Delivery address: Mackenrodtstraße 14,

## JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

# JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 1/32

# Humidity and temperature transducers for industrial applications

- measurement within the entire range from 0 to 100% RH
- temperature-resistant up to 180°C (depending on probe type)
- withstands pressures up to 100bar (depending on probe type)
- rugged metal housing, IP65 protection
- outstanding accuracy and stability
- graphical trend display and measurement history of the past year
- retraceability to NIST
- options: calculation and output of dew point, absolute humidity, mixing ratio, wet bulb temperature, enthalpy and water vapor pressure



These transducers are the first choice for demanding industrial humidity measurements

These humidity and temperature transducers are designed to meet demanding industrial applications, where stable measurements and a large variety of adaptation options are essential.

# **Humidity sensor**

The instrument series is based on 30 years of experience in industrial humidity measurement. The sensor measures accurately and reliably, as well as being resistant to contaminants and many chemicals.

# Cleaning the sensor helps with impurities

In environments with a high concentration of chemicals and cleaning agents, sensor cleaning helps achieve lasting accuracy between calibrations. During the cleaning procedure, the sensor is briefly heated up to such an extent as to cause the foreign molecules deposited on it to vaporize. If measurements seem to drift, sensor cleaning can be called up manually at any time or activated automatically at freely programmable time intervals.

# Graphical trend and development display

The transducers can optionally be supplied with a large numerical/graphical display on which the process development can be monitored easily and traced back for up to a year.

# Data acquisition and transmission to a PC

The recorded measurement data can be visualized on the display or transferred to a PC using a Windows<sup>®</sup> program.

# **Easy integration**

Extensive mounting accessories as well as the most diverse connection options to d.c. or a.c. voltage sources ensure that the transducers can be integrated without any problems.

# Various outputs

The instrument series comes with up to three analog outputs. An electrical isolation between supply voltage and analog outputs can also be implemented. RS232/RS485 interfaces and relay outputs are available for digital communication.



The display can be used to trace measurement trends back for up to a year.

# Flexible calibration

The instruments are factory-calibrated at six humidity points. If required, fast 1-point calibration can easily be carried out on site using an optional measuring device (available on request). In addition, JUMO sensor checks are provided for a more accurate 2-point calibration. Alternatively, our customer service is at your disposal for multi-point calibration and adjustment. We recommend that this should be carried out at least once a year.

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany Phone: +49 661 6003-0 Fay: 449 661 6003-607

Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635353 +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 2/32

# **Technical data**

# Measured variables

# Relative humidity

Measuring range: 0 – 100 % RH

Accuracy with regard to works standards, including non-linearity,

hysteresis and repeatability

at 20°C: ±1 % RH (0 – 90 % RH);

±1.7% RH (90 - 100% RH)

at -20 to +40 °C:  $\pm (1.0 + 0.8\% \text{ of measurement}) \% \text{ RH}^1$ at -40 to -20 °C, 40 to 180 °C:  $\pm (1.5 + 1.5\% \text{ of measurement}) \% \text{ RH}^1$ 

Uncertainty of factory calibration  $^2$  (20 °C) for 0 – 40 % RH:  $\pm 0.6$  % RH for 40 – 97 % RH:  $\pm 1.0$  % RH

Sensors

for general applications: HUMICAP® 180
 with heated probe: HUMICAP® 180C

- for high chemical

concentrations: HUMICAP® 180L2<sup>1</sup>

Response time ( $t_{0.9}$ ) at 20 °C in stationary air:

with grid filter: 8 sec
with st. steel mesh filter: 20 sec
with sintered filter: 40 sec

## **Temperature**

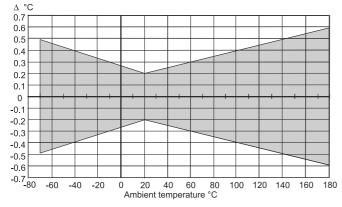
Measuring range for type:

- 907023/331: -40 to +60 °C - 907023/333: -40 to +80 °C

- 907023/334, 907023/335,

907023/337, 907023/338: -70 to +180°C
Temperature sensor: Pt100 to EN 60 751

Accuracy at 20°C: ±0.2°C



Accuracy over the entire range

# **Derived variables (option)**

dew point temperature, mixing ratio, absolute humidity, wet bulb temperature, enthalpy, water vapor pressure

# **Operating conditions**

Operating temperature range at

probes: as measuring ranges
 electronics: -40 to +60 °C
 with LC display: 0 to 60 °C

Operating pressure range for

- 907023/334: 0 – 10MPa (0 – 100bar) - 907023/338: 0 – 4MPa (0 – 40bar)

- 907023/333, 907023/335,

907023/337: vapor-tight

EMC: as per EN 61 326-1:1997 + Annex 1:1998 + Annex 2:2001

# Inputs/outputs

Operating voltage range: 10 - 25V DC, 24V AC - with optional supply module: 100 - 240V AC 50/60 Hz

Current drawn (20°C, U<sub>b</sub> = 24V DC)

when used with

RS232C: ⊈5mA

- output 2x 0 – 1V /

- with display and background

lighting: 20mA during sensor cleaning: 110mA max.

- with probe heating

(907023/337): 120mA

Analog outputs (2 are standard, 3rd is optional)

- current output: 0 – 20mA, 4 – 20mA

- voltage output: 0 – 1V, 0 – 5V, 0 – 10V

Accuracy of the analog outputs

at 20°C: ±0.05% of full scale

Temperature drift of the

analog outputs: ±0.005% of full scale

External loads

- burden for current outputs:  $<500\Omega$ - voltage output 0 – 1V:  $>2k\Omega$ 

voltage output

0-5V/0-10V:  $>10k\Omega$  Maximum core cross-section:  $0.5\text{mm}^2$ 

Serial interface: RS232C, RS485 (option)

Relay outputs (option): 0.5A, 250V AC

Digital display: LCD with background lighting,

graphical trend display of all

variables

Menu languages: English, German, French,

Spanish, Japanese, Swedish,

Finnish

# **General data**

Connection options

- cable gland: M 20x1.5 for 8 –11 mm dia. cable

- conduit fitting (option): M 20x1.5 / NPT 1/2"

connector: M 12, 8-pole, type RKC8/9.M12
5m connecting cable: M 12, 8-pole, type RKT8-282/5M

Probe cable diameter

- 907023/333: 6.0mm - all other probes: 5.5mm

Housing material: G-AlSi 10 Mg (DIN 1725)

Enclosure protection: IP65

Alteration of individual specifications is possible.

For HUMICAP® 180L2 sensor at -10 to +40 °C:  $\pm$ (1.0 + 1 % of measured value) % RH; at -40 to -10 °C, 40 to 180 °C:  $\pm$ (1.5 + 2% of measured value) % RH.

<sup>&</sup>lt;sup>2</sup> Defined as ±2 standard deviation limits.

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany

Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net
Internet: www.jumo.net

# JUMO Instrument Co. Ltd.

JUMO House

Temple Bank, Riverway
Harlow, Essex CM 20 2TT, UK
Phone: +44 1279 635533
Fax: +44 1279 635262
e-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

# JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

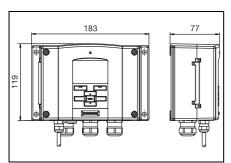
Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



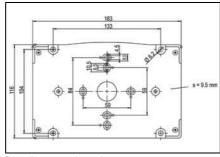
Data Sheet 90.7023

Page 3/32

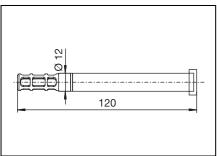
# **Dimensions**



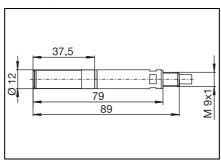
Housing, type 907023/330



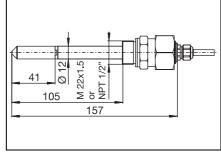
Plastic mounting plate or drilling template



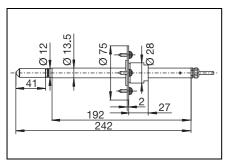
Probe, type 907023/331



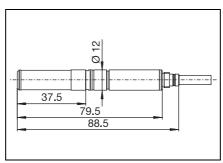
Probe, type 907023/333



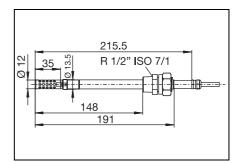
Probe, type 907023/334



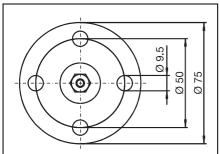
Probe, type 907023/335 (mounting flange is optional)



Probe, type 907023/337



Probe, type 907023/338



Mounting flange (for probe types 907023/333, 907023/337, 907023/335 and additional T probe)

All dimensions in mm.

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany Phone: +49 661 6003-0

e-mail: mail@jumo.net www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 4/32

# Humidity and temperature transducers for wall mounting Type 907023/331

- for temperatures ranging from -40 to +60°C
- outstanding accuracy and stability
- graphical trend display and measurement history of the past year
- corrosion-resistant housing, IP65 rating
- retraceability to NIST
- applications include: clean rooms, pharmaceutical processes, greenhouses, swimming baths, museums and archives



This transducer for wall mounting is highly suitable for monitoring humidity in rooms

This humidity and temperature transducer for wall mounting is especially suitable for the monitoring and control of HVAC installations. Compared with conventional wall-mounted probes for air-conditioning, this transducers offers

- better performance data,
- higher resistance to chemicals,
- state-of-the-art digital display functions,
- extensive range of supply options,
- more signal outputs,
- more humidity measurement variables,

# Graphical trend and development display

The transducers can optionally be supplied with a large numerical/graphical display on which the process development can be monitored easily and traced back for up to a year.

The measurement history is particularly important for rooms that require stable climatic conditions, such as archives.

Maximum and minimum values of the past year can be graphically displayed in a simple manner.



The display can be used to trace measurement trends back for up to a year.

# Outputs and supply options for all needs

The output options include up to three analog outputs, RS232 and RS485 interfaces as well as alarm relays.

The possible supply voltage ranges from 10 to 35V DC. A wide-range power supply module ensures that the transducers can be connected to all supply voltages used around the globe.

The supply/signal cable can be passed through an opening in the housing base, which enables practical mounting, particularly in clean rooms.

Delivery address: Mackenrodtstraße 14,

Postal address: Macket Hodds and 14, 36039 Fulda, Germany Phone: +49 661 6003-0

Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023 Page 5/32

# Order details: Humidity and temperature transducers for wall mounting, type 907023/331

		(1)	Basic version	0.020,001
	907023/331	(1)	Humidity and temperature transducer for wall mounting	_
x	A	(2)	Version for wall mounting probe placed directly on housing	
		(3)	Additional temperature probe	
×	0	(4)	not for type 907023/331  Parameters	
x x	A B	( .,	RH + T RH+T+Tdf+a+x+Tw+ppm+pw+pws+h+dT	
<u> </u>		(5)	Display	
x	0 1		no display graphics LCD with background lighting	
x	0	(6)	<b>Supply</b> 10 – 35V DC, 24V AC	
X	1		alactrical isolation for outputs 10 – 35V DC 24V AC	
X	2 3 4		universal AC supply (100 – 240 V AC) and US connecting cal	ole able
X	5 6		universal AC supply (100 – 240V AC) and US connecting cat universal AC supply (100 – 240V AC) and EUR connecting cat universal AC supply (100 – 240V AC) and EUR connecting cat universal AC supply (100 – 240V AC) and UK connecting cat universal AC supply (100 – 240V AC) and AUS connecting cat universal AC supply (100 – 240V AC) and AUS connecting cat universal AC supply (100 – 240V AC) and AUS connecting cat universal AC supply (100 – 240V AC) and AUS connecting cat universal AC supply (100 – 240V AC) and AUS connecting cat universal AC supply (100 – 240V AC) and AUS connecting cat universal AC supply (100 – 240V AC) and AUS connecting cat universal AC supply (100 – 240V AC) and AUS connecting cat universal AC supply (100 – 240V AC) and EUR connecting cat universal AC supply (100 – 240V AC) and EU	able
	0	(7)	Signal output (and serial RS232 interface or (optionally) of	communication module)
X	1 2 3		analog output channel (Ch1+Ch2+Ch3) 4 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 20mA	
X X	4		Signal output (and serial RS232 interface or (optionally) of analog output channel (Ch1+Ch2+Ch3) 4 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 1V analog output channel (Ch1+Ch2+Ch3) 0 – 5V channel (Ch1+Ch2+Ch3) 0 – 5V	
х	5 Ch1  Ch2  Ch3	(8)	analog output channel (Ch1+Ch2+Ch3) 0 – 10V  Analog output signals for Ch1, Ch2 and Ch3	
x x	Δ	(0)	no third analog output (choose A if not required) RH (0 – 100% RH)	
X	B B B C C C D D D		T (see (9) output range temporal (-20 to +100°C) (-4 to +212°F)	p.)
X	E E E		Tdf (-20 to +100°C) (-4 to +212°F) $a_1(0 - 600 \text{ g/m}^3)$ (0 - 262 gr/ft3)	
X	E E E F G G G H H H		TW (0 to 100°C) (+32 to +212°F)  x (0 - 500g/kg d.a.) (0 - 3500gr/lb)  h (-40 to +1500kJ/kg) (-9.5 to +652.6Btu/lb)  pm (0 - 5000) (0 - 5000)  pw (0 - 1000hPa) (0 - 14.5 ps)	
X	ij ij ij K K K		h (-40 to +1500 kJ/kg) (9-5000) ppm (0 - 5000) (0 - 5000)	
х			pw (0 – 3000) (0 – 3000) pw (0 – 1000hPa) (0 – 14.5psi)	
X	N N N		pws (0 – 1000 hPa) (0 – 14.5 psi) dT (-10 to +50 °C) (14 to +122 °F)	ChO. Ontion ChO.
х		(9)	Define special scaling Ch1: Analog output range for temperature	Ch2: Option Ch3:
X X	A B F		no temperature output (choose A if not required) -40 to +60°C (-40 to +140°F)	
X X	K		-20 to +60°C (-4 to +140°F) 0 to 60°C (32 to 140°F)	
х	Х	(10)	Specifics: Output unit	
x x	1 2	(10)	metric non-metric	
		(11)	Option for module slot 1	Option for module slot 2
X	0 0		no module relay output	no module relay output
х	2 3	(12)	RS485 serial interface (electrically isolated)  Cable bushings	third analog output (required if Ch3 (8) is selected)
X X	A B C		cable gland M 20x1.5 conduit fitting NPT 1/2"	
X X	C D		8-pole connector with 5m cable 8-pole mating connector equipped with screw terminals	
x	0	(13)	Transducer mounting standard mounting	
X X	Ĩ		wall-mounting plate pole installation kit	
х	2 3 4		pole installation kit pole installation kit with rain shield DIN rail kit	
х		(14)	Humidity sensor type	
X X	1 4		general application (standard) sensor with cleaning function	HUMICAP <sup>®</sup> 180 HUMICAP <sup>®</sup> 180C
x	А	(15)	Sensor protection / filter PPS plastic grid with stainless steel mesh	
X	B		PPS plastic grid sintered stainless steel filter	
		(16)	Probe installation kit	
х		(17)	no installation kit  Operating instructions: language	
X X	1 2		English German	
х	3	(18)	French Calibration	
х	3A1	(10)	calibration to ISO 9001 standard (calibration report is available	ole on request)
	(1)		(2) (3) (4) (5) (6) (7) (8)	(9) (10) (11) (12) (13) (14) (15) (16) (17) (18)
	er code	221		<u></u>
Ord	er example 907023/	<del>ა</del> 31 -	A - 0 - A - 1 - 0 - 1 - BCA	A - B - 1 - 0 0 - A - 0 - 1 - A - A - 2 - 3 A 1

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607

Fax: +49 661 6003-1 e-mail: mail@jumo.net Internet: www.jumo.net

### JUMO Instrument Co. Ltd.

JUMO House

Temple Bank, Riverway
Harlow, Essex CM 20 2TT, UK
Phone: +44 1279 635533
Fax: +44 1279 635262
e-mail: sales@jumo.co.uk

Internet: www.jumo.co.uk

# JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 6/32

# Humidity and temperature transducers for ducts and locations where space is tight, Type 907023/333

- for temperatures ranging from -40 to +80°C
- cable probe for remote measurement, for demanding HVAC applications
- outstanding accuracy and stability
- short response times thanks to low thermal mass
- graphical trend display and measurement history of the past year
- corrosion-resistant housing, IP65 rating
- retraceable to NIST
- applications include: clean rooms, pharmaceutical processes, greenhouses and climatic chambers



Transducer with a small cable probe for ducts and locations where space is tight

This humidity and temperature transducer is a universal measuring device for applications that require a small, thin cable probe.

# Flexible installation

A duct installation kit (consisting of aluminium flange, screw fitting and support rod) is available for installing the probe in tubes, ducts or through walls.

The probe cable is flexible and comes in lengths of 2m, 5m and 10m.

The user can choose between two range options, for ambient temperatures up to 80°C or up to 120°C.



**Duct installation kit** 

For outside installations, the optional radiation shield protects the probe from sun and rain. It can be mounted on a pole, a beam, or directly on a wall.

# For moderate humidity and temperature

The transducers are mainly used for the control and monitoring of HVAC systems, for example in clean rooms, pharmaceutical process and greenhouses.

However, in environments with a predominantly high humidity, we recommend type 907023/337 with a heated, vapor-tight stainless steel probe.

# Graphical trend and development display

The transducers can optionally be supplied with a large numerical/graphical display on which the process development can be monitored easily and traced back for up to a year.

The measurement history is particularly important for rooms that require stable climatic conditions, such as clean rooms. Maximum and minimum values of the past year can be graphically displayed in a simple manner.



The display can be used to trace measurement trends back for up to a year.

# Outputs and supply options for all needs

The output options include up to three analog outputs, RS232 and RS485 interfaces as well as alarm relays.

The possible supply voltage ranges from 10 to 35 V DC. A wide-range power supply module ensures that the transducers can be connected to all supply voltages used around the globe.

The supply/signal cable can be passed through an opening in the housing base, which enables practical mounting, particularly in clean rooms.

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany +49 661 6003-0 +49 661 6003-607

Phone: Fax: e-mail: mail@jumo.net Internet: www.jumo.net JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

+44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023 Page 7/32

# Order details: Humidity and temperature transducers for ducts and locations where space is tight, type 907023/333

			(1)	Basic version	300 10 11g.11, 1, 1, pe 0010 2010 000
	90702	3/333	/	Humidity and temperature transducer for ducts and locations where	space is tight
			(2)	Sensor cable / cable length 2m cable, 80°C	
x		E F		5m cable, 80°C	
X		G 4		10m cable, 80°C 2m cable, 120°C	
X X		5 6		5m cable, 120°C 10m cable, 120°C	
^			(3)	Additional temperature probe	
Х		0	(4)	not for type 907023/333  Parameters	
х		A	(+)	RH + T	
х		В	(5)	RH+T+Td+Tdf+a+x+Tw+ppm+pw+pws+h+dT <b>Display</b>	
×		0 1	(-,	no display graphics LCD with background lighting	
^			(6)	Supply	
X		0 1		10 – 35V DC, 24V AC electrical isolation for outputs 10 – 35V DC, 24V AC	
X X		2		universal AC supply (100 – 240 V AC)	
×		4 5		universal AC supply (100 – 240V AC) and EUR connecting cable	
x		6		Supply 10 – 35 V DC, 24 V AC electrical isolation for outputs 10 – 35 V DC, 24 V AC universal AC supply (100 – 240 V AC) universal AC supply (100 – 240 V AC) and US connecting cable universal AC supply (100 – 240 V AC) and EUR connecting cable universal AC supply (100 – 240 V AC) and UK connecting cable universal AC supply (100 – 240 V AC) and AUS connecting cable	
x		1	(7)	Signal output (and serial RS232 interface or (optionally) commun	ication module)
X		2		analog output channel (Ch1+Ch2+Ch3) 4 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 20mA	
x		4		analog output channel (Ch1+Ch2+Ch3) 0 – 1V analog output channel (Ch1+Ch2+Ch3) 0 – 5V analog output channel (Ch1+Ch2+Ch3) 0 – 10V	
х	Ch1  Ch2	5 Ch3	(8)	Analog output signals for Ch1, Ch2 and Ch3	
×		A B	. ,	no third analog output (choose A if not required) RH (0 — 100% RH)	
х	B B C C D	CD		T (see (9) output range temp.)	
x	EI EI	E F		Tdf (-20 to +100 °C) (-4 to +212 °F)	
X	G G	G		a (0 – 600g/m³) (0 – 262gr/ft3) Tw (0 to 100°C) (+32 to +212°F)	
X	A H	H J		x (0 – 500g/kg d.a.) (0 – 3500gr/lb) h (-40 to +1500kJ/kg) (-9.5 to +652.6Btu/lb)	
x x	J J K K L L	K		ppm (0 – 5000) (0 – 5000) pw (0 – 1000hPa) (0 – 14.5psi)	
х	M M	M N		pws (0 – 1000hPa) (0 – 14.5 psi) dT (-10 to +50°C) (14 to +122°F)	
X	N N	X		Define special scaling Ch1: Ch2:	Option Ch3:
x		Α	(9)	Analog output range for temperature no temperature output (choose A if not required)_	
X		B		-40 to +60°C (-40 to +140°F) -40 to +80°C (-40 to +176°F)	
х		D F		-40 to +120°C (-40 to +248°F)	
x		G		-20 to +80°C (-4 to +176°F)	
X		H K		-20 to +120°C (-4 to +248°F) 0 to 60°C (32 to 140°F)	
X		M X		0 to 120°C (32 to 248°F) Specifics:	
			(10)	Output unit	
X		1		metric non-metric	
		0   0	(11)	Option for module slot 1 Option module no module	on for module slot 2
x		1 1		relay output relay	output
×		2 3	(12)	Cable bushings	analog output (required if Ch3 (8) is selected)
×		A B	. ,	cable gland M 20x1.5 conduit fitting NPT 1/2"	
X		CD		8-pole connector with 5m cable 8-pole mating connector equipped with screw terminals	
^			(13)	Transducer mounting	
x x		0 1		standard mounting wall-mounting plate	
X		2		pole installation kit pole installation kit with rain shield	
x		4		DIN rail kit	
x		1	(14)	Humidity sensor type general application (standard) HUM	ICAP <sup>®</sup> 180 ICAP <sup>®</sup> 180C
x		4	(4 = \)		ICAP <sup>W</sup> 180C
х		Α	(15)	Sensor protection / filter PPS plastic grid with stainless steel mesh PPS plastic grid	
x		B C		PPS plastic grid sintered stainless steel filter	
			(16)	Probe installation kit	
X		A C		no installation kit duct installation kit	
x		D	(17)	cable gland AGRO Operating instructions: language	
х		1	(17)	English	
X		2		German French	
		3A1	(18)	Calibration calibration to ISO 9001 standard (calibration report is available on re	(teau
х		JAI		Cambration to 100 9001 Standard (Cambration report is available on re	
_	lan aads —	(1)		(2) (3) (4) (5) (6) (7) (8) (9)	(10) (11) (12) (13) (14) (15) (16) (17) (18)
	ler code ler example 9	07023	/333	-	- 1 - 0 0 - A - 0 - 1 - A - A - 2 - 3 A 1
Ord	е сланиріе 9	01023		- L - U - A - I - U - I - BCA - G	- 1 - 0 0 - A - 0 - 1 - A - A - 2 - 3 A I

Internet:

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net

www.jumo.net

## JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK

Phone: +44 1279 635533 Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

# JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



**Data Sheet 90.7023** 

Page 8/32

# Humidity and temperature transducers for high-pressure and vacuum applications, Type 907023/334

- for temperatures ranging from -70 to +180°C
- for measurements within the pressure range from 0 – 100bar
- with a fitting element in ISO or NPT version
- outstanding accuracy and stability
- graphical trend display and measurement history of the past year
- **■** corrosion-resistant housing, IP65 rating
- retraceable to NIST
- applications include: high-pressure lines or vacuum chambers



Transducer for high-pressure lines or vacuum chambers

This humidity and temperature transducer is designed for humidity measurements in high-pressure lines or vacuum chambers. The measurement probe is constructed in such a way as to ensure gas-tight mounting.

For correct measurement results, process pressures that deviate from the normal ambient air pressure can be entered in the transducer memory via a serial interface or the operator panel.

# **Humidity sensor**

The instrument series is based on 30 years of experience in industrial humidity measurement.

The humidity sensor enables precise and reliable measurements and is resistant to contamination and a large number of chemicals.

# Graphical trend and development display

The instrument series can optionally be supplied with a large numerical/graphical display on which the process development can easily be monitored and traced back for up to a year.

The measurement data can be transferred to a PC for further processing, and for copying to other programs.



With the help of the display, the user is able to trace measurement trends back for up to a year.

# Outputs and supply options for all needs

The output options include up to three analog outputs, RS232 and RS485 interfaces as well as alarm relays.

The possible supply voltage ranges from 10 to 35V DC. A wide-range power supply module ensures that the transducers can be connected to all supply voltages used around the globe.

The supply/signal cable can also be passed through an opening in the housing base.

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0

Fax: +49 661 6003-607 e-mail: mail@jumo.net Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533 +44 1279 635262 e-mail: sales@jumo.co.uk

Internet: www.jumo.co.uk

**JUMO Process Control, Inc.** 8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

e-mail: info@jumo.us Internet: www.jumo.us

315-697-5867



Data Sheet 90.7023

Page 9/32

# Order details: Humidity and temperature transducers for high-pressure and vacuum applications, type 907023/334

	007000	/004	(1)	Basic version	annilastiana
	907023	3/334	(0)	Humidity and temperature transducer for high-pressure and vacuu	um applications
		H	(2)	Sensor cable / cable length 2m cable	
		J K		5m cable 10m cable	
		0	(3)	Additional temperature probe not for type 907023/334	
			(4)	Parameters	
		A B		RH + T RH+T+Td+Tdf+a+x+Tw+ppm+pw+pws+h+dT	
			(5)	Display	
		0 1		no display graphics LCD with background lighting	
		0	(6)	Supply	
		0		10 – 35V DC, 24V AC electrical isolation for outputs 10 – 35V DC, 24V AC	
		2		universal AC supply (100 – 240V AC) universal AC supply (100 – 240V AC) and US connecting cable	
		4		universal AC supply (100 – 240V AC) universal AC supply (100 – 240V AC) and US connecting cable universal AC supply (100 – 240V AC) and EUR connecting cable universal AC supply (100 – 240V AC) and UK connecting cable universal AC supply (100 – 240V AC) and UK connecting cable	
		6	_	universal AC supply (100 – 240 v AC) and AUS connecting caple	
		1	(7)	Signal output (and serial RS232 interface or (optionally) commanalog output channel (Ch1+Ch2+Ch3) 4 – 20 mA	nunication module)
		2		analog output channel (Ch1+Ch2+Ch3) 0 – 20mA	
		4		Signal output (and serial RS232 interface or (optionally) commanalog output channel (Ch1+Ch2+Ch3) 4 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 1V analog output channel (Ch1+Ch2+Ch3) 0 – 5V analog output channel (Ch1+Ch2+Ch3) 0 – 10V	
Ch1 I	Ch2	5 Ch3	(8)	analog output channel (Ch1+Ch2+Ch3) 0 – 10V  Analog output signals for Ch1, Ch2 and Ch3	
	В	A B	,	no third analog output (choose A if not required)	
B C D E F	С	С		T (see (9) output range temp.)	
D E	D E F	D E		Td (-20 to +100°C) (-4 to +212°F) Tdf (-20 to +100°C) (-4 to +212°F)	
F	F G	F G		a (0 – 600 g/m³) (0 – 262 gr/ft3) Tw (0 to 100 °C) (+32 to +212 °F)	
G H	H	Ĥ		x (0 - 500 g/kg d a) $(0 - 3500 gr/lb)$	
J K	K	J K		h (-40 to +1500kJ/kg) (-9.5 to +652.6Btu/lb) ppm (0 - 5000) (0 - 5000)	
L M	L M	L M		pw (0 - 1000hPa) (0 - 14.5psi) pws (0 - 1000hPa) (0 - 14.5psi)	
N X	N X	N X		dT (-10 to +50°C) (14 to +122°F)	n2: Option Ch3:
^[	^		(9)	Analog output range for temperature	Ομιστι στιο
		A B	.,	no temperature output (choose A if not required) -40 to +60°C (-40 to +140°F)	
		С		-40 to +80°C (-40 to +176°F)	
		D E		-40 to +120°C (-40 to +248°F) -40 to +180°C (-40 to +356°F)	
		F G		-20 to +60 °C (-4 to +140 °F) (-20 to +80 °C (-4 to +176 °F)	
		Ĥ J		-20 to +120°C (-4 to +248°F) -20 to +180°C (-4 to +356°F)	
		K		0 to 60°C (32 to 140°F)	
		L M		0 to 100°C (32 to 212°F) 0 to 120°C (32 to 248°F)	
		N P		0 to 180°C (32 to 356°F) -60 to +60°C (-76 to +140°F)	
		X		Specifics:	
		1	(10)	Output unit metric	
		2	(4.4)	non-metric	making for mondrile plat 0
	C		(11)	no module no	ption for module slot 2 o module
	1	1 1		relay output rel	lay output ird analog output (required if Ch3 (8) is selected)
	2	•	(12)	Cable bushings	
		A B	•	cable gland M 20x1.5 conduit fitting NPT 1/2"	
		Ċ		8-pole connector with 5m cable	
		D	(13)	8-pole mating connector equipped with screw terminals  Transducer mounting	
		0 1	,	standard mounting wall-mounting plate	
		2		pole installation kit	
		3 4		pole installation kit with rain shield DIN rail kit	
		4	(14)	Humidity sensor type	IMICAP® 180
		4		general application (standard) Ht sensor with cleaning function Ht	UMICAP <sup>®</sup> 180 UMICAP <sup>®</sup> 180C
		Α	(15)	Sensor protection / filter PPS plastic grid with stainless steel mesh	
		В		PPS plastic grid	
		C		sintered stainless steel filter stainless steel grid	
			(16)	Probe installation kit	
		E F		fitting element M 22x1.5 fitting element NPT 1/2"	
		4	(17)	Operating instructions: language	
		2		English German	
		3	(18)	French Calibration	
		3A1	(18)	calibration calibration to ISO 9001 standard (calibration report is available on	n request)
		(4)		(2) (3) (4) (5) (6) (7) (9)	(9) (10) (11) (12) (13) (14) (15) (16)
	_	(1)	<u> </u>	(2) (3) (4) (5) (6) (7) (8)	(9) (10) (11) (12) (13) (14) (15) (16)
r code					

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-667
e-mail: mail@jumo.net
Internet: www.jumo.net

### JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

# JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 10/32

# Humidity and temperature transducers for high temperatures, Type 907023/335

- for temperatures ranging from -70 to +180°C
- long stainless steel probe
- mounting flange in stainless steel (option)
- variable mounting depth
- outstanding accuracy and stability
- graphical trend display and measurement history of the past year
- **■** corrosion-resistant housing, IP65 rating
- retraceable to NIST
- applications include: hot-air drying processes



Transducer with a rugged stainless steel probe – ideal for high flow velocities in drying processes

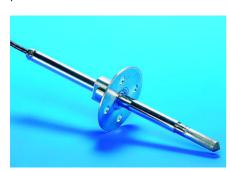
This humidity and temperature transducer is equipped with a long stainless steel probe that is especially designed for high-temperature applications.

# Probe design for high flow velocity

The probe is designed to withstand high mechanical stress and high flow velocity. This transducer is therefore highly suitable for

measurements in pipes, for which smaller probes are not rugged enough.

Application example: hot-air drying processes.



Thanks to the mounting flange in stainless steel, probes can be mounted at various depths.

# Graphical trend and development display

The instrument series can optionally be supplied with a large numerical/graphical display on which the process development can easily be monitored and traced back for up to a year.

The measurement data can be transferred to a PC for further processing, and for copying to other programs.



With the help of the display, the user is able to trace measurement trends back for up to a year.

# Outputs and supply options for all needs

The output options include up to three analog outputs, RS232 and RS485 interfaces as well as alarm relays.

The possible supply voltage ranges from 10 to 35V DC. A wide-range power supply module ensures that the transducers can be connected to all supply voltages used around the globe.

# **Humidity sensor**

The humidity sensor enables precise and reliable measurements as well as being resistant to contaminants and many chemicals.

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany +49 661 6003-0

Phone: Fax: +49 661 6003-607 e-mail: mail@jumo.net Internet: www.jumo.net

JUMO Instrument Co. Ltd.

Internet: www.jumo.co.uk

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533 +44 1279 635262 e-mail: sales@jumo.co.uk

**JUMO Process Control, Inc.** 8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 11/32

# Order details: Humidity and temperature transducers for high temperatures, type 907023/335

Manual part				_	(1)	Basic version
The masks			90702	3/335		
Second Content	×			1	(2)	
Additional temperature probe   Additional temperature probe   Additional temperature probe   Additional temperature   A				M		5m cable
max   For type 80/02/3/3/3   A	^				(3)	Additional temperature probe
## 17 TG - TGF data to To teppine persons the CT	х			0		
	х				(4)	RH + T
Collaboration	×			В	(5)	
Supply   Company   Compa	x				(0)	no display
	^				(6)	Owner
						10 – 35V DC, 24V AC electrical isolation for outputs 10 – 35V DC, 24V AC
	х			2		universal AC supply (100 – 240 V AC)
	х			4		universal AC supply (100 – 240V AC) and EUR connecting cable
						universal AC supply (100 – 240 V AC) and AUS connecting cable
Chi	x			1	(7)	Signal output (and serial RS232 interface or (optionally) communication module) analog output channel (Ch1+Ch2+Ch3) 4 – 20 mA
Chi	х			2		analog output channel (Ch1+Ch2+Ch3) 0 – 20mA
Chi	x			4		analog output channel (Ch1+Ch2+Ch3) 0 - 1V
No.	×	Ch1	Ch2 I		(8)	Analog output signals for Ch1. Ch2 and Ch3
X				Α	,	no third analog output (choose A if not required)
X	х	C	С	С		T (see (9) output range temp.)
X	х	Ē	E	Е		Tdf (-20 to +100 °C)
X	х	F G	G	G		Tw (0 to 100°C) (+32 to +212°F)
	x	H	J	J		x (0 – 500g/kg d.a.) (0 – 3500gr/lb) h (-40 to +1500kJ/kg) (-9.5 to +652.6Btu/lb)
X	х	K L	K	K		ppm (0 – 5000) (0 – 5000) pw (0 – 1000hPa) (0 – 14.5psi)
X	х	M	M	M		pws (0 - 1000 hPa) (0 - 14.5 psi)
X		X				Define special scaling Ch1: Ch2: Option Ch3:
X	x			Α	(9)	
X	х			В		-40 to +60 °C (-40 to +140 °F)
X	х			D		-40 to +120°C (-40 to +248°F)
Note	х					-20 to +60°C (-4 to +140°F)
X						-20 to +120°C (-4 to +248°F)
X						0 to 60°C (32 to 140°F)
X						0 to 100°C (32 to 212°F)
X	х			N		0 to 180°C (32 to 356°F)
Sensor vith cleaning function   Sensor vith cleaning functio						Specifics:
Non-metric   Non	x			1	(10)	
X				2	(4.4)	non-metric
RS485 serial interface (electrically isolated)	х				(11)	no module no module
Cable bushings				1 1 2 3		
S				٠.	(12)	Cable bushings
Sepole connector with 5m cable   Sepole mating connector equipped with screw terminals				В		conduit fitting NPT 1/2"
1	X X					8-pole connector with 5m cable
1				0	(13)	Transducer mounting
Section   Sect	х			Ť		wall-mounting plate
Variable   Variable	x			3		pole installation kit with rain shield
1	х			4	(14)	Humidity concer type
(15)   Sensor protection / filter   PPS plastic grid with stainless steel mesh   PPS plastic grid with stainless steel mesh   PPS plastic grid with stainless steel filter   stainless steel grid   sintered stainless steel grid   stainless steel grid				1	(1-7)	general application (standard)  HUMICAP® 180
A	X			4	(15)	
C   Sintered stainless steel fliter   Stainless steel fliter   Stainless steel grid     x   C   Probe installation kit   No instal					. ,	PPS plastic grid with stainless steel mesh
(16)	х					sintered stainless steel filter
X	^				(16)	Probe installation kit
(17) Operating instructions: language  x					-	no installation kit mounting flange
2   German   French					(17)	Operating instructions: language
X   Calibration   SA1   Calibration   Calibration to ISO 9001 standard (calibration report is available on request)   (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18)   Order code   -				2		German
x   3A1	х			3	(12)	
Order code	х			3A1	(10)	
Order code				(1)		(2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18)
Order example 907023/335 - L - 0 - A - 1 - 0 - 1 - B C A - J - 1 - 0 0 - A - 0 - 1 - A - G - 2 - 3 A 1	Orde	er code	Г	(')		
	Orde	er example	9	07023	/335 -	- L - 0 - A - 1 - 0 - 1 - BCA - J - 1 - 00 - A - 0 - 1 - A - G - 2 - 3A1

Internet:

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net

www.jumo.net

## JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

# JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 12/32

# Humidity and temperature transducers with a vapor-tight probe, Type 907023/337A

- for temperatures ranging from -70 to +180°C
- for industrial and meteorological applications with moderate humidity
- small, vapor-tight stainless steel probe for remote measurement
- outstanding accuracy and stability
- graphical trend display and measurement history of the past year
- **■** corrosion-resistant housing, IP65 rating
- retraceable to NIST



Transducer for the most demanding process conditions, and for meteorological applications

This humidity and temperature transducer is designed for the most demanding applications.

The stainless steel probe is small and slim, which means that it can be easily installed in locations where space is tight.

Compared with type 907023/333, the probe for this transducer is vapor-tight and covers a much wider temperature range.

# For moderate humidities

The transducer has been conceived for demanding measurement tasks, but with the atmospheric humidity still within the moderate range.

For high-humidity applications, however, we recommend type 907023/337B with a heated probe.

# **Numerous mounting options**

Vapor-tight mounting in a duct or pipe can be implemented using Swagelok screw fittings. A duct installation kit and, in addition, a mounting kit for meteorological outdoor measurements are available as an option.



**Duct installation kit** 

# Graphical trend and development display

The instrument series can optionally be supplied with a large numerical/graphical display on which the process development can easily be monitored and traced back for up to a year.

The measurement data can be transferred to a PC for further processing, and for copying to other programs.



With the help of the display, the user is able to trace measurement trends back for up to a year.

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany +49 661 6003-0

Phone: Fax: +49 661 6003-607 e-mail: mail@jumo.net Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

+44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

**JUMO Process Control, Inc.** 8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 13/32

# Order details: Humidity and temperature transducers with a vapor-tight probe, type 907023/337A

			(1)	Basic version			
9	07023	/337A		Humidity and temperature transdu	cer with a vapor-tight probe		
		S T	(2)	Sensor cable / cable length 2 m cable			
		T U		5m cable 10m cable			
			(3)	Additional temperature probe			
		0	(4)	not for type 907023/337A  Parameters			
		A B	(+)	RH + T	. m dT		
		ь	(5)	RH+T+Td+Tdf+a+x+Tw+ppm+pw <b>Display</b>	+pws+n+a1		
		0	,	no display graphics LCD with background lig	hting		
		-	(6)	Supply	nung		
		0 1		10 – 35V DC, 24V AC electrical isolation for outputs 10 -	- 35 V DC. 24 V AC		
		2		universal AC supply (100 – 240 V A	(C) and US connecting cable		
		4		universal AC supply (100 – 240 V A	C) and EUR connecting cable	е	
		5 6		Supply 10 – 35 V DC, 24 V AC electrical isolation for outputs 10 – universal AC supply (100 – 240 V A	C) and AUS connecting cable	е	
		1	(7)	Signal output (and serial RS232 analog output channel (Ch1+Ch2+ analog output channel (Ch1+Ch2	interface or (optionally) cor	nmunication module)	
		2		analog output channel (Ch1+Ch2+	Ch3) 0 – 20mA		
		4		analog output channel (Ch1+Ch2+	Ch3) 0 – 1V Ch3) 0 – 5V		
Ch1 I	Ch2 I	5 Ch3	(8)	analog output channel (Ch1+Ch2+	·Ch3) 0 – 10 V Ch2 and Ch3		
		A B	(0)	Analog output signals for Ch1, C no third analog output (choose A i	f not required)		
BCDEFGHJK	ВС	Č		RH T	(0 – 100 % RH) (see (9) output range temp.)		
E	D E F	C D E F		Td (-20 to +100°C) Tdf (-20 to +100°C) a (0 - 600g/m³)	(-4 to +212°F) (-4 to +212°F) (0 – 262gr/ft3)		
F G	G	G		a (0 – 600 g/m³) Tw (0 to 100°C)	(+32 to +212°F)		
Ĥ	Н	Ĥ		Tw (0 to 100°C) x (0 – 500g/kg d.a.) h (-40 to +1500kJ/kg)	(0 – 3500 gr/lb) (-9.5 to +652.6 Btu/lb)		
Ķ	J K L	K L		ppm (0 – 5000) pw (0 – 1000hPa)	(0 – 5000) (0 – 14.5psi)		
M	M	M		pws (0 - 1000hPa)	(0 – 14.5 psi)		
L M N X	N X	N X		dT (-10 to +50°C) Define special scaling	(14 to +122°F) Ch1:	Ch2:	Option Ch3:
•		Α	(9)	Analog output range for temper	ature		•
		B		no temperature output (choose A -40 to +60°C	(-40 to +140°F)		
		D		-40 to +80°C -40 to +120°C	(-40 to +176°F) (-40 to +248°F)		
		E F		-40 to +180°C -20 to +60°C	(-40 to +356°F) (-4 to +140°F)		
		G H		-20 to +80°C -20 to +120°C	(-4 to +176°F) (-4 to +248°F)		
		J K		-20 to +180°C 0 to 60°C	(-4 to +356°F) (32 to 140°F)		
		L		0 to 100°C	(32 to 212°F)		
		M N		0 to 120°C 0 to 180°C	(32 to 248°F) (32 to 356°F)		
		P X		-60 to +60 °C Specifics:	(-76 to +140°F)		
		1	(10)	Output unit metric			
		2		non-metric			
		0 0	(11)	Option for module slot 1 no module		Option for module slot 2 no module	
		1 1 2 3		relay output RS485 serial interface (electrically		relay output third analog output (required	t if Ch3 (8) is selected)
			(12)	Cable bushings		a analog catput (roquirou	(-) 10 00:00:00
		A B		cable gland M 20x1.5 conduit fitting NPT 1/2"			
		C		8-pole connector with 5m cable 8-pole mating connector equipped	d with screw terminals		
			(13)	Transducer mounting			
		0 1		standard mounting wall-mounting plate			
		2		pole installation kit pole installation kit with rain shield	l		
		4	(4 4)	DIN rail kit			
		1	(14)	Humidity sensor type general application (standard)		HUMICAP® 180 HUMICAP® 180C	
		4	(15)	sensor with cleaning function  Sensor protection / filter		HUMICAP® 180C	
		A	()	PPS plastic grid with stainless ste	el mesh		
		B C		PPS plastic grid sintered stainless steel filter			
		D	(16)	stainless steel grid  Probe installation kit			
		A C	, . <b>-</b> ,	no installation kit duct installation kit			
		D		cable gland AGRO			
		K L		Swagelok NPT 1/2" Swagelok ISO 3/8"			
		1	(17)	Operating instructions: language English	e		
		2		German			
		3	(18)	French Calibration			
		3A1	()	calibration to ISO 9001 standard (	calibration report is available	on request)	
		(1)	)	(2) (3) (4) (5)	(6) (7) (8)	(9) (10) (11)	(12) (13) (14) (15) (16) (17)
ler code							
er example	9	07023	/337A	- S - 0 - A - 1	- 0 - 1 - BCA	- B - 1 - 00 -	A - 0 - 1 - A - A - 2 -

Internet:

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-607
e-mail: mail@jumo.net

www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK

Phone: +44 1279 635533 Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 14/32

# Humidity and temperature transducers with a heated probe for high-humidity applications, Type 907023/337B

- for temperatures ranging from -70 to +180°C
- for industrial and meteorological applications with a high level of humidity
- excellent performance data in condensing atmospheres, thanks to the heated probe
- small, vapor-tight stainless steel probe for remote measurement
- outstanding accuracy and stability
- graphical trend display and measurement history of the past year
- **■** corrosion-resistant housing, IP65 rating
- retraceable to NIST



Transducer for the most demanding process conditions, and for meteorological applications (Picture: optionally with an additional temperature sensor)

This humidity and temperature transducer is available in two versions:

- with a heated probe: for dew point measurements in almost condensing atmospheres
- with a heated probe and an additional temperature sensor: for measuring relative humidity in almost condensing atmospheres

# Correct humidity measurements with condensation

This unique, heated probe enables fast and reliable dew point measurements in environments in which humidity is near the saturation point. The heated sensor quickly returns to producing correct measurements, even with short-term condensation.

Since the probe temperature lies above the ambient temperature, the humidity level stays within the ambient humidity.

With accurate temperature measurement, the dew point of the environment can, however, be precisely calculated.

An additional temperature sensor is necessary for determining relative humidity. The ambient temperature measured in this way serves to calculate relative humidity and derived humidity variables.

# **Numerous mounting options**

Vapor-tight mounting in a duct or pipe can be implemented using Swagelok screw fittings. A duct installation kit and, in addition, a mounting kit for meteorological outdoor measurements are available as an option.



**Duct installation kit** 

# Graphical trend and development display

The instrument series can optionally be supplied with a large numerical/graphical display on which the process development can easily be monitored and traced back for up to a year.

The measurement data can be transferred to a PC for further processing, and for copying to other programs.



With the help of the display, the user is able to trace measurement trends back for up to a year.

Phone:

e-mail:

Internet:

Fax:

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany +49 661 6003-0 +49 661 6003-607 mail@jumo.net

www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

+44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023 Page 15/32

# Order details: Humidity and temperature transducers with a heated probe for high-humidity applications, type 907023/337B

907023/3371	(1) 3	Basic version  Humidity and temperature transducer with a heated probe for	r high-humidity applications
	(2)	Dew point probe / cable length 2m cable	
	S T	5m cable	
· ·	J <b>(3)</b>	10m cable Additional temperature probe	
	0 1	no additional temperature probe	
	2	2 m cable 5 m cable	
:	3 <b>(4)</b>	10m cable Parameters	
(		Td+Tdf+x+pw	(dew point probe only) (with additional T probe)
'	(5)	RH+T+Td+Tdf+a+x+Tw+ppm+pw+pws+h+dT <b>Display</b>	(with additional 1 probe)
	D ()	no display graphics LCD with background lighting	
	(6)	Supply	
	0 1	10 – 35V DC, 24V AC electrical isolation for outputs 10 – 35V DC, 24V AC	
	2 3	universal AC supply (100 – 240 V AC) universal AC supply (100 – 240 V AC) and US connecting cab universal AC supply (100 – 240 V AC) and EUR connecting cab universal AC supply (100 – 240 V AC) and UK connecting cab	le
	4 5	universal AC supply (100 – 240V AC) and EUR connecting ca	ble
	5 6	universal AC supply (100 – 240 V AC) and AUS connecting cap universal AC supply (100 – 240 V AC) and AUS connecting cap	ble
	( <b>7)</b>	Signal output (and serial RS232 interface or (optionally) of	ommunication module)
	2	analog output channel (Ch1+Ch2+Ch3) 4 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 1V analog output channel (Ch1+Ch2+Ch3) 0 – 5V analog output channel (Ch1+Ch2+Ch3) 0 – 5V analog output channel (Ch1+Ch2+Ch3) 0 – 10V	
	3 4	analog output channel (Ch1+Ch2+Ch3) 0 - 1V analog output channel (Ch1+Ch2+Ch3) 0 - 5V	
Ch1  Ch2  Ch	5 3 <b>(8)</b>	analog output channel (Ch1+Ch2+Ch3) 0 – 10V  Analog output signals for Ch1, Ch2 and Ch3	
	۹ ``	no third analog output (choose A if not required)	
cl cl (	3	RH (0 – 100 % RH) T (see (9) output range temp	o.)
D D [	) = F	Td (-20 to +100°C) (-4 to +212°F) Tdf (-20 to +100°C) (-4 to +212°F)	
F F G G	F G	a (0 – 600 g/m³) (0 – 262 gr/ft3) Tw (0 to 100 °C) (+32 to +212 °F)	
н н н	-1	x (0) - 500 g/kg d.a. $(0 - 3500 gr/lb)$	
KI KI I	J <	ppm (0 – 5000) (0 – 5000)	
M M N	L /I	pw (0` – 1000hPa) (0 – 14.5psi) pws (0 – 1000hPa) (0 – 14.5psi)	
	Υ	dT (-10 to +50 °C) (14 to +122 °F)  Define special scaling Ch1:	Ch2: Option Ch3:
	(9)	Analog output range for temperature	
[	A 3	no temperature output (choose A if not required) -40 to +60°C (-40 to +140°F)	
)		-40 to +80°C (-40 to +176°F) -40 to +120°C (-40 to +248°F)	
	Ē	-40 to +180°C (-40 to +356°F) -20 to +60°C (-4 to +140°F)	
(	3	-20 to +80°C (-4 to +176°F)	
	∃ J	-20 to +120°C (-4 to +248°F) -20 to +180°C (-4 to +356°F)	
	< L	0 to 60°C (32 to 140°F) 0 to 100°C (32 to 212°F)	
Ŋ	N N	0 to 120°C (32 to 248°F) 0 to 180°C (32 to 356°F)	
I	>	-60 to +60°C (-76 to +140°F)	
•	(10)	Specifics: Output unit	
	1	metric non-metric	
	(11)	Option for module slot 1	Option for module slot 2
	0 · · 1	no module relay output	no module relay output
	3	RS485 serial interface (electrically isolated)	third analog output (required if Ch3 (8) is selected)
	(12)	Cable bushings cable gland M 20x1.5	
I (	3	conduit fitting NPT 1/2" 8-pole connector with 5m cable	
[		8-pole mating connector equipped with screw terminals	
	( <b>13)</b>	Transducer mounting standard mounting	
	1	wall-mounting plate pole installation kit	
;	3 4	pole installation kit with rain shield DIN rail kit	
	(14)	Humidity sensor type	(B)
	5 ` ´ 6	combined sensor combined sensor with cleaning function	HUMICAP <sup>®</sup> 180C HUMICAP <sup>®</sup> 180C
	(15)	Sensor protection / filter	1.6
(	A C	PPS plastic grid with stainless steel mesh sintered stainless steel filter	
	)	stainless steel grid	
	(16)	Probe installation kit no installation kit	
(	C K	duct installation kit Swagelok NPT 1/2"	
	Ĺ	Swagelok ISO 3/8" duct installation kit (RH +T probes)	
	2	Swagelok NPT 1/2" and Swagelok NPT 1/8" (RH +T) Swagelok ISO 3/8" and Swagelok ISO 1/8" (RH+T)	
·	₹ (17)	Swagelok ISO 3/8" and Swagelok ISO 1/8" (RH+T)  Operating instructions: language	
	1 2	English	
	2 3	German French	
3A	(18)	Calibration calibration to ISO 9001 standard (calibration report is available	le on request
3A	•	called a service to the control of the called the calle	

Delivery address: Mackenrodtstraße 14,

96039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607

Fax: +49 661 6003-(
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 16/32

# Humidity and temperature transducers for pressure lines and chambers, Type 907023/338

- for temperatures ranging from -70 to +180°C
- installation using a ball valve, for installation and removal under pressure
- variable probe installation depth through a sliding gland
- for measurements in the pressure range from 0 40bar
- outstanding accuracy and stability
- graphical trend display and measurement history of the past year
- **■** corrosion-resistant housing, IP65 rating
- two probe shaft lengths are available
- retraceable to NIST



Transducer for mounting in pressure lines and chambers, from which the probe can be removed without interrupting the operation

This humidity and temperature transducer is designed for processes subjected to pressures.

# Installation and removal under pressure

The probe can be directly inserted into the process without interrupting the operation, and without having to vent or reduce the process pressure beforehand.

The probe head is inserted by means of a ball valve which is mounted in the pressure line or on the chamber wall.

The sliding cap nut is tightened by hand, so that the probe is initially in the minimum installation position. The ball valve is subsequently opened, which exposes the probe to the process pressure. Using a press tool, the probe is then pressed to the required installation depth and fixed with the cap nut.

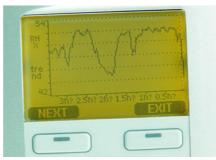
The probe can be installed during operation under process pressures up to 10bar.

For correct measurement results, the prevailing process pressures can be entered in the transducer memory via a serial interface or the operator panel.

# Graphical trend and development display

The transducers can optionally be supplied with a large numerical/graphical display on which the process development can be monitored easily and traced back for up to a year.

Maximum and minimum values of the past year can be graphically displayed in a simple manner



The display can be used to trace measurement trends back for up to a year.

# Outputs and supply options for all needs

The output options include up to three analog outputs, RS232 and RS485 interfaces as well as alarm relays.

The possible supply voltage ranges from 10 to 35 V DC. A wide-range power supply module ensures that the transducers can be connected to all supply voltages used around the globe.

Fax:

e-mail:

Internet:

JUMO GmbH & Co. KG Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0 +49 661 6003-607 mail@jumo.net

www.jumo.net

**JUMO Instrument Co. Ltd.** JUMO House

Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533 +44 1279 635262

e-mail: sales@jumo.co.uk

Internet: www.jumo.co.uk

**JUMO Process Control, Inc.** 8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Page 17/32

Data Sheet 90.7023

# Order details: Humidity

	007000/000	(1)	Basic version	
	907023/338		Humidity and temperature transducer for pressure lines and chambers	
	V	(2)	Sensor cable / cable length	
	W		2m cable for 232mm probe 5m cable for 232mm probe	
	X 1		10m cable for 232mm probe 2m cable for 454mm probe	
	2		5m cable for 454mm probe	
	3		10m cable for 454mm probe	
	0	(3)	Additional temperature probe not for type 907023/338	
		(4)	Parameters	
	A B		RH + T RH+T+Td+Tdf+a+x+Tw+ppm+pw+pws+h+dT	
		(5)	Display	
	0	(-)	no display	
	1	(6)	graphics LCD with background lighting	
	0	(0)	<b>Supply</b> 10 – 35V DC, 24V AC	
	1 2		electrical isolation for outputs 10 – 35V DC, 24V AC universal AC supply (100 – 240V AC) universal AC supply (100 – 240V AC) and US connecting cable universal AC supply (100 – 240V AC) and EUR connecting cable universal AC supply (100 – 240V AC) and UK connecting cable universal AC supply (100 – 240V AC) and UK connecting cable	
	3		universal AC supply (100 – 240 V AC) and US connecting cable	
	4		universal AC supply (100 – 240V AC) and EUR connecting cable	
	6		universal AC supply (100 – 240 v AC) and AOS connecting caple	
		(7)	Signal output (and serial RS232 interface or (optionally) communic	ation module)
	1 2		analog output channel (Ch1+Ch2+Ch3) 4 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 20mA	
	3		Signal output (and serial RS232 interface or (optionally) communic analog output channel (Ch1+Ch2+Ch3) 4 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 20mA analog output channel (Ch1+Ch2+Ch3) 0 – 1V analog output channel (Ch1+Ch2+Ch3) 0 – 5V analog output channel (Ch1+Ch2+Ch3) 0 – 10V	
	4 5		analog output channel (Ch1+Ch2+Ch3) 0 – 5V analog output channel (Ch1+Ch2+Ch3) 0 – 10V	
Ch1  (	Ch2   Ch3	(8)	Analog output signals for Ch1, Ch2 and Ch3	
	B B		no third analog output (choose A if not required)	
Ĉ	C C		T (see (9) output range temp.)	
B C D E F G H	D D		Td (-20 to +100°C)	
F	E E			
G	G G		a (0 – 5009/m²) (0 – 2029/m3) Tw (0 to 100°C) (+32 to +212°F) x (0 – 500g/kg d.a.) (0 – 3500gr/lb) h (-40 to +1500kJ/kg) (-9.5 to +652.6Btu/lb) ppm (0 – 5000) (0 – 5000) pw (0 – 1000hPa) (0 – 14.5psi)	
J	J J		h (-40 to +1500kJ/kg) (-9.5 to +652.6 Btu/lb)	
J K	K K		ppm (0 – 5000) (0 – 5000) pw (0 – 1000hPa) (0 – 14.5psi)	
L M	M M		pws (0 - 100011Fa) (0 - 14.5psi)	
N X	N N X X		dT (-10 to +50°C) (14 to +122°F)	Option Ch3:
^	^  ^	(9)	Define special scaling Ch1: Ch2: Analog output range for temperature	Option Cris
	Α	(0)	no temperature output (choose A if not required)	
	B C		-40 to +60°C (-40 to +140°F) -40 to +80°C (-40 to +176°F)	
	D		-40 to +120°C (-40 to +248°F)	
	E		-40 to +180°C (-40 to +356°F) -20 to +60°C (-4 to +140°F)	
	Ğ		-20 to +80°C (-4 to +176°F)	
	Н		-20 to +120°C (-4 to +248°F) -20 to +180°C (-4 to +356°F)	
	K		0 to 60°C (32 to 140°F)	
	L M		0 to 100°C (32 to 212°F) 0 to 120°C (32 to 248°F)	
	N		0 to 180°C (32 to 356°F)	
	P X		-60 to +60°C (-76 to +140°F)	
	^	(10)	Specifics: Output unit	
	1		metric	
	2		non-metric Option for module clat 1	for modulo clot 2
	01 0	(11)	Option for module slot 1 Option no module no module	for module slot 2 ule
	1 1		relay output relay ou	itput
	2 3	(12)		alog output (required if Ch3 (8) is selected)
	А		Cable bushings cable gland M 20x1.5	
	В		conduit fitting NPT 1/2"	
	C		8-pole connector with 5m cable 8-pole mating connector equipped with screw terminals	
		(13)	Transducer mounting	
	0		standard mounting wall-mounting plate	
	2		pole installation kit	
	3		pole installation kit with rain shield DIN rail kit	
	4	(14)	Universidity a second true	
	1		general application (standard) HUMIC	AP <sup>®</sup> 180 AP <sup>®</sup> 180C
	4	(45)		AP - 180C
	А	(15)	Sensor protection / filter PPS plastic grid with stainless steel mesh	
	В		PPS plastic grid	
	C		sintered stainless steel filter stainless steel grid	
		(16)	Probe installation kit	
	M		ball valve installation kit (ISO 1/2")	
	N V		pressure connection NPT 1/2" pressure connection ISO 1/2"	
	·	(17)	Operating instructions: language	
	1		English German	
	2		French	
	_	(18)	Calibration	
			calibration to ISO 9001 standard (calibration report is available on requ	est)
	3A1		·	•
	3A1 (1	)	(2) (3) (4) (5) (6) (7) (8) (9)	(10) (11) (12) (13) (14) (15) (16)

Phone:

e-mail:

Internet:

Fax:

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany +49 661 6003-0 +49 661 6003-607 mail@jumo.net

www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

+44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



**Data Sheet 90.7023** 

Page 18/32

# Order details: Accessories for humidity and temperature transducers for industrial applications

# (1) Basic version

							(1)	Basic version
					907023	/80		Software package
					907023	/81		Installation kits
					907023	/82		Screw fittings
					907023	/90		Filter/sensor protection (12mm dia.)
		Ī			907023	/91		Replacement humidity sensor
			ſ		907023	/92		Replacement temperature sensor
					907023	/93		Humidity sensor checks
X X X X X X X X X X X X X X X X X X X					2 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9	893 247 894 895 896 897 898 899 900	(2)	Software package PC software and cable Installation kits wall mounting kit (plastic mounting plate) DIN rail mounting kit (including plastic mounting plate) pole installation kit (for pipes from 30 to 100mm) rain protection installation kit duct installation kit for type 907023/333 duct installation kit (RH probe) for type 907023/337 duct installation kit (T probe) for type 907023/337 mounting flange for type 907023/335 meteorological installation kit for type 907023/337
x	X X X X					902 903 904 905 906 907	(2)	ball valve installation kit for type 907023/338 (0 — 40bar)  Screw fittings cable glands for types 907023/333 and 907023/337 pressure-tight Swagelok screw fitting (RH probe) ISO 3/8" for type 907023/337 pressure-tight Swagelok screw fitting (T probe) ISO 1/8" for type 907023/337 pressure-tight Swagelok screw fitting (RH probe) NPT 1/2" for type 907023/337 pressure-tight Swagelok screw fitting (T probe) NPT 1/8" for type 907023/337
		x x x			8	890 891 892	(2)	Filter/sensor protection (12mm dia.) sintered stainless steel filter PPS plastic grid filter with stainless steel mesh PPS plastic grid filter
			x		8	814	(2)	Replacement humidity sensor HUMICAP® 180
				x		005	(2)	Replacement temperature sensor Pt 100 1/3 DIN Class B to DIN EN 60 751
				x x x	3	820 821 822	(2)	Humidity sensor checks 33% RH magnesium chloride 55% RH magnesium nitrate 76% RH sodium chloride
•	•		•		•			

Order code Order example

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany

Phone: +49 661 6003-0 Fax: +49 661 6003-607 e-mail: mail@jumo.net Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House

Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533 +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

**JUMO Process Control, Inc.** 8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 19/32

### **Stock versions:** Accessories for humidity and temperature transducers for industrial applications

(1)		(2)	Sales No.
	-		
907023/90	<del>-</del>	890	90/00465143
907023/90	=	891	90/00465144
907023/90	<del>-</del>	892	90/00465145
907023/92	-	005	90/00389454
907023/93	-	820	90/00332758
907023/93	-	821	90/00332759
907023/93	=	822	90/00332760

Delivery address: Mackenrodtstraße 14,

### JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

### JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 20/32

# Intrinsically safe industrial transducers for humidity, temperature and derived variables

- hygrothermal transducers measure relative humidity in air, and temperature
- option: calculation of dew point, absolute humidity, mixing ratio and wet bulb temperature
- new user-friendly, modular transducer concept
- intelligent interchangeable probes with storage of all calibration coefficients
- safe operation of the instrument as a whole in Category 1G / Zone 0 and 1D / Zone 20 areas, with protective cover
- retraceable to NIST (including certificate)



These intrinsically safe industrial transducers are the first choice for measuring humidity, temperature and derived variables

These new, intrinsically-safe industrial transducers have been developed in response to the need of accurately monitoring humidity in hazardous areas, and without risk. The series sets entirely new standards with regard to ease of installation and user friendliness.

The modular design consists of four parts (wall bracket, housing base, electronics unit and probe) that can be detached from each other, a feature which makes installation, operation and maintenance considerably

In combination with five interchangeable probes, the transducers lend themselves to the most diverse applications for almost any measurement task.

They no longer need to be recalibrated when the probes are swapped, because all the calibration coefficients are already stored within the probe itself and transferred to the central unit after connection.

Apart from this, the probe design does not differ from that of the field-proven industrial series models which are available with 2m, 5m or 10m long sensor cables. The special sensor heads are available in various styles, which permit application in vacuum or the  $0-100\,\mathrm{bar}$  overpressure range, and with high process temperatures up to  $180\,^{\circ}\mathrm{C}$ .

The transducers are extremely rugged and incorporate the very latest sensor technology.

They can be operated safely and reliably inside areas where a Category 1 (Zone 0) explosion hazard is permanently present.

The transducers are extremely versatile, thanks to the microprocessor-based electronics and the large variety of options. The user is able to specify the transducer configuration directly when ordering. It can also be subsequently altered on site.

Using the optional software expansion, the integral microprocessor calculates humidity variables such as dew point Td (°C), absolute humidity a (g / m³), mixing ratio x (g / kg) and wet bulb temperature Tw (°C).

The intrinsically safe transducers are equipped with an analog output (4 – 20mA) as standard. They can optionally be upgraded with a second analog output and an integrated LC display /operator panel.

When connecting up the supply voltage  $(12-28 \, \text{V DC})$  the use of safety barriers or intrinsically safe power supply units (available from outside suppliers) is mandatory for operation in locations with an explosion hazard (see Technical data).

All transducers are equipped with sensors that feature state-of-the-art thin-film technology. More than 20 years of experience have gone into their development and continuous improvement.

The sensors are distinguished by their supreme accuracy, reliability and stability.

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fay: 449 661 6003-607

Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway

Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533 Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 21/32

# **Technical data**

Styles

# Type 907023/61

Intrinsically safe humidity and temperature transducer for wall mounting, operating temperature -40 to +60  $^{\circ}\text{C}$ 

## Type 907023/63

Intrinsically safe humidity and temperature transducer with a small sensor head on a 2m sensor cable, operating temperature -40 to +120 °C

### Type 907023/64

Intrinsically safe humidity and temperature transducer with a pressure-proof stainless steel sensor head on a 2m sensor cable for process pressures from 0-10 MPa~(0-100 bar), operating temperature -40 to +180 °C

# Type 907023/65

Intrinsically safe humidity and temperature transducer with a stainless steel sensor head on a 2m sensor cable,

operating temperature -40 to +180°C

# Type 907023/68 and 907023/68L (long version, shaft length 400mm)

Intrinsically safe humidity and temperature transducer with a pressure-proof stainless steel sensor head on a 2m sensor cable for process pressures from  $0-4\,\text{MPa}$  (0 – 40 bar), sensor head with sliding clamping thread; operating temperature -40 to +180 °C

### Note:

For operation in potentially hazardous surroundings, it is mandatory to connect up the supply voltage (12 – 28V DC) via safety barriers (available from outside suppliers) or intrinsically safe power supply units. For the operation in Category 1 (Zone 0), an intrinsically safe power supply unit (e. g. type STAHL 9160/13-11-11) must be used for each channel. When operating in Categories 2 + 3 (Zone 1 + 2), it is sufficient to use safety barriers (e. g. STAHL 9001/51-280-091-141).

# These devices are not supplied by JUMO!

For more details, see the operating instructions or visit http://www.stahl.de/de/ex/sicherheitsbarrieren.htm

# Measured variables

Relative humidity

Range 0 - 100% RH

Accuracy (taking into account non-linearity and reproducibility)

after calibration against highly accurate,

certified humidity standards  $\pm 1\%$  RH (0 - 90 % RH)  $\pm 2\%$  RH (90 - 100 % RH) Salt solutions (ASTM E104-85)  $\pm 2\%$  RH (0 - 90 % RH)  $\pm 3\%$  RH (90 - 100 % RH)

Response time  $t_{0.9}$  at 20 °C in stationary air (with sintered filter)15sec

Humidity sensors:

HUMICAP® 180 for standard applications

 $\mbox{HUMICAP}^{\mbox{\scriptsize @}}\mbox{180L2}$  with substantial chemical contamination

**Temperature ranges** -40 to +180 °C (depending on the probe selected)

Accuracy of the electronics at 20 °C, typically  $\pm 0.1$  °C Temperature drift of electronics  $\pm 0.005$  °C/°C

Temperature sensor Pt1000 1/3 DIN Class B to EN 60 751

Derived variables (option)

with probe with probes Typical ranges 907023/S61 907023/\$63, .../\$64, .../\$65, .../\$68 Dew point T<sub>d</sub> -40 to +60 -40 to +100 [°C] [g/kg dry air] Mixing ratio x 0 to 160 0 to 500 Absolute humidity a 0 to 160 0 to 600 [g/m<sup>3</sup>] Wet bulb temperature T<sub>w</sub> 0 to 60 0 to 100 [°C]

(The accuracy of the derived variable depends on the accuracy of the humidity/temperature measurement and the corresponding working point.)

Ex classifications as per CENELEC (PTB)

(analog outputs)

(94/9/EC, ATEX100a) II 1 G EEx ia IIC T4

PTB 00 ATEX 2112 X

Limit values Ui = 28V, Ii = 100mA, Pi = 700mW, Ci = 1 nF, Li = 0 H

Ambient conditions  $T_{amb} = -20 \text{ to } +60 \,^{\circ}\text{C}$ 

P<sub>amb</sub> = 800 to 1100hPa II 1D (IP 65 T = 70°C)

Dust protection II 1D (IP 65 T = 70 °C (with protective cover) VTT04 ATEX 023X

General data

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany

Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

4 - 20mA (2-wire technique)

0.005% / °C of full scale

0.05% of full scale

12 - 28V DC

15 - 28V DC

-20 to +60°C

Page 22/32

Outputs 2 analog outputs

(one comes as standard, one is optional)

Accuracy of the analog outputs at 20°C

Temperature drift

Supply voltage

when using the service interface Operating temperature range Electronics with LC display

Storage temperature range -40 to +70 °C Connections screw terminals 0.33 – 2.0 mm<sup>2</sup>

Cable gland Pg 11 for sensor cable with 5 – 12mm dia.

Conduit fitting Pg 11/NPT 1/2"-14
Housing material G-AlSi10 Mg (DIN 1725)

Housing dimensions L 164mm x W 115mm x H 62mm

Housing weight 950

EMC as per EN 61 326-1: 1997 + Annex 1: 1998

(EN 61 000-4-5 only when using external

surge voltage protectors)

**Probes** 907023/S61 probe for wall mounting

for the temperature range -40 to +60°C

907023/S63 probe, small style

for the temperature range -40 to +120°C

907023/S64 probe for high pressures

for the temperature range -40 to +180°C for the pressure range 0 – 10MPa (0 – 100bar)

907023/S65 probe for high temperatures

for the temperature range -40 to +180°C

5.5mm

907023/S68 und 907023/S68L probe for pressure lines

for the temperature range -40 to +180°C for the pressure range 0 – 4MPa (0 – 4bar)

Probe cable diameter (all types)

Probe cable length

Sensor protection

2m (standard) 5m or 10m (option)

12mm/10mm

**Options**Second analog output
4 – 20 mA (2-wire technique)
Housing with display/operator panel
2-line LC display

Housing with display/operator panel Character size (1st line/2nd line)

Extension for derived variables

dew point temperature  $T_d$ , mixing ratio x,

absolute humidity a, wet bulb temperature T<sub>w</sub> sintered filter 38µm from acid-resistant, non-rusting

stainless steel AlSi 316L (Mat. Ref. 1.4404), stainless steel grid AlSi 316L (Mat. Ref. 1.4404), PPS grid with non-rusting stainless steel mesh

AlSi 316 (Mat. Ref. 1.4436), PPS grid

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany 36035 Fulda, Germany

Postal address: Phone: +49 661 6003-0 Fax: +49 661 6003-607 e-mail: mail@jumo.net Internet: www.jumo.net

# JUMO Instrument Co. Ltd.

JUMO House

Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533 +44 1279 635262 e-mail: sales@jumo.co.uk

Internet: www.jumo.co.uk

# JUMO Process Control, Inc.

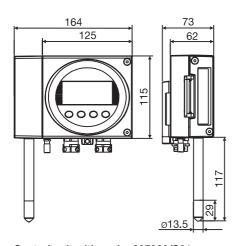
8 Technology Boulevard Canastota, NY 13031, USA 315-697-JUMO Phone: 1-800-554-JUMO

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us

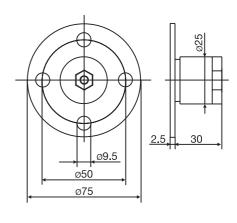


Data Sheet 90.7023

# **Dimensions**



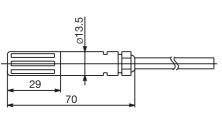
49.5 53 B, ⊕ <u>B</u> (⊕ B-B (1.5:1)

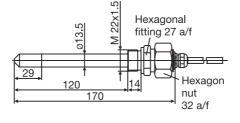


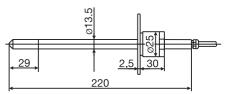
Central unit with probe 907023/S61 Type 907023/61

Mounting bracket

Installation kit and mounting flange



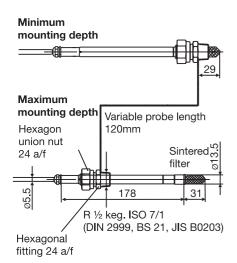




**Probe** 907023/S63

Probe 907023/S64

Probe 907023/S65 including mounting flange (option)



**Probe** 907023/S68 and .../S68L

All dimensions in mm.

Phone:

e-mail:

Internet:

Fax:

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany +49 661 6003-0 +49 661 6003-607 mail@jumo.net

www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533 +44 1279 635262

e-mail: sales@jumo.co.uk

Internet: www.jumo.co.uk

Phone: 315-697-JUMO 1-800-554-JUMO 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us

JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA



Data Sheet 90.7023

Page 24/32

# **Order details:**

Intrinsically safe industrial transducers for humidity, temperature and derived variables

with Ex approval as per ATEX 100a 94/9/EC (PTB)

# (1) Basic version

	907023/61	Intrinsically safe humidity and temperature transducer for wall mounting, operating temperature -40 to +60 °C
x x	<b>(2)</b> 11 15	Output variables RH + T RH + T + Td + a + Tw + x
x x x x x x x	(3) .   0 1   1 2   2 3   3 4   4 5   5 6   6 9   9	Analog output variables, channel 1 (and channel 2, optional)  If normally only one channel is used, then choose 0 for channel 2!  RH $0-100\%$ RH  T (see Temperature ranges) $Td^2 -40 \text{ to } +60\text{ °C}$ $a^2 0-160\text{ g/m}^3$ $Tw^2 0 \text{ to } 60\text{ °C}$ $x^2 0-160\text{ g/kg}$ dry air  special scaling (details in plain text)
x x x	472 632 807 999	Temperature ranges -40 to +60°C -20 to +60°C 0 to 60°C special range (details in plain text)  Probe shaft/filter
x	2	120mm probe shaft length (60°C), PPS plastic grid filter with stainless steel mesh
x x x x x x x x	66) 000 427 777 789 801 803 805 823 826 828	Extra codes no extra code conduit fitting NPT 1/2" (for installation tube) non-metric unit (°F) integrated LC display/operator panel PPS plastic grid filter with PTFE membrane sintered stainless steel filter PPS plastic grid filter without stainless steel mesh special sensor for high chemical concentrations 2 analog output channels (channel 1 and channel 2), 4 — 20mA operating instructions in English
Ouda	r code	(1) (2) (3) (4) (5) (6)
	r code r example	907023/61 - 11 - 12 - 472 - 2 / 000

List extra codes in sequence, separated by commas.

The operands Td, a, Tw and x are only available if Option 15 has been selected under Output variables.

Delivery address: Mackenrodtstraße 14,

Postal address: Macket Houtstabe 14, 36039 Fulda, Germany Phone: +49 661 6003-0

Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 25/3

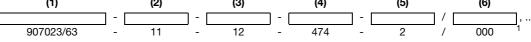
# **Order details:**

Intrinsically safe industrial transducers for humidity, temperature and derived variables with Ex approval as per ATEX 100a 94/9/EC (PTB)

# (1) Basic version

x	10 (6)	10m shaft length 60mm	m (120°C), PPS (	olast	tic grid filter w	ith s	stainles steel	mes	h		
×	10 <b>(6)</b>	10m shaft length 60mm  Extra codes	m (120°C), PPS	olast	tic grid filter w	ith s	stainles steel	mes	h		
x x	( <b>5</b> ) 2 5	Sensor cable lengths 2m shaft length 60mm 5m shaft length 60mm	m (120°C), PPS   m (120°C), PPS	olast olast	tic grid filter w	ith s	stainles steel	mes	h		
x	999	special range (details in	n plain text)								
X X	643 814	-20 to +120°C 0 to 100°C									
x x x	635	-20 to +80°C									
X X	474 478	-40 to +80°C -40 to +120°C									
	474	Temperature ranges									
х	9 9	special scaling (details	in plain text)								
x x	5 5 6 6	$x^2$ 0 – 500g/kg dry	y air								
x	4 4	$a^2$ 0 - 500 g/m <sup>3</sup> Tw <sup>2</sup> 0 to 100 °C									
X X	2 2 3 3	T (see Temperatu Td² -40 to +100°C									
х	1 1	RH 0 – 100% RH	•	011 0							
x	<b>(3)</b> . 0	Analog output variable If normally only one cha									
х	15	RH + T + Td + a + Tw +					_				
x	( <b>2)</b> 11	Output variables RH + T									
		operating temperature	-40 to +120°C								
	907023/63	with a small sensor hea		or c	able,						
		Intrinsically safe humidi	lity and tempera	ture	transducer						

Order example



List extra codes in sequence, separated by commas.

The operands Td, a, Tw and x are only available if Option 15 has been selected under Output variables.

Delivery address: Mackenrodtstraße 14,

Postal address: 36035 Fulda, Germany Phone: +49 661 6003-0

Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 26/32

# **Order details:**

Intrinsically safe industrial transducers for humidity, temperature and derived variables with Ex approval as per ATEX 100a 94/9/EC (PTB)

# (1) Basic version

	907023/64	Intrinsically safe humidity and temperature transducer with pressure-proof stainless steel sensor head on a 2m sensor cable, for process pressures from 0 – 10MPa (0 – 100bar) operating temperature -40 to +180°C
x x	11 15	Output variables RH + T RH + T + Td + a + Tw + x
x x x x x x	(3) .   0 1   1 2   2 3   3 4   4 5   5 6   6 9   9	Analog output variables, channel 1 (and channel 2, optional)  If normally only one channel is used, then choose 0 for channel 2!  RH $0-100\%$ RH  T (see Temperature ranges) $Td^2$ -40 to +100°C $a^2$ $0-500g/m^3$ $Tw^2$ 0 to 100°C $x^2$ $0-500g/kg$ dry air  special scaling (details in plain text)
× × × × × ×	474 478 485 635 643 648 814 830 999	Temperature ranges -40 to +80°C -40 to +120°C -40 to +180°C -20 to +80°C -20 to +120°C -20 to +120°C -20 to 180°C 0 to 100°C 0 to 180°C special range (details in plain text)
x x x	(5) 2 5 10	Sensor cable lengths (probe shaft/filter)  2m shaft length 150mm (180°C), sintered stainless steel filter  5m shaft length 150mm (180°C), sintered stainless steel filter  10m shaft length 150mm (180°C), sintered stainless steel filter
x x x x x x	(6) 000 427 777 789 804 823 826 828	Extra codes no extra code conduit fitting NPT 1/2" (for installation tube) non-metric unit (°F) integrated LC display/operator panel PPS plastic grid filter with stainless steel mesh special sensor for high chemical concentrations 2 analog output channels (channel 1 and channel 2), 4 – 20 mA operating instructions in English
Orde	er code	(1) (2) (3) (4) (5) (6) 
Orde	er example	907023/64 - 11 - 12 - 474 - 2 / 000

List extra codes in sequence, separated by commas.

05.06/00461046

The operands Td, a, Tw and x are only available if Option 15 has been selected under Output variables.

Delivery address: Mackenrodtstraße 14,

Postal address: Mackerhodistrate 14, 36039 Fulda, Germany Phone: 449 661 6003-0

Phone: +49 661 6003-0
Fax: +49 661 6003-607
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

Fax: +44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 27/32

# **Order details:**

Intrinsically safe industrial transducers for humidity, temperature and derived variables with Ex approval as per ATEX 100a 94/9/EC (PTB)

# (1) Basic version

0070	20.425	Intrinsically safe humidity and temperature transducer				
90702	23/65	with stainless steel sensor head on a 2m sensor cable, operating temperature -40 to +180°C				
	(2)	Output variables				
x x	11 15	RH + T RH + T + Td + a + Tw + x				
^	(3)	Analog output variables, channel 1 (and channel 2, optional)				
x	. 0	If normally only one channel is used, then choose 0 for channel 2!				
X	1 1 2 2	RH 0 – 100 % RH T (see Temperature ranges)				
x	3 3	Tg <sup>2</sup> -40 to +100°C				
x	4 4	a <sup>2</sup> 0 – 500g/m <sup>3</sup> Tw <sup>2</sup> 0 to 100°C				
X X	5 5 6 6	Tw <sup>2</sup> 0 to 100°C $x^2$ 0 – 500g/kg dry air				
x	9 9	special scaling (details in plain text)				
	(4)	Temperature ranges				
X X	474 478	-40 to +80°C -40 to +120°C				
x	485	-40 to +180°C				
X	635 643	-20 to +80°C				
X X	648	-20 to +120°C -20 to +180°C				
x	814	0 to 100°C				
x x	830 999	0 to 180°C special range (details in plain text)				
	(5)	Sensor cable lengths (probe shaft/filter)				
x	2 `	2m shaft length 150mm (180°C), sintered stainless steel filter				
x x	5 10	5m shaft length 150mm (180°C), sintered stainless steel filter 10m shaft length 150mm (180°C), sintered stainless steel filter				
^	(6)	Extra codes				
x	000	no extra code				
X X	427 777	conduit fitting NPT 1/2" (for installation tube) non-metric unit (°F)				
x	785	mounting flange, aluminium				
x	786 780	mounting flange, stainless steel				
X X	789 804	integrated LC display/operator panel PPS plastic grid filter with stainless steel mesh				
x	823	special sensor for high chemical concentrations				
x x	826 828	2 analog output channels (channel 1 and channel 2), 4 – 20mA operating instructions in English				
		(1) (2) (3) (4) (5) (6)				
Order code						

List extra codes in sequence, separated by commas.

05.06/00461046

Order example

The operands Td, a, Tw and x are only available if Option 15 has been selected under Output variables.

Phone:

e-mail:

Internet:

Fax:

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany +49 661 6003-0 +49 661 6003-607 mail@jumo.net

www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

+44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

# Order details:

Intrinsically safe industrial transducers for humidity, temperature and derived variables with Ex approval as per ATEX 100a 94/9/EC (PTB)

# (1) Basic version

_	(1)	Basic version
		Intrinsically safe humidity and temperature transducer
		with pressure-proof stainless steel sensor head on a 2m sensor cable,
907023/68		for process pressures from 0 – 4MPa (0 – 40bar),
		sensor head with sliding clamping thread;
		operating temperature -40 to +180°C
	(2)	Output variables
x	11	RH+T
X	15	RH + T + Td + a + Tw + x
X X X X X X	(3) 0 1 1 2 2 3 3 4 4 5 5 6 6 9 9	Analog output variables, channel 1 (and channel 2, optional)  If normally only one channel is used, then choose 0 for channel 2!  RH 0-100% RH  T (see Temperature ranges)  Td² -40 to +100°C  a² 0-500g/m³  Tw² 0 to 100°C  x² 0-500g/kg dry air  special scaling (details in plain text)
^		
x	474	Temperature ranges -40 to +80°C
x	478	-40 to +120°C
x	485	-40 to +180°C
Х	635	-20 to +80°C
X	643 648	-20 to +120°C
X X	814	-20 to +180°C 0 to 100°C
x	830	0 to 180°C
x	999	special range (details in plain text)
	(5)	Sensor cable lengths (probe shaft/filter)
x	2	2m shaft length 178mm (180°C), sintered stainless steel filter
х	5	5m shaft length 178mm (180°C), sintered stainless steel filter
Х	10	10m shaft length 178mm (180°C), sintered stainless steel filter
	( <b>6</b> )	Extra codes no extra code
X	427	conduit fitting NPT 1/2" (for installation tube)
x	777	non-metric unit (°F)
x	787	ball valve installation kit
x	789	integrated LC display/operator panel
х	823	special sensor for high chemical concentrations
X	826 828	2 analog output channels (channel 1 and channel 2), 4 – 20mA operating instructions in English
x	020	operating instructions in English
		(1) (2) (3) (4) (5) (6)
Order code		/, <sup>1</sup>
Order example		907023/68 - 11 - 12 - 474 - 2 / 000

List extra codes in sequence, separated by commas.

<sup>&</sup>lt;sup>2</sup> The operands Td, a, Tw and x are only available if Option 15 has been selected under Output variables.

Phone:

e-mail:

Internet:

Fax:

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany +49 661 6003-0 +49 661 6003-607 mail@jumo.net

www.jumo.net

# JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

+44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

# JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA 315-697-JUMO 1-800-554-JUMO Phone:

474

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



000

Data Sheet 90.7023

# **Order details:**

Intrinsically safe industrial transducers for humidity, temperature and derived variables with Ex approval as per ATEX 100a 94/9/EC (PTB)

# (1) Basic version

	(1)	Lating vortion			
		Intrinsically safe humidity and temperature transducer			
		with pressure-proof stainless steel sensor head (long version)			
	907023/68L	on a 2m sensor cable for process pressures from 0 – 4MPa (0 – 40bar),			
		sensor head with sliding clamping thread;			
		operating temperature -40 to +180°C			
	(2)	Output variables			
x	11 ` ´	RH + T			
x	15	RH + T + Td + a + Tw + x			
	(3)	Analog output variables, channel 1 (and channel 2, optional)			
x	. 0	If normally only one channel is used, then choose 0 for channel 2!			
х	1 1	RH 0 <sup>-</sup> 100% RH			
X	2 2 3 3	T (see Temperature ranges)			
X	3 3	$Td^2$ -40 to +100 °C $a^2$ 0 - 500g/m <sup>3</sup>			
X	4 4 5 5	a <sup>2</sup> 0 – 500g/m <sup>3</sup> Tw <sup>2</sup> 0 – 100°C			
X X	6 6	$x^2$ 0 – 500g/kg dry air			
x	9 9	special range (details in plain text)			
	(4)	Temperature ranges			
x	474	-40 to +80°C			
x	478	-40 to +120°C			
х	485	-40 to +180°C			
x	635	-20 to +80°C			
х	643	-20 to +120°C			
x	648	-20 to +180°C			
X	814 830	0 to 100°C 0 to 180°C			
X X	999	special range (details in plain text)			
^		Sensor cable lengths (probe shaft/filter)			
x	<b>(5)</b>	2m shaft length 400mm (180°C), sintered stainless steel filter			
x	5	5m shaft length 400mm (180°C), sintered stainless steel filter			
x	10	10m shaft length 400mm (180°C), sintered stainless steel filter			
	(6)	Extra codes			
x	000	no extra code			
x	427	conduit fitting NPT 1/2" (for installation tube)			
x	777	non-metric unit (°F)			
x	787	ball valve installation kit			
x	789	integrated LC display/operator panel			
X	823	special sensor for high chemical concentrations			
X X	826 828	2 analog output channels (channel 1 and channel 2), 4 – 20 mA operating instructions in English			
1^1	020	operating metabolist in English			
		(1) (2) (3) (4) (5) (6)			
Order	code	/ -			

12

List extra codes in sequence, separated by commas.

907023/68L

11

Order example

The operands Td, a, Tw and x are only available if Option 15 has been selected under Output variables.

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany Phone: +49 661 6003-0 Fax: +49 661 6003-607 e-mail: mail@jumo.net Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533

+44 1279 635262 e-mail: sales@jumo.co.uk Internet: www.jumo.co.uk

JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA 315-697-JUMO 1-800-554-JUMO Phone:

315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

# **Order details:**

Replacement probes for intrinsically safe industrial transducers for humidity, temperature and derived variables with Ex approval as per ATEX 100a 94/9/EC (PTB)

(1) Basic versions

(1)	Basic versions			
907023/\$61	Probe for intrinsically safe central unit for wall mounting, operating temperature -40 to +60°C			
907023/S63	Probe with a flexible sensor cable and small sensor head, operating temperature -40 to +120°C			
907023/\$64	Probe for process pressures from 0 – 10MPa (0 – 100bar), operating temperature -40 to +180°C			
907023/\$65	Probe for high process temperatures, operating temperature -40 to +180°C			
907023/\$68	Probe for the variable installation in pressure lines from 0 – 4MPa (0 – 40bar), operating temperature -40 to +180°C			
907023/S68L	Probe for the variable installation in pressure lines from 0 – 4MPa (0 – 40bar), long version with 400mm shaft length, operating temperature -40 to +180°C			
X X X X X X X X X X X X X X X X X X X	Sensor cable length (probe shaft)           120mm         probe shaft           2m         shaft length 60mm (120°C)           5m         shaft length 60mm (120°C)           10m         shaft length 150mm (180°C)           2m         shaft length 150mm (180°C)           5m         shaft length 150mm (180°C)           2m         shaft length 150mm (180°C)           5m         shaft length 150mm (180°C)           2m         shaft length 178mm (180°C)           2m         shaft length 178mm (180°C)           5m         shaft length 178mm (180°C)           2m         shaft length 400mm (180°C)           5m         shaft length 400mm (180°C)           5m         shaft length 400mm (180°C)           5m         shaft length 400mm (180°C)			
x   x   x   x   x   x   000   823   (3)	Humidity sensor humidity sensor (standard) special sensor for high chemical concentrations			
x	Sensor protection / filter PPS plastic grid filter with PTFE membrane sintered stainless steel filter PPS plastic grid filter with stainless steel mesh PPS plastic grid filter without stainless steel mesh			
x   x   x   x   x   x   000   783   785   786   787	Installation kits no installation kit duct installation kit mounting flange, aluminium mounting flange, stainless steel ball valve installation kit			
Order code	(1) (2) (3) (4) (5)			
Order example	907023/S61 - 2 - 000 - 805 - 000			

# Note:

The replacement probes can be universally combined with the central unit of the intrinsically safe industrial transducers!

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-667
e-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533 Fax: +44 1279 635262

e-mail: sales@jumo.co.uk

Internet: www.jumo.co.uk

JUMO Process Control, Inc.

8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



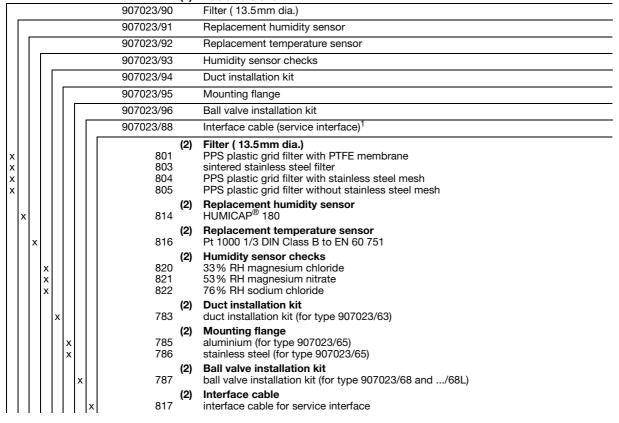
Data Sheet 90.7023

Page 31/32

# **Order details:**

Accessories for intrinsically safe industrial transducers for humidity, temperature and derived variables with Ex approval as per ATEX 100a 94/9/EC (PTB)

(1) Basic versions



Order code Order example (1) (2) 907023/90 - 804

Generally, the interface cable may only be used outside the hazardous area, and only temporarily for instrument operation! Its use for data transmission from a hazardous location is not permissible, because of the increased safety requirements of EN 50 284 for Category 1 devices!

Delivery address: Mackenrodtstraße 14,

36039 Fulda, Germany Postal address: 36035 Fulda, Germany +49 661 6003-0

Phone: Fax: +49 661 6003-607 e-mail: mail@jumo.net Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House

Temple Bank, Riverway Harlow, Essex CM 20 2TT, UK Phone: +44 1279 635533 +44 1279 635262 e-mail: sales@jumo.co.uk

Internet: www.jumo.co.uk

**JUMO Process Control, Inc.** 8 Technology Boulevard Canastota, NY 13031, USA Phone: 315-697-JUMO 1-800-554-JUMO

Fax: 315-697-5867 e-mail: info@jumo.us Internet: www.jumo.us



Data Sheet 90.7023

Page 32/32

**Stock versions:** Accessories for intrinsically safe industrial transducers

for humidity, temperature and derived variables with Ex approval as per ATEX 100a 94/9/EC (PTB)

(1)		(2)	Sales No.
907023/90 907023/90 907023/90 907023/00	- - -	801 803 804	90/00378136 90/00342673 90/00343462
907023/90	-	805	90/00342672
907023/92	-	816	90/00387458
907023/93	-	820	90/00332758
907023/93	-	821	90/00332759
907023/93	-	822	90/00332760
907023/94	-	783	90/90590560
907023/95	-	785	90/90590561
907023/95	-	786	90/90590562