING is INVALID.
Result: No alarm, No communication with the conversion box |→ the last result is displayed in the Colormetry device

Example ③ When soft water of applicable range is monitored
→ Even though the RELEASE signal is interrupted during the WASHING phase, if the monitored concentration is under the applicable range, this MONITORING is VALID.
Result: Monitoring result recorded, Communication On |→ the current monitoring result replaces the last MONITORING RESULT

If problem is no communication between the Colorimetry and the conversion box.

- ▶ It is because that the external RELEASE signal (DIO) of the conversion box is turned OFF after the MONITORING STARTs as described above, so the Colorimetry determines that the MONITORING is INVALID and CUT OFF the communication.
This external RELEASE signal must continue until the solenoid valve for water supply in the Colorimetry is closed.
- ⇒ Set the RELEASE signal does not turn OFF.
 - During the WASHING phase the output “water passing” on terminal clamps 5+6 of the Colormetry device is active |→ feedback to PLC

For testing purposes, verify the operation under following conditions.

<Conversion box settings>

Mode setting:	mode MIURA stand alone
Input voltage:	AC100V ... AC240V (connected from outlet)
Output voltage:	DC24V (connected to Colormetry CMU)
Connector X3:	Connected as specified in the conversion box specification 7.5.3
Digital input X2S1-S2:	Connect a manual switch between Signal DIO and GND

|→ self-check with hard water
|→ automatic monitoring
|→ NO TURNING OFF the RELEASE signal until the END of MONITORING *)

→ display: 5 mg / L

→ analog current: 20 mA

*) MONITORING VALID, record, communication ON

|→ self-check with hard water
|→ automatic monitoring
|→ TURN OFF the RELEASE signal immediately after start MONITORING **)

→ display: previous MONITORING RESULT

→ analog current: previous output value

**) MONITORING is INVALID, no record, no communication.

Setting Item if Colormetry is triggered by a remote signal e.g. PLC-output

S Intvl	000 min	interval time is set ZERO
S Rte sgl	On	device is ENABLED if remote RELEASE signal is turned ON
S Alarm Inc No:	1	ONE monitoring is performed per interval
S Alarm Det No.	1	if monitoring result becomes concentration anomaly, alarm is issued after the FIRST interval

The example operation with the above settings:

- ▶ The alarm output (ON / OFF) at the time of concentration anomaly changes depending on whether or not the WASHING process has ended when the remote RELEASE signal turns ON → OFF.
 - If the RELEASE signal turns from ON to OFF **during** the WASHING process and the concentration value becomes ANOMALY in the MONITORING process: → the measured value becomes **INVALID** and the previous result is displayed.
 - If the RELEASE signal turns from ON to OFF **after** the WASHING process has ended, and the concentration value become ANOMALY in the MONITORING process: → the "CONCENTRATION ANOMALY" displayed and the ALARM is issued

