

Operation Manual

HYDROS[®] 100

Microprocessor - controlled
Thermal Conductivity Analyzer

(Supplement to Operation Manual BINOS[®] 100)



Troubleshooting, component replacement and internal adjustments must be made by qualified service personnel only.

Fisher-Rosemount GmbH & Co. assumes no liability for any omissions or errors in this manual. Any liability for direct or consequential damages - which might occur in connection with the delivery or the use of this manual - is expressly excluded to the extent permitted by applicable law.

This instrument has left the works in good order.

To maintain this operating condition, the user must strictly follow the instructions and consider the warnings in this manual or provided on the instrument.

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Read **all the accompanying manuals** before working with the instrument !

For expedient handling of reports of defects, please include the model and serial number which can be read on the instrument identity plate.

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Preface



Till completion of a separate operation manual of HYDROS® 100, these supplements to operation manual BINOS® 100 / OXYNOS® 100 are valid!

The analyzer operates according to the thermal conductivity method.

For the relatively common case that more than one component of a sample gas mixture may have varying concentrations the measuring principle will be non-selective; i.e., it will not be unambiguously related to the true concentration of the gas component to be measured.

If the concentrations of interfering gas components are detected by using other gas analyzers, and the analytical signals thus obtained supplied to the HYDROS® 100 via rear panel plug "CROSS COMP" (Fig. 1, Item 9), then the disturbing effects of any interfering gas component is compensated electronically.

The HYDROS® 100 is designed for compensation of up to 3 interfering gas components.

Possible signal inputs are 0 - 1 V, 0 - 10 V or 0 (4) - 20 mA.



For correct configuration in our factory we need informations about the input signal, the interfering gas component and the interfering gas concentration of each of the respective inputs.

<u>Example:</u>	Input 1	4 - 20 mA	0 - 20 % CO ₂
	Input 2	0 - 10 V	0 - 80 % CH ₄
	Input 3	4 - 20 mA	0 - 10 % CO

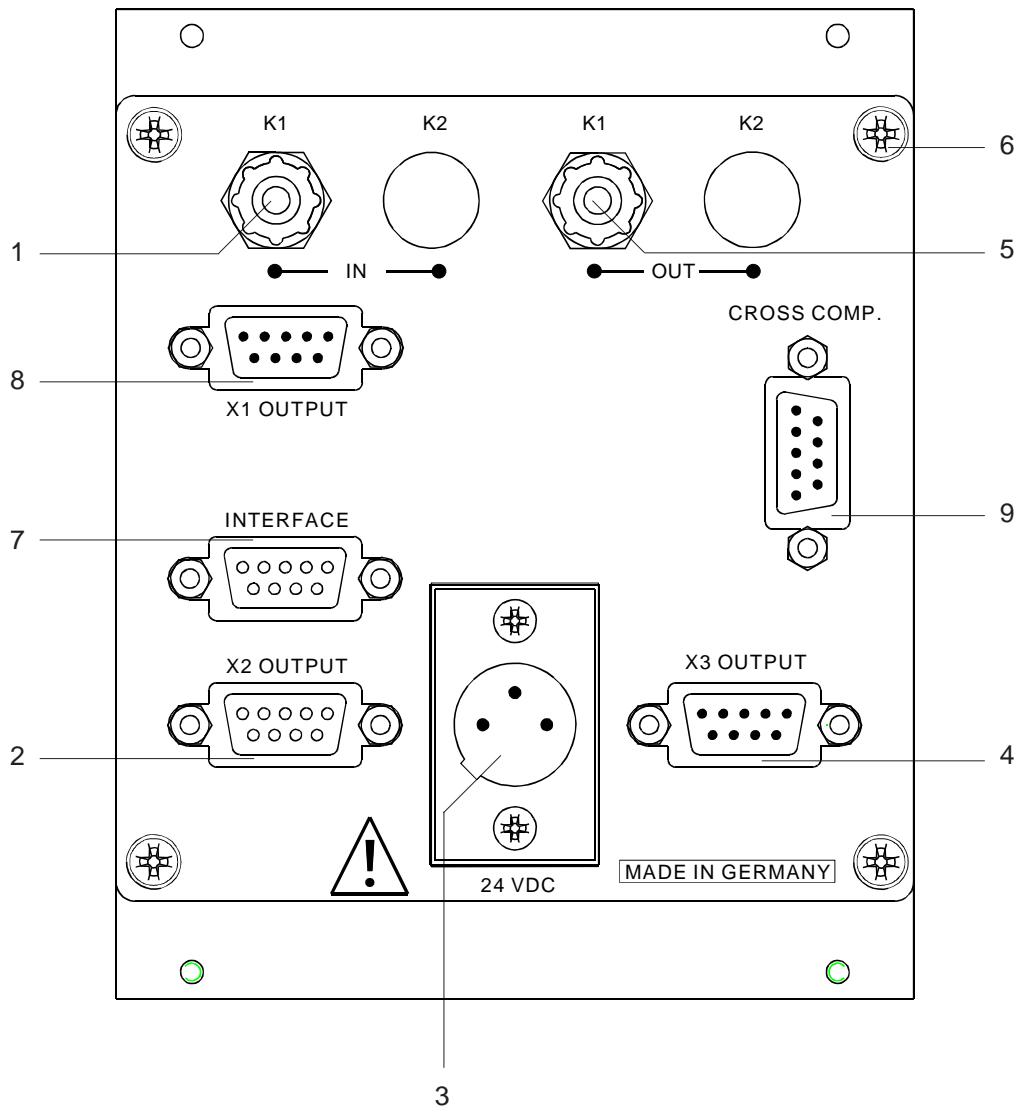
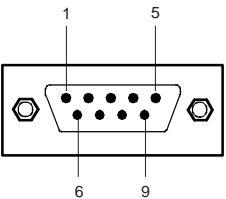


Fig.1: HYDROS® 100, Rear view

- 1 Gas inlet line fittings
- 2 **Analog signal output** mating socket
- 3 **24 V DC - supply input terminal**
- 4 Plug for **Digital signal output**
- 5 Gas outlet line fittings
- 6 Housing cover fastening screws
- 7 mating socket **Serial Interface** [RS 232 C / 485] (Option)
- 8 Plug for **Output Relays** (Option)
- 9 Plug for **Analog signal input** (cross compensation)

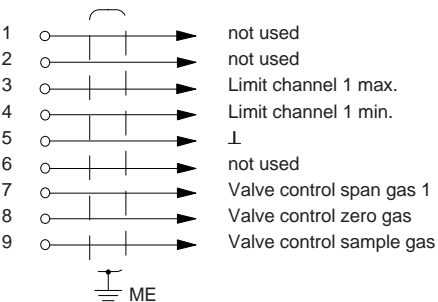
Connectors front view



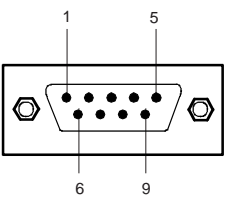
Plug X 3
9 - pin Sub. min. D

Digital Outputs (optically isolated)
"Open Collector": max. 30 V dc / 30 mA

1	not used
2	not used
3	Limit channel 1 max.
4	Limit channel 1 min.
5	⊥
6	not used
7	Valve control span gas 1
8	Valve control zero gas
9	Valve control sample gas

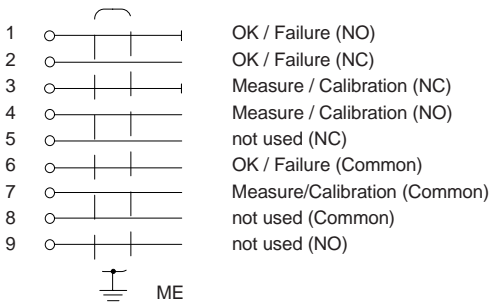


Option "Output Relays"
("non-voltage-carrying contacts", max. 42 V / 1 A)



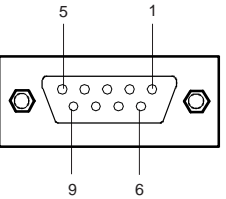
Plug X 1 (Option)
9 - pin Sub. min. D

1	OK / Failure (NO)
2	OK / Failure (NC)
3	Measure / Calibration (NC)
4	Measure / Calibration (NO)
5	not used (NC)
6	OK / Failure (Common)
7	Measure/Calibration (Common)
8	not used (Common)
9	not used (NO)



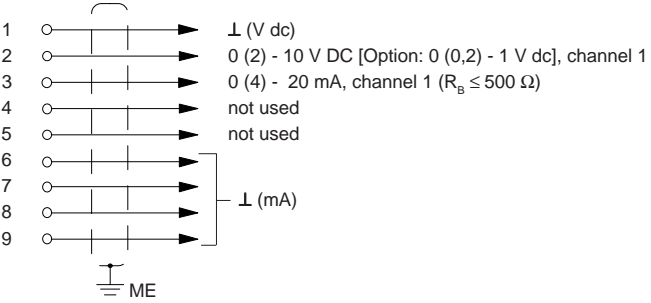
[NO = Normally OPEN]
[NC = Normally CLOSED]

Analog Signal Outputs (optically isolated)

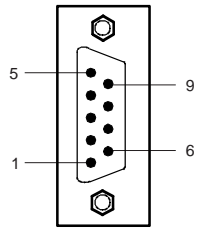


Socket X 2
9 - pin Sub. min. D

1	⊥ (V dc)
2	0 (2) - 10 V DC [Option: 0 (0,2) - 1 V dc], channel 1
3	0 (4) - 20 mA, channel 1 ($R_b \leq 500 \Omega$)
4	not used
5	not used
6	⊥ (mA)
7	
8	
9	

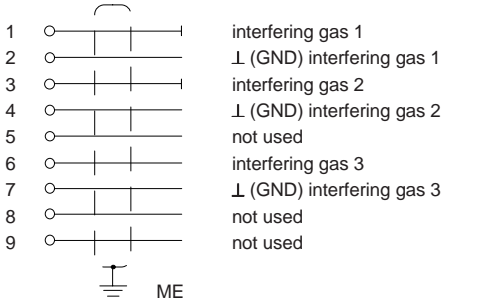


Analog Signal Inputs (max. 3, Cross Compensation)

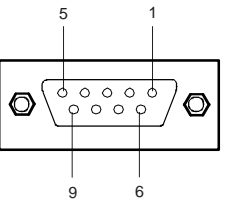


Plug CROSS COMP.
9 - pin Sub. min. D

1	interfering gas 1
2	⊥ (GND) interfering gas 1
3	interfering gas 2
4	⊥ (GND) interfering gas 2
5	not used
6	interfering gas 3
7	⊥ (GND) interfering gas 3
8	not used
9	not used

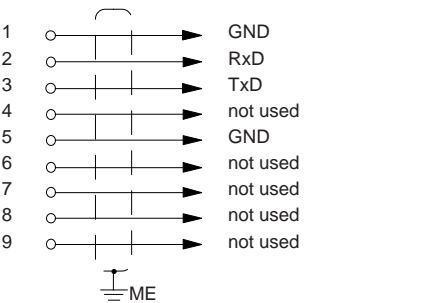


Option RS 232 C - Interface (optically isolated)



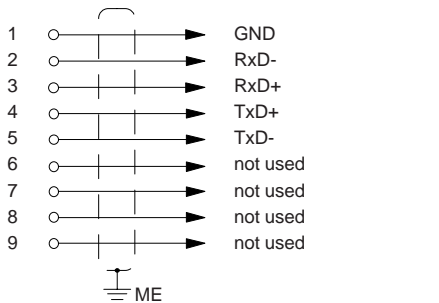
Socket "Interface" (Option)
9 - pin Sub. min. D

1	GND
2	RxD
3	TxD
4	not used
5	GND
6	not used
7	not used
8	not used
9	not used

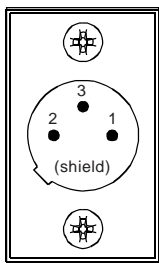


Option RS 485 - Interface (optically isolated)

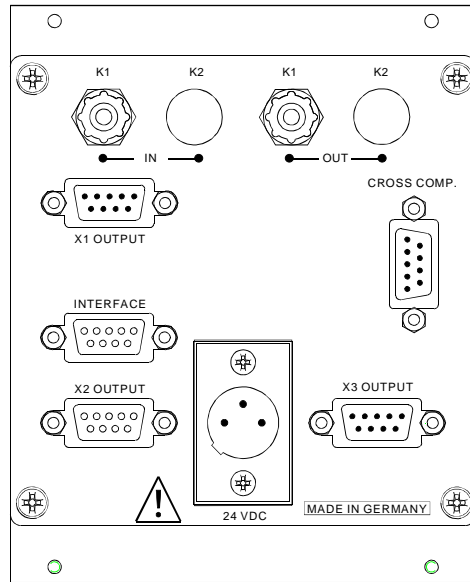
1	GND
2	RxD-
3	RxD+
4	TxD+
5	TxD-
6	not used
7	not used
8	not used
9	not used



Power Supply
 $U_N = 24 \text{ V DC } (+20 \% / -50 \%)$

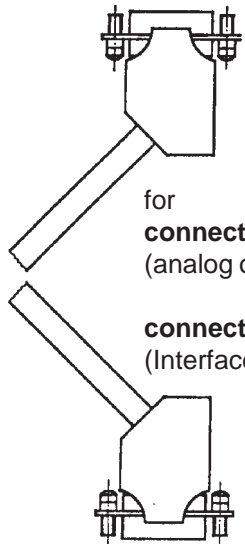


Pin 1: ME
Pin 2: + 24 V DC (+ 20 % / - 50 %)
Pin 3: 0 V DC (GND)
shield: housing flange



optionally Connection Cable

cable length approx. 2,0 m / double sided **plug**
Order-No.: 43 008 001

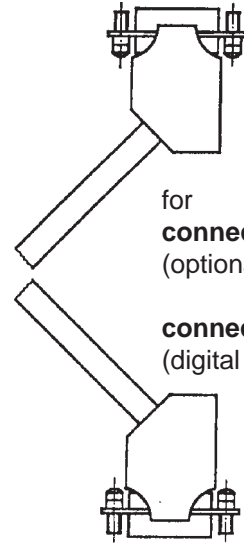


for
connector X 2
(analog outputs)

connector "Interface" (Option)
(Interface RS 232 C / RS 485)

optionally Connection Cable

cable length approx. 2,0 m / double sided **socket**
Order-No.: 43 008 006



for
connector X 1 (Option)
(optionally status signals)

connector X 3
(digital outputs)

connector CROSS COMP.
Analog Signal Inputs
(Cross Compensation)

Rear Panel BINOS® 100

- X 1: Option "Output Relays"
(Sub.-min. D, 9 pin. plug)
- X 2: Analog Outputs
(Sub.-min. D, 9 pin socket)
- X 3: Digital Outputs
(Sub.-min. D, 9 pin plug)
- Interface: Option "Interface" RS 232 C / RS 485
(Sub.-min. D, 9 pin socket)
- CROSS COMP.: Analog Signal Inputs (Cross Compensation)
(Sub.-min. D, 9 pin. plug)

Connection Cable 24 V DC

cable length approx. 1000 mm
one elbow socket, one straight plug,
Order-No.: CH 000 088

optionally terminal strip adaptors:

9-pin. sub.-min. D - socket to terminal strip
Order-No.: 00 019 494

9-pin. sub.-min. D - plug to terminal strip
Order-No.: 90 002 986

Combination of Cable / terminal strip adaptors:

combination of 43 008 001 and 00 019 494
Order-No.: NGA 000 59

combination of 43 008 006 and 90 002 986
Order-No.: NGA 000 62



Observe the safety measures !