Level Pressure Flow Temperature Liquid Analysis Registration Systems Components Services Solutions

Operating Instructions

Stamolys CA71MN

Analyzer for Photometric Determination of Manganese

BA363C/07/en/10.06
51512330

Valid as of:
Software version 5.9

Endress+Hauser

People for Process Automation

4.5 Post-connection check

Carry out the following checks after electrical connection:

Device status and specifications	Note
Is the analyzer or cable externally undamaged?	Visual inspection

Electrical connection	Note
Does the supply voltage correspond to the data on the nameplate?	230 V AC / 50 Hz 115 V AC / 60 Hz
Are current outputs screened and connected?	
Are the mounted cables relieved of tension?	
Cable type properly disconnected?	Guide power supply and signal lines separate over the entire travel distance. Separate cable channels are ideal.
Cable routing without scuffing or cross-overs?	
Are power supply and signal lines connected correctly according to wiring diagram?	
Are all screw terminals tightened?	
Are all cable entries mounted, tightened and leak-resistant?	
Interference suppressor at the analogue output?	
Current output simulation	See procedure below

Current output simulation:

1. Hold both arrow keys down (see "Display and operating elements" chapter) and connect the analyzer to the mains or switch the mains switch on (if available). Wait until the display "0 mA" appears.
2. Check on your PLC, PCS or you data logger whether the current value is the same.
3. Press the E key. Browse to the next current values (4, 12, 20 mA, depending on the setting).
4. Check that the respective current values are also on your PLC, PCS or your data logger.
5. If the values are not there, check the terminal assignment for analogue output 1 or 2.

5 Operation

5.1 Operation and commissioning

The following chapters provide you with information on the analyzer's operating elements and explain how to make settings.
In chapter "Commissioning" you will find the procedure for initial start-up and for daily analyzer operation.

5.2 Display and operating elements

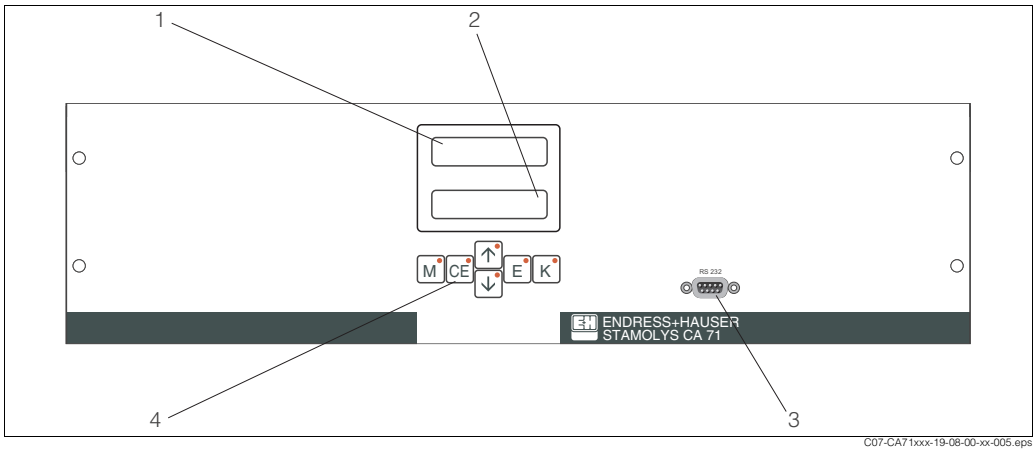

Fig. 13: CA 71 display and operating elements

1 LED (measured value)
2 LC display (measured value and status)
3 Serial interface RS 232
4 Operating keys and control LEDs

5.3 Local operation

The operating keys and the integrated indicator LEDs have the following functions:

Key	Key function	Indicator LED function
M	– "Auto measuring" option – back to the main menu from all sub-menus	Alarm value 1 exceeded
CE	– backwards in the sub-menu (horizontal, see Appendix,)	Alarm value 2 exceeded
↑	– backwards in the main menu (vertical) – Increase value	Measuring range exceeded
↓	– forwards in the main menu (vertical) – Reduce value	Measuring range undershot
E	– Select option – Adopt value, forwards in the sub-menu (horizontal)	Retrieve error message
K	– Selection in the sub-menu	unassigned

5.3.1 Main menu

Access the main menu by holding down the [M] key until “AUTO MEASURING” is displayed.
For the main menu options and information about them, please see the following table.

Selection	Display	Info
AUTO MEASURING	AUTO MEASURING	Calibration, measurement, flushing time-controlled actions
PARAMETER ENTRY	PARAMETER ENTRY	Default settings for measuring ranges, alarm values, calibration, flushing
CONFIGURATION	CONFIGURATION	Basic settings such as parameters, measuring units, arrangement of analog outputs and alarm values (NO, NC), date, time, offset values
LANGUAGE	LANGUAGE	Selecting menu language
ERROR DISPLAY	ERROR DISPLAY	Displaying error messages
SERVICE	SERVICE	Manually switching valves and pumps
DATA MEMORY 1	DATA MEMORY 1	Last 1024 measured values channel 1
DATA MEMORY 2 (Two-channel version only)	DATA MEMORY 2	Last 1024 measured values channel 2

5.3.2 AUTO MEASURING

The actions "calibration", "measuring" and "flushing" are triggered by time-control.
The settings for these actions are made in the "PARAMETER ENTRY" menu.
The respective action is displayed in the LC display. The most recently registered concentration value is displayed until the end of the next measurement.

Otherwise, "wait" is displayed when
- the time of the first measurement has not yet been reached or
- the measuring interval has not yet expired.

Note!
"Measuring" flashes when the analyzer is ready for the next measurement but has not yet received the enable signal from the sample collector or the sample conditioning unit.

11.2 Ordering forms

11.2.1 Reagents and accessories

To Fax No:	
Fax for ordering reagents	
To (address of your sales center)	**From** (billing address) Company: Re: Street: Zip code / Town: Fax / Telephone:
Address for delivery (if not the above address) Company / Name: Street / Zip code / Town:	

Quantity	**Article**	**Designation**
	CAV740-1A (MN-A/B)	Maintenance kit: ■ Pump hoses ■ Hose connector ...

Quantity	**Order No.**	**Designation**
	CAY843-V10AAE	Reagent set, 1 l MN1+MN2+MN3 each
	CAY843-V10AAH	Reagent set, inactive, 1 l MN1+MN2+MN3 each
	CAY844-V10AAE	Cleaner, 1 l
	CAY845-V10C10AAE	Standard 0.1 mg/l Mn
	CAY845-V10C50AAE	Standard 0.5 mg/l Mn

Chemicals for ultrafiltration		
Quantity	**Order No.**	**Designation**
	CAY746-V01AAE	Alkaline cleaner P3-Ultrasil 130, 100 ml
	CAY746-V10AAE	Alkaline cleaner P3-Ultrasil 130, 1 l
	CAY746-V50AAE	Alkaline cleaner P3-Ultrasil T130, 5 l
	CAY747-V01AAE	Acidic cleaner P3-Ultrasil 130, 100 ml
	CAY747-V10AAE	Acidic cleaner P3-Ultrasil 130, 1 l
	CAY747-V50AAE	Acidic cleaner P3-Ultrasil 130, 5 l

Place Date Stamp/Signature

Earliest delivery one week after order received. Delivery is unpaid.

11.2.2 Ordering wear parts

To Fax No:	
Fax for ordering wear parts	
To (address of your sales center)	**From** (billing address) Company: Re: Street: Zip code / Town: Fax / Telephone:
Address for delivery (if not the above address) Company / Name: Street / Zip code / Town:	

Quantity	Item	Pieces/pack.	Designation	Order number
	110	12	Tygon pump hose, yellow/blue	51506434
	111	12	Tygon pump hose, black/black	51506437
	113	12	Tygon pump hose, violet/white	51508945
	120	15 m	Norprene hose, ID 1.6 mm	51504116
	121	7.5 m	C-Flex hose, ID 3.2 mm (permeate inlet and overflow with sample collector.)	51504114
	122	7.5 m	C-Flex hose, ID 6.4 mm	51504115
	123	1 m (3.28 ft)	C-Flex hose, ID 1.5 mm	51512535
	130	10	Hose connector, 1.6 mm x 1.6 mm	51506495
	131	10	T-hose connector, 1.6 mm x 1.6 mm x 1.6 mm	51506490
	132	10	Hose connector 3.2 mm x 3.2 mm	51506491
		10	T-hose connector 6.4 mm x 6.4 mm x 6.4 mm	51506493
		10	Hose connector 6.4 mm x 6.4 mm	51506494
	133	10	Hose connector 3.2 mm x 6.4 mm	51506492
	134	10	Y-hose connector 1.6 mm x 1.6 mm x 1.6 mm	51512096
	135	10	Connection nipples for sample collector (10 piece)	51512099
	144	1	Photometer cell	51505778
	155	1	Valve set for two-channel version	51512235
	160	1	Roller head with holder for hose pump	51512085
	161	1	Hose box for pump	51512086
	170	1	Collecting vessel with level monitoring	51512089
	171	1	Collecting vessel without level monitoring	51512088
	200	1	Photometer type[1]:	
		1	Silicone spray	51504155
		1	Cleaning injector	51503943
		1	CA71 kit, complete valve, for one-channel version	51512100
		2	CA71 kit, complete valve set, for two-channel version	51512234
		1	CA71 kit, level monitoring, retrofitting for collecting vessel	71023419

1) Please take the designation and the Order No. from the "Troubleshooting/Spare parts" section and enter them here!

Place Date Stamp/Signature

Earliest delivery one week after order received. Delivery is unpaid.

11.3 Analyzer settings

Place:	
Type:	
Analyzer serial No.:	
Photometer serial No.:	
Software version:	
Date:	

Photometer type:				
Measuring unit:				
Calibration factor:				
C-offset:			■ mg/l	■ µg/l
Dilution:				
Delay to sample:			s	
Analog output:	■ 0-20 mA	■ 4-20 mA		
AV 1:	■ NC	■ NO		
AV 2:	■ NC	■ NO		
Error contact:	■ NC	■ NO		
Frequency offset:			Hz	
Zero frequency base line: (dist. water without reagent)			Hz	
Measuring range start:			■ mg/l	■ µg/l
Measuring range end:			■ mg/l	■ µg/l
AV 1:			■ mg/l	■ µg/l
AV 2:			■ mg/l	■ µg/l
1. measurement:				
Measuring interval:			Min	
1. calibration:				
Calibration interval:			h	
Calibration solution:			■ mg/l	■ µg/l
1. flushing:				
Flushing interval:			h	
Flushing hold on:			s	

Submenu			
Error mask:			
MB >:			
MBE:			
Post rinsing:			
Filling time:			
Reaction time:			
RPM:			
K floating mean:			
N:		Points	
C1:	mg/l / µg/l	F 1:	Hz
C2:	mg/l / µg/l	F 2:	Hz
C3:	mg/l / µg/l	F 3:	Hz
C4:	mg/l / µg/l	F 4:	Hz
C5:	mg/l / µg/l	F 5:	Hz
C6:	mg/l / µg/l	F 6:	Hz
C7:	mg/l / µg/l	F 7:	Hz
C8:	mg/l / µg/l	F 8:	Hz
C9:	mg/l / µg/l	F 9:	Hz
C10:	mg/l / µg/l	F 10:	Hz

Date: Service technician:

11.4 Maintenance schedule

Maintenance schedule for analyser no. .....

weekly

→ Check and note calibration factor
→ Visual check (soiling, pump tubings, reagent, sample inlet etc.)
→ Move hoses in the valves, change position due to valve pressure, spray hoses with silicone spray

done	cw 1	cw 2	cw 3	cw 4	cw 5	cw 6	cw 7	cw 8	cw 9	cw 10	cw 11	cw 12
date												
done	cw 13	cw 14	cw 15	cw 16	cw 17	cw 18	cw 19	cw 20	cw 21	cw 22	cw 23	cw 24
date												
done	cw 25	cw 26	cw 27	cw 28	cw 29	cw 30	cw 31	cw 32	cw 33	cw 34	cw 35	cw 36
date												
done	cw 37	cw 38	cw 39	cw 40	cw 41	cw 42	cw 43	cw 44	cw 45	cw 46	cw 47	cw 48
date												
done	cw 49	cw 50	cw 51	cw 52	cw 53							
date												

2-weekly

→ Check concentration of the calibration factor in the laboratory.
If necessary, adjust concentration in the menu parameter entry or use new standard.
→ Flush sample tubing system with pressurised water (disposable syringe). Remove hose holder unit from the pump.

done	cw 1	cw 3	cw 5	cw 7	cw 9	cw 11	cw 13	cw 15	cw 17	cw 19	cw 21	cw 23
date												
done	cw 25	cw 27	cw 29	cw 31	cw 33	cw 35	cw 37	cw 39	cw 41	cw 43	cw 45	cw 47
date												
done	cw 49	cw 51	cw 53									
date												

monthly or if required

→ Replace reagents.
→ Flush the sample tubing system with 12.5% bleaching lye (sodium hypochloride) and reflush thoroughly with water (menu Service V1: P, P1: g, P2: s, V2: S, (two channel version also V3))
→ Check sample collector for fouling and clean it if necessary
→ Spray pump hoses with silicone spray.

done	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
date												

every 3rd month / every 6th month

→ Turn the pump hoses in the hose holder unit **(monthly)**, replace them **(every 6th month)**
Attention: *Whenever working on the reagent hoses, the hoses must be removed from the canisters and the T-connectors near the reagent pump to prevent contamination of the reagents.*
→ Clean drain lines

done	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
date												

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Declaration of Hazardous Material and De-Contamination

Erklärung zur Kontamination und Reinigung

RA No. ☐☐☐☐☐☐☐

Please reference the Return Authorization Number (RA#), obtained from Endress+Hauser, on all paperwork and mark the RA# clearly on the outside of the box. If this procedure is not followed, it may result in the refusal of the package at our facility.
Bitte geben Sie die von E+H mitgeteilte Rücklieferungsnummer (RA#) auf allen Lieferpapieren an und vermerken Sie diese auch außen auf der Verpackung. Nichtbeachtung dieser Anweisung führt zur Ablehnung ihrer Lieferung.

Because of legal regulations and for the safety of our employees and operating equipment, we need the "Declaration of Hazardous Material and De-Contamination", with your signature, before your order can be handled. Please make absolutely sure to attach it to the outside of the packaging.
Aufgrund der gesetzlichen Vorschriften und zum Schutz unserer Mitarbeiter und Betriebseinrichtungen, benötigen wir die unterschriebene "Erklärung zur Kontamination und Reinigung", bevor Ihr Auftrag bearbeitet werden kann. Bringen Sie diese unbedingt außen an der Verpackung an.

Type of instrument / sensor
Geräte-/Sensortyp _____

Serial number
Seriennummer _____

☐ **Used as SIL device in a Safety Instrumented System /** *Einsatz als SIL Gerät in Schutzeinrichtungen*

Process data/ *Prozessdaten*

Temperature / *Temperatur* _____ [°F] _____ [°C]
Pressure / *Druck* _____ [psi] _____ [Pa]
Conductivity / *Leitfähigkeit* _____ [µS/cm]
Viscosity / *Viskosität* _____ [cp] _____ [mm²/s]

Medium and warnings
Warnhinweise zum Medium

	Medium /concentration *Medium /Konzentration*	Identification CAS No.	flammable *entzündlich*	toxic *giftig*	corrosive *ätzend*	harmful/ irritant *gesundheits-schädlich/ reizend*	other * *sonstiges**	harmless *unbedenklich*
Process medium / *Medium im Prozess*								
Medium for process cleaning / *Medium zur Prozessreinigung*								
Returned part cleaned with / *Medium zur Endreinigung*								

* explosive; oxidising; dangerous for the environment; biological risk; radioactive
* *explosiv; brandfördernd; umweltgefährlich; biogefährlich; radioaktiv*

Please tick should one of the above be applicable, include safety data sheet and, if necessary, special handling instructions.
Zutreffendes ankreuzen; trifft einer der Warnhinweise zu, Sicherheitsdatenblatt und ggf. spezielle Handhabungsvorschriften beilegen.

Description of failure / *Fehlerbeschreibung* _____

Company data / *Angaben zum Absender*

Company / *Firma* _____
Address / *Adresse* _____
Phone number of contact person / *Telefon-Nr. Ansprechpartner:* _____
Fax / E-Mail _____
Your order No. / *Ihre Auftragsnr.* _____

"We hereby certify that this declaration is filled out truthfully and completely to the best of our knowledge.We further certify that the returned parts have been carefully cleaned. To the best of our knowledge they are free of any residues in dangerous quantities."
"Wir bestätigen, die vorliegende Erklärung nach unserem besten Wissen wahrheitsgetreu und vollständig ausgefüllt zu haben. Wir bestätigen weiter, dass die zurückgesandten Teile sorgfältig gereinigt wurden und nach unserem besten Wissen frei von Rückständen in gefahrbringender Menge sind."

(place, date / *Ort, Datum)* _____ Name, dept./*Abt.* (please print / *bitte Druckschrift*) _____ Signature / *Unterschrift* _____

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