



thermokon®

Keep in touch with the future



Products

2012·2013

World Edition





Thermokon at a Glance

- 1987** Company foundation in Mittenaar
- 1994** New building in Aarstr. 6 in Mittenaar
- 1997** Extension of company building
- 2000** Extension of company building to 2000 sqm office and production space
- 2007** Extension of the building by 600 sqm
- 2011** Another extension of the building by 600 sqm

Foundation of subsidiaries:

- 1998** Thermokon Components GmbH Austria
- 2002** Thermokon-Danelko Elektronik AB Sweden
- 2011** Thermokon Automation Equipment Co. Ltd., China

Managing Directors: H. Zygan & J. Teichmann

Number of employees: 130

Export Initiative Energy Efficiency

Thanks to energy-efficient products and services in the field of energy efficiency, Thermokon also contributes internationally to a safe and cost-effective energy supply, which is of paramount importance to the climate protection.

Thermokon: We build the future – by sensors made in Germany!



25 Years of Energy-efficient Technology at Highest Stage



Thermokon has committed to a responsible use of natural resources and the climate protection. By means of energy-efficient sensors we are contributing actively to a lasting reduction of the CO₂ emission.

Long-Standing Experience in Technology

Thermokon offers 25 years of international know-how in technology and market experience. Thanks to the core expertise in the field of sensors for heating systems and buildings, our technical know-how can be found in all our products and meets highest demands on technology and quality.

Strong Export Business

Worldwide presence in the global market is guaranteed by having a headquarter in Germany, branches in Austria, Sweden and China and sales offices as well as various distributors in many parts of the world. Thermokon's portfolio is exported to more than 80 countries.

Lasting Performance – Continuous Development

Ever since Thermokon was founded, the main pillars of our success in the international market have been a lasting performance and achievement potential as well as continuous further development of our portfolio. Besides new innovative product concepts also redesigns and further developments of existing products towards their marketability are of paramount importance.

Flexibility, Efficiency, Sustainability

Nowadays, the topic “sustainability” is of paramount importance for strategic corporate planning. In the field of building automation, the idea of “green buildings” is omnipresent and stands for a sustainable and energy-efficient use of existing resources in buildings. Besides flexibility and efficiency, the top requirements on functional buildings are also potentials for energy savings.

The complete portfolio of Thermokon is designed for intelligent and sustainable buildings which shall make it to premium classifications according to the directives DIN EN 15232, LEED or Green Star.

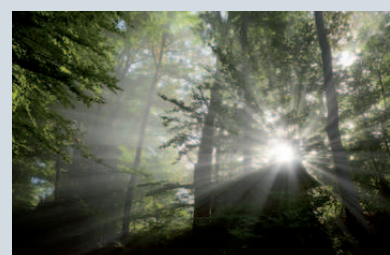
We are pleased to support our customers to select appropriate products for high energy-efficient buildings.

High-Grade Materials – Best Quality

Thanks to a close cooperation with our German partners only high-tensile plastics and stainless steel are used. Last but not least we are guaranteeing best accuracy and compliance with highest safety classes in premium quality which is approved regularly by the certification DIN EN ISO 9001



» Managing Director
Harald Zygan





Humidity

Our product line is perfectly completed by humidity sensors for measuring relative humidity and temperature in room and office spaces as well as in outdoor areas or gaseous mediums of the heating, ventilation and air-conditioning technology.

FTK	Duct humidity sensor	P. 172	FTP	Room pendulum humidity sensor	P. 183
FTW04	Room humidity sensor	P. 175	FSK01	Duct hygrostat	P. 185
FTW06	Room humidity sensor	P. 177	FSR01	Room hygrostat	P. 186
FTA54	Outdoor humidity sensor	P. 178	WK01	Condensation detector	P. 187
LCN-FTK	Duct humidity sensor	P. 180	LS02	Leakage sensor	P. 188
LCN-FTW04	Room humidity sensor	P. 181		Accessory	P. 189
LC-FTA54	Outdoor humidity sensor	P. 182			

» F(T)K – Duct Humidity Sensor passive / active / LON / RS485 Modbus (2%)



TYPES AVAILABLE		
Type	Model	Output
FK	A	active, 4-20mA
FK	V	active, 0-10V
FTK	AA	active, 2x 4-20mA
FTK	VV	active, 2x 0-10V
FTK	AS	rel. humidity: active, 4-20mA Temperature: passive, resistor
FTK	VS	rel. humidity: active, 0-10V Temperature: passive, resistor
FTK	LON	active, FTX
FTK	RS485 Modbus	active, RS485 Modbus

TECHNICAL DATA	
Mounting lengths	passive/active/RS485: 140, 270, 400mm LON: 130, 260, 390mm
Measuring ranges	Humidity: 0...100%rF Temperature: -20°C...+80°C (active), depending on sensor used (passive)
Accuracy	Humidity: Typ. ±2% between 10...90%rF AA/VV/LON Temperature: ±0,3% of measuring range RS485 Modbus: ±1°C at 25°C AS/VS Temp: depending on sensor used
Ambient temperature	-20°C...+70°C
Power supply	A/AA/AS: 15-24V= (±10%) V/VV/VS/LON/RS485 Modbus: 15-24V= (±10%) oder 24V~ (±10%)
Power consumption	A/AS: Typ. 0,48W AA: Typ. 0,96W V/VV/VS: Typ. 0,4W/0,7VA LON: Typ. 0,7W/1,9VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white similar to RAL9010
Cable entry	M16 (A/V/AA/VV/AS/VS/RS485 Modbus) M20 single and double (LON)
Sensor tube	Material PVC, Farbe schwarz, Ø19mm
Filter element	Passive/active: Material stainless steel, aperture width 80µm LON: Material PVDF
Protection	IP65
Notice	Other sensors on request

Application

Duct humidity sensor for measuring relative humidity (type FK) or relative humidity and temperature (type FTK) in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. in exhaust/fresh air ducts). Designed for connection to control and display systems.



Connection

1	2	3	4	5	6	1	2	3	4	5	6
+24V DC rH	Out rH 4...20mA					Out rH 0...10V	Uv 24V AC/DC	GND			

FKxxx A

FKxxx V

1	2	3	4	5	6	1	2	3	4	5	6
+24V DC rH	Out rH 4...20mA			Sensor A-	Sensor B+	Out rH 0...10V	Uv 24V AC/DC	GND	Sensor A-	Sensor B+	

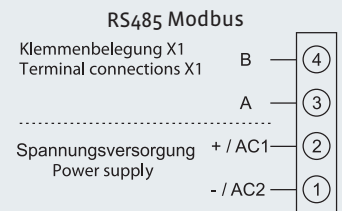
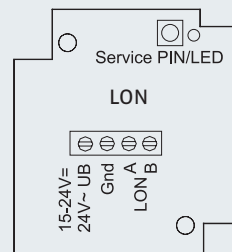
FTKxxx AS

FTKxxx VS

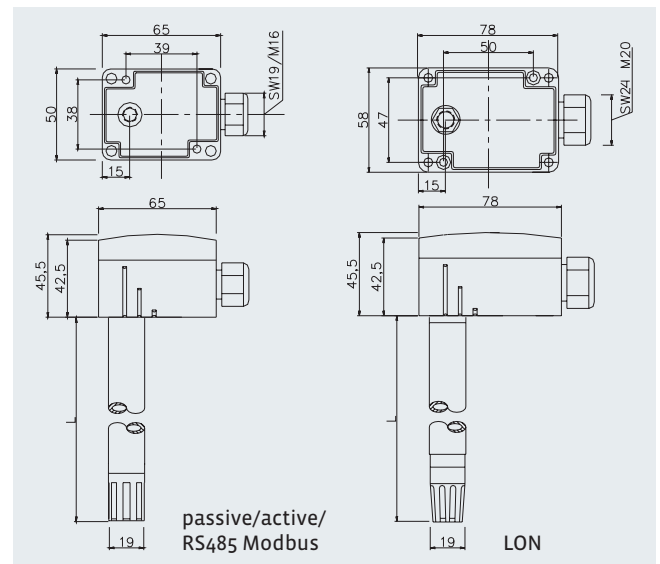
1	2	3	4	5	6	1	2	3	4	5	6
+24V DC Temp	Out Temp 4...20mA	+24V DC rH	Out rH 4...20mA			Out Temp 0...10V	Out rH 0...10V	Uv 24V AC/DC	GND		

FTKxxx AA

FTKxxx VV



Dimensional Drawing (mm)



Duct Humidity Sensor passive / active / LON / RS485 Modbus – F(T)K «

A / V

FK				PG1
Type	Out	Tube L	Art. No.	
FK140A	4-20mA	140mm	95570	
FK270A	4-20mA	270mm	99486	
FK400A	4-20mA	400mm	99493	
FK140V	0-10V	140mm	95587	
FK270V	0-10V	270mm	99462	
FK400V	0-10V	400mm	99479	

AA / VV

FTK				PG1
Type	Out	Tube L	Art. No.	
FTK140AA	2x 4-20mA	140mm	95631	
FTK270AA	2x 4-20mA	270mm	99448	
FTK400AA	2x 4-20mA	400mm	99455	
FTK140VV	2x 0-10V	140mm	95617	
FTK270VV	2x 0-10V	270mm	99424	
FTK400VV	2x 0-10V	400mm	99431	

AS / VS – PT100

FTK				PG1
Typ	Out rH	Tube L	Art. No.	
FTK140AS PT100	4-20mA	140mm	95600	
FTK270AS PT100	4-20mA	270mm	98137	
FTK400AS PT100	4-20mA	400mm	98281	
FTK140VS PT100	0-10V	140mm	95594	
FTK270VS PT100	0-10V	270mm	98557	
FTK400VS PT100	0-10V	400mm	98687	

AS / VS – PT100 1/3 DIN

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS PT100 1/3 DIN	4-20mA	140mm	97192	
FTK270AS PT100 1/3 DIN	4-20mA	270mm	98151	
FTK400AS PT100 1/3 DIN	4-20mA	400mm	98298	
FTK140VS PT100 1/3 DIN	0-10V	140mm	98427	
FTK270VS PT100 1/3 DIN	0-10V	270mm	98564	
FTK400VS PT100 1/3 DIN	0-10V	400mm	98694	

AS / VS – PT1000 1/3 DIN

FTK				PG1
Type	Tube L	Rohr L	Art. No.	
FTK140AS PT1000 1/3DIN	4-20mA	140mm	98007	
FTK270AS PT1000 1/3DIN	4-20mA	270mm	98182	
FTK400AS PT1000 1/3DIN	4-20mA	400mm	98328	
FTK140VS PT1000 1/3DIN	0-10V	140mm	98458	
FTK270VS PT1000 1/3DIN	0-10V	270mm	98588	
FTK400VS PT1000 1/3DIN	0-10V	400mm	98717	

LON

FTK				PG1
Type	Out	Tube L	Art. No.	
FTK130 LON	FTX	130mm	120609	
FTK260 LON	FTX	260mm	120296	
FTK390 LON	FTX	390mm	174855	

RS485 Modbus

FTK				PG1
Type	Out	Tube L	Art. No.	
FTK140 RS485 Modbus	RS485	140mm	463560	
FTK270 RS485 Modbus	RS485	270mm	463645	
FTK400 RS485 Modbus	RS485	400mm	463652	

AS / VS – PT1000

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS PT1000	4-20mA	140mm	97284	
FTK270AS PT1000	4-20mA	270mm	98175	
FTK400AS PT1000	4-20mA	400mm	98311	
FTK140VS PT1000	0-10V	140mm	98441	
FTK270VS PT1000	0-10V	270mm	98571	
FTK400VS PT1000	0-10V	400mm	98700	

AS / VS – Ni1000

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS Ni1000	4-20mA	140mm	98014	
FTK270AS Ni1000	4-20mA	270mm	98199	
FTK400AS Ni1000	4-20mA	400mm	98335	
FTK140VS Ni1000	0-10V	140mm	98465	
FTK270VS Ni1000	0-10V	270mm	98595	
FTK400VS Ni1000	0-10V	400mm	98724	

» F(T)K – Duct Humidity Sensor passive / active / LON / RS485 Modbus

AS / VS – Ni1000TK5000

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS Ni1000TK5000	4-20mA	140mm	98021	
FTK270AS Ni1000TK5000	4-20mA	270mm	98205	
FTK400AS Ni1000TK5000	4-20mA	400mm	98342	
FTK140VS Ni1000TK5000	0-10V	140mm	98472	
FTK270VS Ni1000TK5000	0-10V	270mm	98601	
FTK400VS Ni1000TK5000	0-10V	400mm	98731	

AS / VS – NTC1,8k

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC1,8k	4-20mA	140mm	355988	
FTK270AS NTC1,8k	4-20mA	270mm	355995	
FTK400AS NTC1,8k	4-20mA	400mm	356008	
FTK140VS NTC1,8k	0-10V	140mm	236850	
FTK270VS NTC1,8k	0-10V	270mm	232210	
FTK400VS NTC1,8k	0-10V	400mm	258524	

AS / VS – NTC10k

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC10k	4-20mA	140mm	98069	
FTK270AS NTC10k	4-20mA	270mm	98243	
FTK400AS NTC10k	4-20mA	400mm	98380	
FTK140VS NTC10k	0-10V	140mm	98519	
FTK270VS NTC10k	0-10V	270mm	98649	
FTK400VS NTC10k	0-10V	400mm	98779	

AS / VS – NTC20k

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC20k	4-20mA	140mm	98083	
FTK270AS NTC20k	4-20mA	270mm	98267	
FTK400AS NTC20k	4-20mA	400mm	98403	
FTK140VS NTC20k	0-10V	140mm	98533	
FTK270VS NTC20k	0-10V	270mm	98663	
FTK400VS NTC20k	0-10V	400mm	98809	

ACCESSORIES

FK / FTK		PG1
Description	Art. No.	
Rawlplugs and screws (2 pcs. each)	102209	
Mounting flange MF19 (PA6.6)	7375	
Filter stainless steel (spare part)	231169	
Filter PVDF (for LON types)	118583	

AS / VS – FeT

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS FeT	4-20mA	140mm	98045	
FTK270AS FeT	4-20mA	270mm	98229	
FTK400AS FeT	4-20mA	400mm	98366	
FTK140VS FeT	0-10V	140mm	98496	
FTK270VS FeT	0-10V	270mm	98625	
FTK400VS FeT	0-10V	400mm	98755	

AS / VS – NTC5k

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC5k	4-20mA	140mm	98052	
FTK270AS NTC5k	4-20mA	270mm	98236	
FTK400AS NTC5k	4-20mA	400mm	98373	
FTK140VS NTC5k	0-10V	140mm	98502	
FTK270VS NTC5k	0-10V	270mm	98632	
FTK400VS NTC5k	0-10V	400mm	98762	

AS / VS – NTC10k Precon

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC10kPrecon	4-20mA	140mm	98076	
FTK270AS NTC10kPrecon	4-20mA	270mm	98250	
FTK400AS NTC10kPrecon	4-20mA	400mm	98397	
FTK140VS NTC10kPrecon	0-10V	140mm	98526	
FTK270VS NTC10kPrecon	0-10V	270mm	98656	
FTK400VS NTC10kPrecon	0-10V	400mm	98793	

AS / VS – LM235Z

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS LM235Z	4-20mA	140mm	98090	
FTK270AS LM235Z	4-20mA	270mm	98274	
FTK400AS LM235Z	4-20mA	400mm	98410	
FTK140VS LM235Z	0-10V	140mm	98540	
FTK270VS LM235Z	0-10V	270mm	98670	
FTK400VS LM235Z	0-10V	400mm	98816	



Room Humidity Sensor passive / active / LON (2%) – F(T)Wo4 «



F(T)Wo4



TYPES AVAILABLE		
Type	Model	Output
FWo4	A	active, 4-20mA
FWo4	V	active, 0-10V
FTWo4	AA	active, 2x 4-20mA
FTWo4	VV	active, 2x 0-10V
FTWo4	AS	rel. Humidity: active, 4-20mA Temperature: passive, resistor
FTWo4	VS	rel. Humidity: active, 0-10V Temperature: passive, resistor
FTWo4	LON	active, FTX

TECHNICAL DATA	
Measuring range	Humidity: 0...100%rH Temperature: 0°C...+50°C (active/LON), depending on sensor used (passive)
Accuracy	Humidity: Typ. ±2% between 10...90%rH AA/VV/LON Temp: ±1% of meas. range depending on sensor used AS/VS Temp: depending on sensor used
Ambient temperature	-20°C...+70°C
Power supply	A/AA/AS: 15-24V= (±10%) V/VV/VS/LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A: max. 20mA AA: max. 40mA AS: max. 20mA/24V= V/VV/VS: max. 0,3W/0,5V LON: typ. 0,6W/1,2VA
Terminal	Screwing terminal, max. 1,5mm ²
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard deep installation box, bottom part can be mounted and wired separately from housing cover
Cable entry	From back or sidewise top/bottom
Protection	IP30
Notice	Set point adjuster on request Further sensors on request Special painting feasible (see page 225)

Application

Room humidity sensor for measuring relative humidity (type FWo4) or humidity and temperature (type FTWo4) in room and office spaces etc. Designed for connection to control and display systems.

Connection

1	2	3	4	5	6	7	8	9	10	11	12
rF+ Uv 15...24V= 4...20mA	rF- 4...20mA										

FWo4 A

1	2	3	4	5	6	7	8	9	10	11	12
				Out rF 0...10V	GND	Uv 15-24V= 24V~					

FWo4 V

1	2	3	4	5	6	7	8	9	10	11	12
Out Temp. 4...20mA	Uv 15...24V= 4...20mA	Out rF 4...20mA									

FTWo4 AA

1	2	3	4	5	6	7	8	9	10	11	12
			Out Temp. 0...10V	Out rF 0...10V	GND	Uv 15-24V= 24V~					

FTWo4 VV

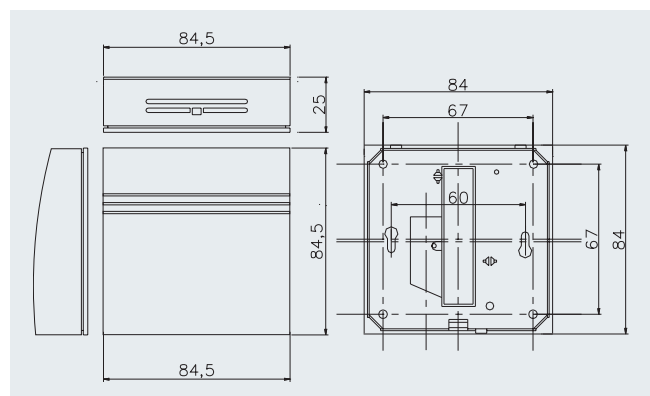
1	2	3	4	5	6	7	8	9	10	11	12
rF+ Uv 15...24V= 4...20mA	rF- 4...20mA				Sensor	Sensor					

FTWo4 AS

1	2	3	4	5	6	7	8	9	10	11	12
	Sensor	Sensor		Out rF 0...10V	GND	24V AC/DC					

FTWo4 VS

Dimensional Drawing (mm)



» F(T)W04 – Room Humidity Sensor passive / active / LON

A / V		
FW04		PG1
Type	Out	Art. No.
FW04A	4-20mA	191777
FW04V	0-10V	191784

AS / VS – PT100		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS PT100	4-20mA	439244
FTW04VS PT100	0-10V	216876

AS / VS – PT1000		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS PT1000	4-20mA	221856
FTW04VS PT1000	0-10V	216869

AS / VS – Ni1000		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS Ni1000	4-20mA	253543
FTW04VS Ni1000	0-10V	216845

AS / VS – FeT		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS FeT	4-20mA	356039
FTW04VS FeT	0-10V	272346

AS / VS – NTC5k		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS NTC5k	4-20mA	356053
FTW04VS NTC5k	0-10V	471473

AS / VS – NTC10k Precon		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS NTC10kPrecon	4-20mA	256162
FTW04VS NTC10kPrecon	0-10V	262064

LON		
FTW04		PG1
Type	Out	Art. No.
FTW04 LON	FTX	297776

ACCESSORIES		
FW04 / FTW04		PG1
Description	Art. No.	
Rawlplugs and screws (2 pcs. each)	102209	
Ball stroke protection BS100	103312	

AA / VV		
FTW04		PG1
Type	Out	Art. No.
FTW04AA	2X 4-20mA	429962
FTW04VV	2X 0-10V	196352

AS / VS – PT100 1/3 DIN		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS PT100 1/3 DIN	4-20mA	296465
FTW04VS PT100 1/3 DIN	0-10V	308281

AS / VS – PT1000 1/3 DIN		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS PT1000 1/3 DIN	4-20mA	223683
FTW04VS PT1000 1/3 DIN	0-10V	246262

AS / VS – Ni1000TK5000		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS Ni1000TK5000	4-20mA	239509
FTW04VS Ni1000TK5000	0-10V	216852

AS / VS – NTC1,8k		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS NTC1,8k	4-20mA	356046
FTW04VS NTC1,8k	0-10V	258531

AS / VS – NTC10k		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS NTC10k	4-20mA	274357
FTW04VS NTC10k	0-10V	250238

AS / VS – NTC20k		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS NTC20k	4-20mA	356060
FTW04VS NTC20k	0-10V	198035

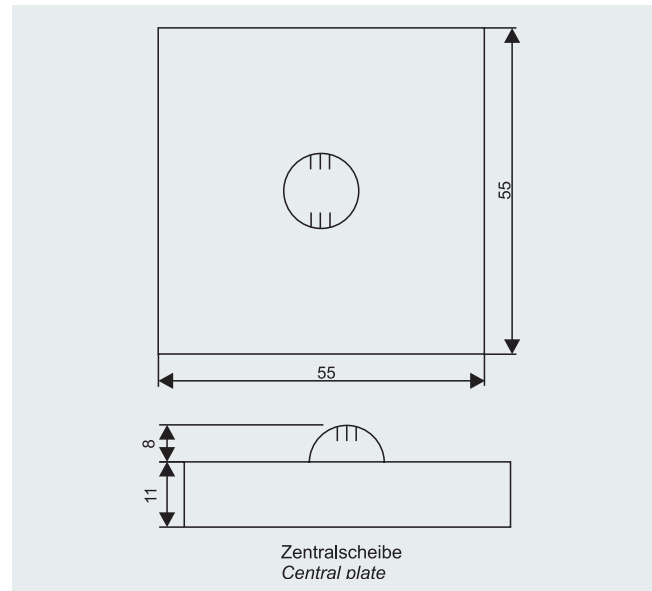
AS / VS – LM235Z		
FTW04		PG1
Type	Out rH	Art. No.
FTW04AS LM235Z	4-20mA	356077
FTW04VS LM235Z	0-10V	216838

Application

For detection of relative humidity and temperature in room and office spaces etc. Designed for connection to control and display systems.



Dimensional Drawing (mm)



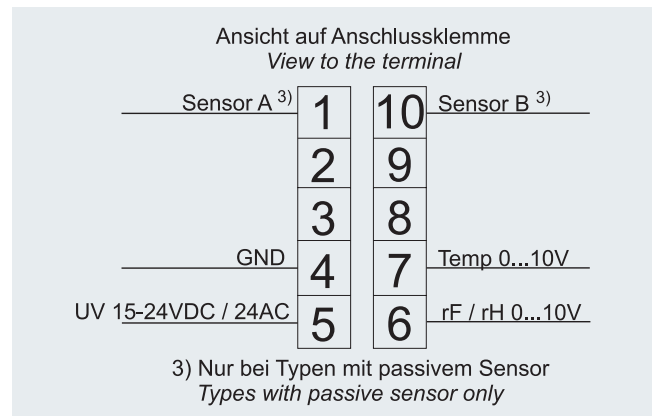
TYPES AVAILABLE

Type	Out rh	Output
FTW06	VV	active, 0-10V

TECHNICAL DATA

Measuring ranges	Humidity: 0...100%rH Temperature: 0°C...+50°C
Accuracy	Humidity: Typ. ±2% zw. 10...90%rH Temperature: ±1% of measuring range
Ambient temperature	-20°C...+70°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	max. 0,3W/0,5VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Switch programmes of manufacturer Gira, Merten, Berker, Peha
Protection	IP30
Notice	Additional passive temperature sensor at option, (please indicate type when placing an order) Please indicate switch programme when placing an order

Connection



VV

FTW06	Out	Art. No.	PG1
FTW06 Gira E2 reinweiß	2x 0-10V	459167	

Devices in switch programmes Gira, Merten, Berker and Peha are having the same price (except for glass and metal frames)

OPTIONS

FTW06	Description	PG1
	Switch programme Gira Esprit	
	Additional passive temperature sensor	

» F(T)A54 – Outdoor Humidity Sensor passive / active / LON (2%)



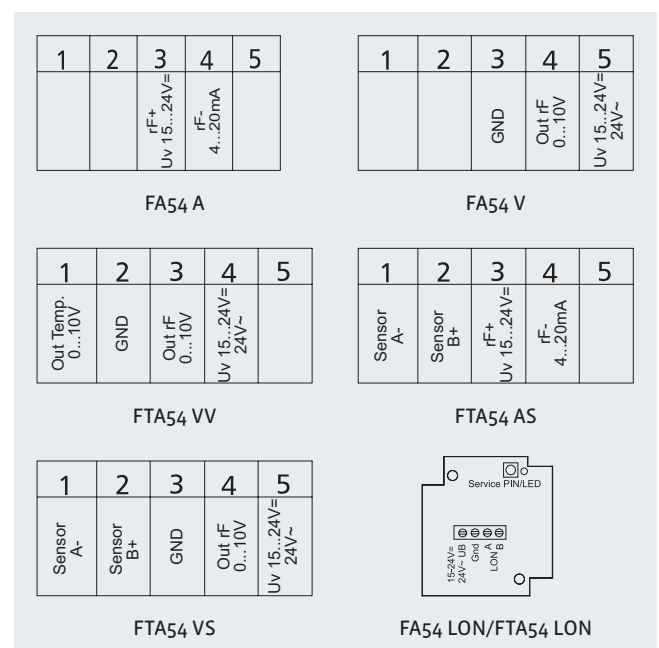
TYPES AVAILABLE		
Type	Model	Output
FA54	A	active, 4-20mA
FA54	V	active, 0-10V
FTA54	VV	active, 2x 0-10V
FA54/FTA54	LON	active, FTX
FTA54	AS	rel. humidity: active, 4-20mA temperature: passive, resistor
FTA54	VS	rel. humidity: active, 0-10V temperature: passive, resistor

TECHNICAL DATA	
Measuring ranges	Humidity: 0...100%rF Temperature: -20°C...+80°C (active), depending on sensor used (passive)
Accuracy	Humidity: Typ. ±2% between 35...75%rH AA/VV/LON temperature: ±0,3% of measuring range AS/VS temperature: depending on sensor used
Ambient temperature	-20°C...+70°C
Power supply	A/AS: 15-24V= (±10%) V/VV/VS/LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A/LON: max. 40mA/24V= V/VV: max. 12mA/24V= AS: max. 20mA/24V= VS: max. 6mA/24V=
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white similar to RAL9010, As for the LON type, the LON module is installed in a second housing (with 1m connecting wire)
Cable entry	M16 (A/V/VV/AS/VS) M20 single and double (LON)
Sensor pocket	Material PVC, colour white
Filter element	Material Stainless Steel
Protection	IP65
Notice	Other sensors on request

Application

Outdoor humidity sensor for measuring relative humidity (type FA54) or relative humidity and temperature (type FTA54) in outdoor areas. Designed for connection to control and display systems.

Connection



Outdoor Humidity Sensor passive / active / LON (2%) – F(T)A54 «

A / V / LON			
FTA54			PG1
Type	Out	Art. No.	
FA54A	4-20mA	98892	
FA54V	0-10V	98915	
FA54LON	FTX	148573	

AS / VS – PT100			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS PT100	4-20mA	98908	
FTA54VS PT100	0-10V	98922	

AS / VS – PT1000			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS PT1000	4-20mA	98830	
FTA54VS PT1000	0-10V	99042	

AS / VS – Ni1000			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS Ni1000	4-20mA	98854	
FTA54VS Ni1000	0-10V	99066	

AS / VS – FeT			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS FeT	4-20mA	97956	
FTA54VS FeT	0-10V	99103	

AS / VS – NTC5k			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC5k	4-20mA	97963	
FTA54VS NTC5k	0-10V	99110	

AS / VS – NTC10k Precon			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC10kPrecon	4-20mA	97987	
FTA54VS NTC10kPrecon	0-10V	99134	

AS / VS – LM235Z			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS LM235Z	4-20mA	99028	
FTA54VS LM235Z	0-10V	99158	

VV / LON			
FTA54			PG1
Type	Out	Art. No.	
FTA54VV	2x 0-10V	98939	
FTA54LON	FTX	139564	

AS / VS – PT100 1/3 DIN			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS PT100 1/3 DIN	4-20mA	98823	
FTA54VS PT100 1/3 DIN	0-10V	99035	

AS / VS – PT1000 1/3 DIN			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS PT1000 1/3 DIN	4-20mA	98847	
FTA54VS PT1000 1/3 DIN	0-10V	99059	

AS / VS – Ni1000TK5000			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS Ni1000TK5000	4-20mA	97932	
FTA54VS Ni1000TK5000	0-10V	99073	

AS / VS – NTC1,8k			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC1,8k	4-20mA	356343	
FTA54VS NTC1,8k	0-10V	230179	

AS / VS – NTC10k			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC10k	4-20mA	97970	
FTA54VS NTC10k	0-10V	99127	

AS / VS – NTC20k			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC20k	4-20mA	97994	
FTA54VS NTC20k	0-10V	99141	

ACCESSORIES			
FTA54			PG1
Description	Art. No.		
Rawlplugs and screws (2 pcs. each)	102209		
Sun-/Rain protection RS150	103329		

» LCN-FTK – Duct Humidity Sensor active (3%)



TYPES AVAILABLE

Type	Model	Output
LCN-FTK	VV	aktiv, 2x 0-10V

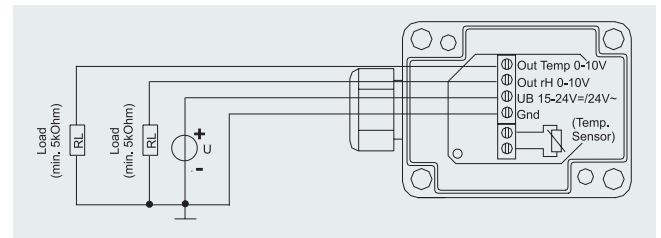
TECHNICAL DATA

Mounting lengths	140mm, 270mm, 400mm
Measuring ranges	Humidity: 0...100%rH Temperature: -20°C...+80°C
Accuracy	Humidity: Typ. ±3% between 20...80%rH Temperature: ±0,5°C at 25°C
Ambient temperature	-20°C...+70°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	Typ. 0,5W/1,7VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pur white, similar to RAL9010
Cable entry	M16
Sensor tube	Material PA6, colour black, Ø19mm
Filter element	Material stainless steel, Aperture width 80µm
Protection	IP65
Notice	At option with additional passive temperature sensor (please specify sensor when ordering)

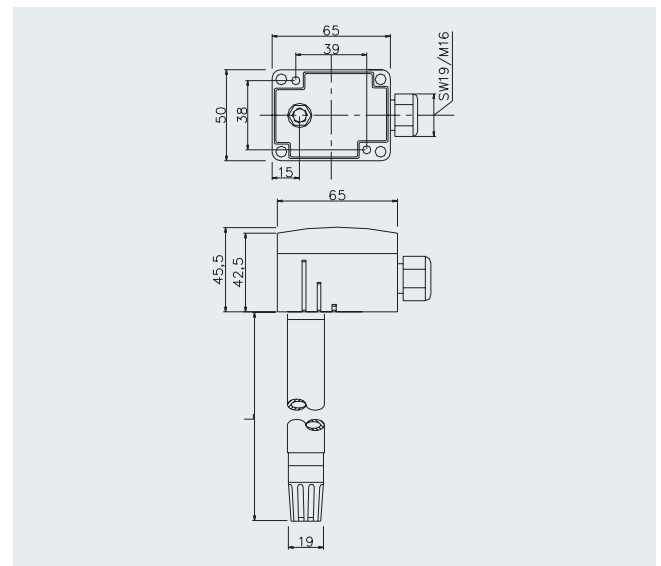
Application

Duct humidity sensor for measuring relative humidity and temperature in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. supply air/ exhaust air ducts). At option, an additional passive temperature sensor is available. Designed for connection to display and control systems.

Connection



Dimensional Drawing (mm)



VV			
LCN-FTK			
Type	Out	Tube L	Art. No.
LCN-FTK140VV	2x 0-10V	140mm	269681
LCN-FTK270VV	2x 0-10V	270mm	277518
LCN-FTK400VV	2x 0-10V	400mm	277525

OPTIONS	
LCN-FTK	
Description	PG1
Additional passive temperature sensor	

ACCESSORIES	
LCN-FTK	
Description	Art. No.
Mounting flange MF19 (PA6.6)	7375
Filter stainless steel (spare part)	231169

Room Humidity Sensor active / LON / RS485 Modbus (3%) – LCN-FTW04 «



LCN-FTW04



LCN-FTW04LCD

Application

For measuring relative humidity and temperature in room and office spaces etc. Designed for connection to display and control systems.



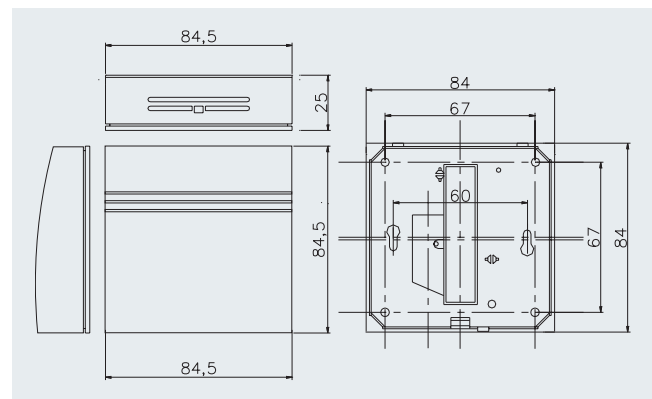
TYPES AVAILABLE		
Type	Model	Output
LCN-FTW04	VV	active, 2x 0-10V
LCN-FTW04	LON	active, FTX
LCN-FTW04	RS485 Modbus	active, RS485 Modbus

Connection (Example LCN-FTW04VV)

1	2	3	4	5	6	7	8	9	10	11	12
			Out Temp 0...10V	Out rH 0...10V	GND	Uv 24V AC/DC					

TECHNICAL DATA	
Measuring ranges	Humidity: 0...100%rH Temperature: 0°C...+50°C
Accuracy	Humidity: Typ. ±3% betw. 20...80%rH Temperature: ±0,5°C at 25°C
Ambient temperature	-20°C...+70°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	Typ. 0,4W/06VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard flush-mounting box, housing bottom can be premounted and prewired separately from housing cover.
Cable entry	From back or sidewise top/bottom
Protection	IP30
Notice	Special painting feasible (see page 225)

Dimensional Drawing (mm)



VV / LON / RS485 Modbus		
LCN-FTW04		PG1
Type	Out	Art. No.
LCN-FTW04VV	2x 0-10V	287654
LCN-FTW04LON	FTX	429955
LCN-FTW04 RS485 Modbus	RS485 Modbus	412537

OPTION	
LCN-FTW04 VV	PG1
Description	
LCD	

ACCESSORIES	
LCN-FTW04	PG1
Description	Art. No.
Rawlplugs and screws (2 pcs. each)	102209
Ball stroke protection BS100	103312

» LC-F(T)A54 – Outdoor Humidity Sensor active (3%)



Application

For measuring relative humidity and temperature in outdoor areas. Designed for connection to display and control systems.

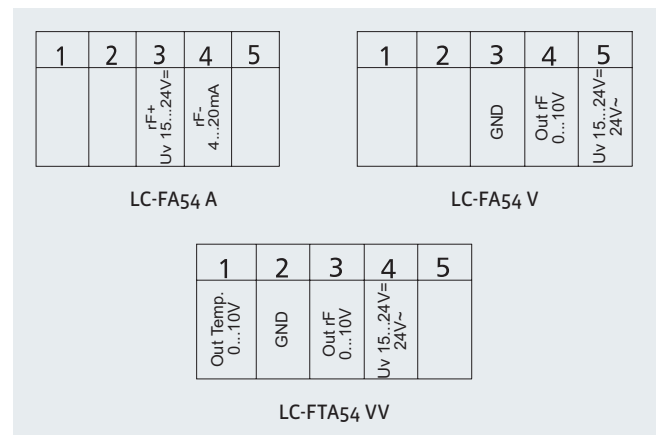
TYPES AVAILABLE

Type	Model	Model
LC-FA54	A	active, 4-20mA
LC-FA54	V	active, 0-10V
LC-FTA54	VV	active, 2x 0-10V

TECHNICAL DATA

Measuring range	Humidity: 0...100%rH Temperature: -20°C...+80°C
Accuracy	Humidity: Typ. ±3% between 35...75%rH VV Temperature: ±0,3% of measuring range
Ambient temperature	-20°C...+70°C
Power supply	A: 15-24V= (±10%) V/VV: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A: max. 40mA/24V= V/VV: max. 12mA/24V=
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white, similar to RAL9010
Cable entry	M16
Sensor pocket	Material PVC, colour white
Filter element	Material Stainless Steel
Protection	IP65

Connection



A / V / VV

LC-F(T)A54	PG1	
Type	Out	Art. No.
LC-FA54A	4-20mA	277594
LC-FA54V	0-10V	277587
LC-FTA54VV	2x 0-10V	277549

ACCESSORIES

LC-F(T)A54	PG1
Description	Art. No.
Rawplugs and screws (2 pcs. each)	102209
Sun-/Rain protection RS150	103329

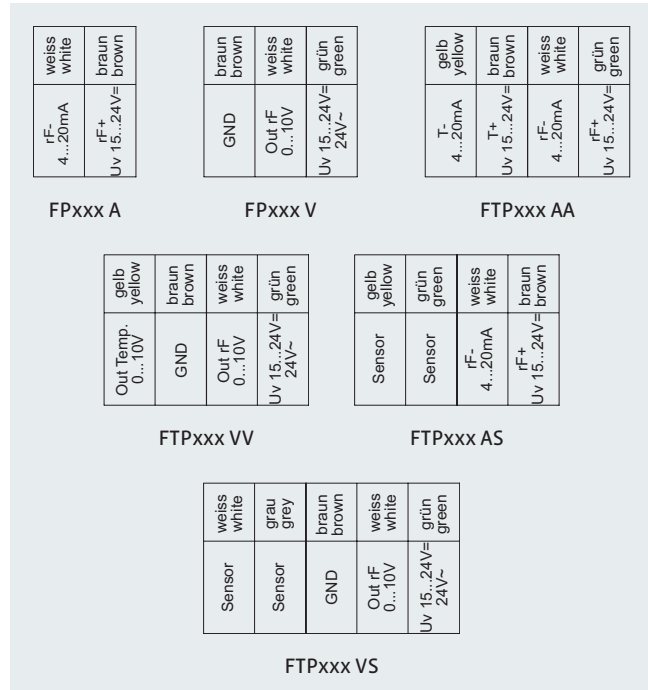
Room Pendulum Humidity Sensor passive / active – F(T)P «



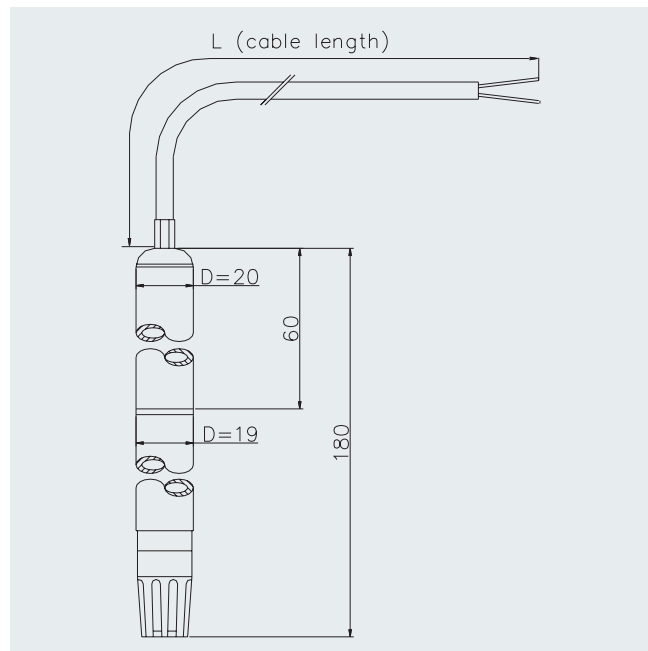
Application

For sectional measuring of relative humidity (type FP) or humidity and temperature (type FTP) in large rooms.

Connection



Dimensional Drawing (mm)



TYPES AVAILABLE

Type	Model	Output
FP	A	active, 4-20mA
FP	V	active, 0-10V
FTP	AA	active, 2x 4-20mA
FTP	VV	active, 2x 0-10V
FTP	AS	rel. humidity: active, 4-20mA temperature: passive, resistor
FTP	VS	rel. humidity: active, 0-10V temperature: passive, resistor

TECHNICAL DATA

Measuring range	Humidity: 0...100%rF Temperature: -20°C...+80°C (active), depending on sensor used (passive)
Accuracy	Humidity: Typ. ±2% between 35...75%rH AA/VV temperature: ±0,3% of measuring range AS/VS temperature: depending on sensor used
Connection wire	PVC, colour white, cross section 0,14mm ² L=1m, other standard lengths 2m, 4m, 6m
Ambient temperature	-20°C...+70°C
Power supply	A/AA/AS: 15-24V= (±10%) V/VV/VS: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A/LON: max. 40mA/24V= V/VV: max. 12mA/24V= AS: max. 20mA/24V= VS: max. 6mA/24V=
Sensor tube	Material PVC, colour black, with stainless steel weight
Filter element	Material PVDF
Protection	IP20
Notice	Other sensors on request

A / V

FP – CONNECTION WIRE 1m		PG1
Type	Out	Art. No.
FP100A	4-20mA	173407
FP100V	0-10V	144544

AA / VV

FTP – CONNECTION WIRE 1m		PG1
Type	Out	Art. No.
FTP100AA	2x 4-20mA	185653
FTP100VV	2x 0-10V	152273

» F(T)P – Room Pendulum Humidity Sensor passive / active

AS / VS – PT100			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS PT100	4-20mA	356350	
FTP100VS PT100	0-10V	356480	

AS / VS – PT1000			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS PT1000	4-20mA	356374	
FTP100VS PT1000	0-10V	153140	

AS / VS – Ni1000			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS Ni1000	4-20mA	297493	
FTP100VS Ni1000	0-10V	253109	

AS / VS – FeT			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS FeT	4-20mA	356411	
FTP100VS FeT	0-10V	191371	

AS / VS – NTC5k			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS NTC5k	4-20mA	356435	
FTP100VS NTC5k	0-10V	356510	

AS / VS – NTC10k Precon			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS NTC10kPrecon	4-20mA	215466	
FTP100VS NTC10kPrecon	0-10V	356459	

AS / VS – LM235Z			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS LM235Z	4-20mA	356473	
FTP100VS LM235Z	0-10V	204798	

ACCESSORIES			
FP / FTP			PG1
Description			Art. No.
Filter PVDF (spare part)			118583

AS / VS – PT100 1/3 DIN			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS PT100 1/3 DIN	4-20mA	356367	
FTP100VS PT100 1/3 DIN	0-10V	356497	

AS / VS – PT1000 1/3 DIN			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS PT1000 1/3DIN	4-20mA	356381	
FTP100VS PT1000 1/3DIN	0-10V	281416	

AS / VS – Ni1000TK5000			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS Ni1000TK5000	4-20mA	356398	
FTP100VS Ni1000TK5000	0-10V	332200	

AS / VS – NTC1,8k			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS NTC1,8k	4-20mA	356428	
FTP100VS NTC1,8k	0-10V	356503	

AS / VS – NTC10k			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS NTC10k	4-20mA	356442	
FTP100VS NTC10k	0-10V	356527	

AS / VS – NTC20k			
FTP – CONNECTION WIRE 1m			PG1
Type	Out rH	Art. No.	
FTP100AS NTC20k	4-20mA	356466	
FTP100VS NTC20k	0-10V	356534	

OPTIONS			
FP / FTP			PG1
Description			
Cable length per additional meter for FP			
Cable length per additional meter for FP			

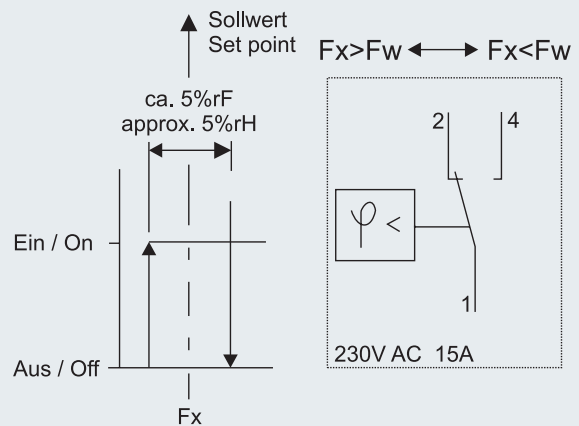
Application

For control (2-point) of relative humidity in ventilation and air-conditioning systems, climate cabinets, air humidifiers and air dehumidifiers etc..



FSK01

Connection



Fx rel. Feuchte der Luft (Istwert)
Fw am Sollwertsteller eingestellte Feuchte (Sollwert)
Sinkt die rel. Feuchte Fx unter den eingestellten Sollwert Fw, so öffnet Kontakt 1/4 und schließt Kontakt 1/2.

*Fx rel. hum. of the air (actual value)
Fw humidity adjusted on the knob (set value).
If the rel.hum.Fx falls below the setpoint value Fw, the contact 1/4 opens and the contact 1/2 closes.*

TECHNICAL DATA

Mounting length	220mm
Measuring range	35...95%rH
Scale range	30...100%rH
Accuracy	±3,5% (measuring range >50%rH) ±4,0% (measuring range <50%rH)
Ambient temperature	-30°C...+60°C
Max. voltage	250V AC
Switching gap	4%rH (at 50%rH)
Terminal	Screwing terminal, max. 1,5mm ²
Connection head	Material ABS, colour light-grey
Cable entry	M20
Sensor tube	Material stainless steel, Ø16mm, L=220mm
Protection	IP54

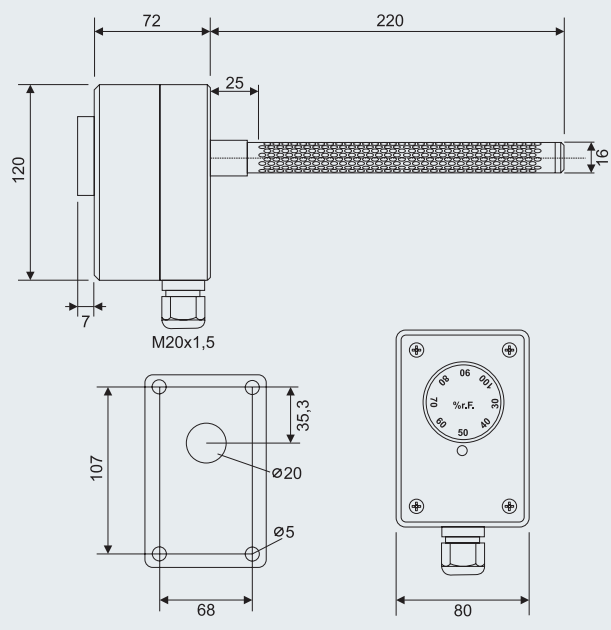
DUCT HYGROSTAT

FSK01	PG1
Type	Art. No.
FSK01	427593

ACCESSORY

FSK01	PG1
Description	Art. No.
Mounting flange MF19 (PA6.6)	7375
Sensor protection (wire mesh) for fan speeds 8...15m/s	429047
PTFE filter	429054
Wall switch	429030

Dimensional Drawing (mm)

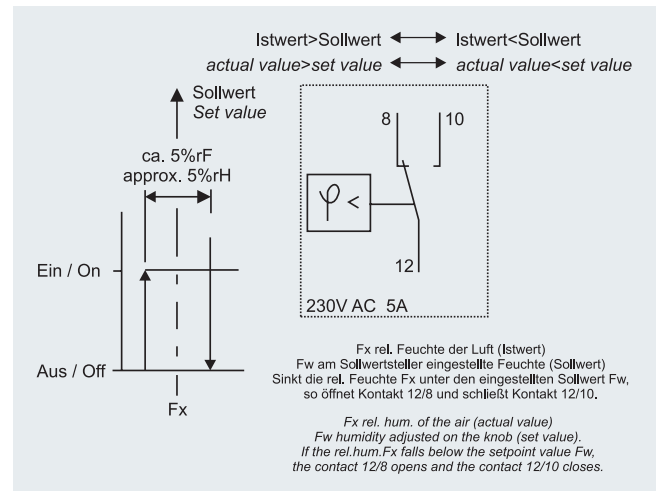


» FSR01 – Room Hygrostat

Application

For control (2-point) of relative humidity in office, computer and business premises and warehouses etc.

Connection



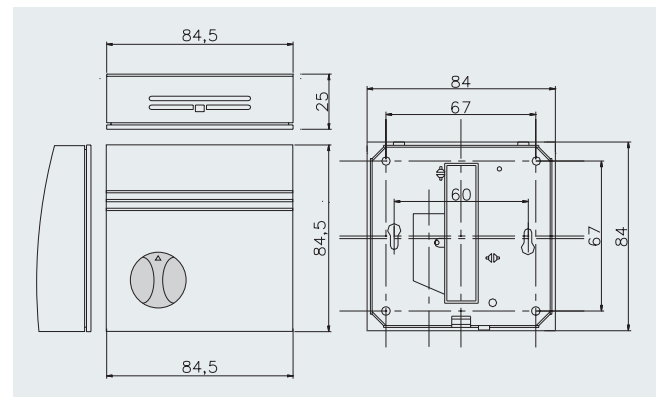
TECHNICAL DATA

Measuring range	35...95%rH
Scale range	30...100%rH
Accuracy	±3,0%rF
Ambient temperature	0°C...+60°C
Max. voltage	250V AC
Switching gap	4%rH (at 50%rH)
Terminal	Screwing terminal, max. 1,5mm ²
Enclosure	Material ASA, colour pure white
Protection	IP20

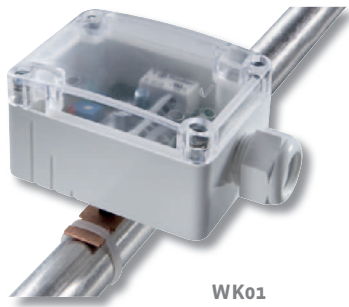
ROOM HYGROSTAT

FSR01	PG1
Type	Art. No.
FSR01	427623

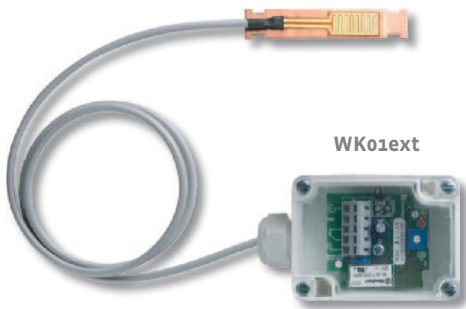
Dimensional Drawing (mm)



Condensation Sensor – WK01 / WK01ext «



WK01

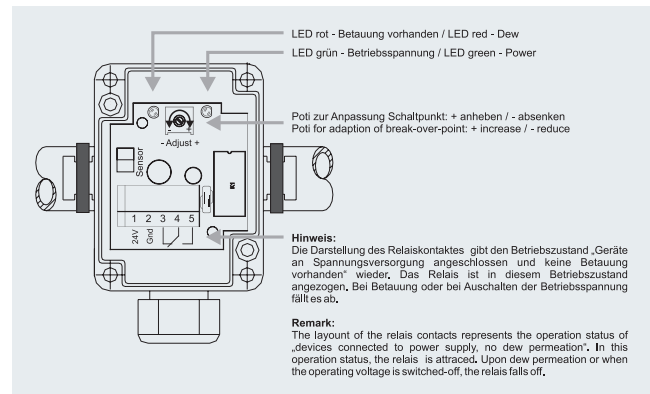


WK01ext

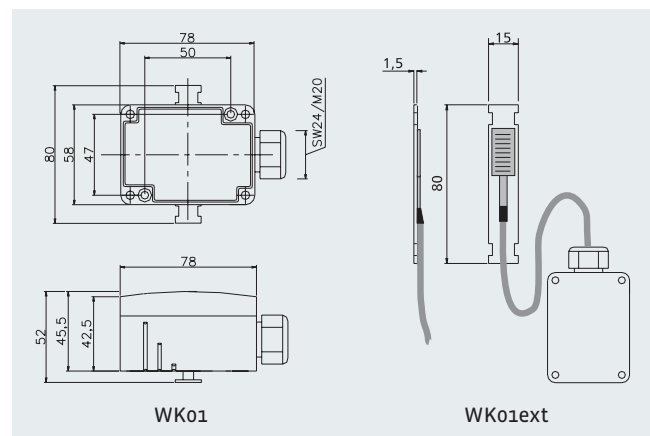
Application

For protection against dew permeation on cooling ceilings. The detector registers dew of the back contact prism. WK01ext with remote sensor 2m. Designed for connection to control and display systems in order to interrupt the cooling water flow for example. The devices include sensor and evaluation electronics. With signal LED and relay contact.

Connection



Dimensional Drawing (mm)



TYPES AVAILABLE

Type	Power Supply
WK01	24V
WK01	230V
WK01ext	24V
WK01ext	230V

TECHNICAL DATA

Output	24V: Relay with change-over contact, floating, max. 24V/1A (ohmic) 230V: Relay with change-over contact, non-floating, max. 230V/120W
Ambient temperature	-20°C...+60°C
Power supply	24V: 15-24V= (±10%) or 24V~ (±10%) 230V: 230V~ (±10%)
Power consumption	24V: Typ. 0,8W/1,6VA 230V: Typ. 3,5VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Sensor base plate	Copper, 80mm x 15mm x 1,5mm
Enclosure	Material PA6, colour pure white, similar to RAL9010
Cable entry	M20
Protection	IP65
Notice	WK01ext with remote sensor (PVC, cross section 0,25mm ² / L=2m)

CONDENSATIONS SENSORS

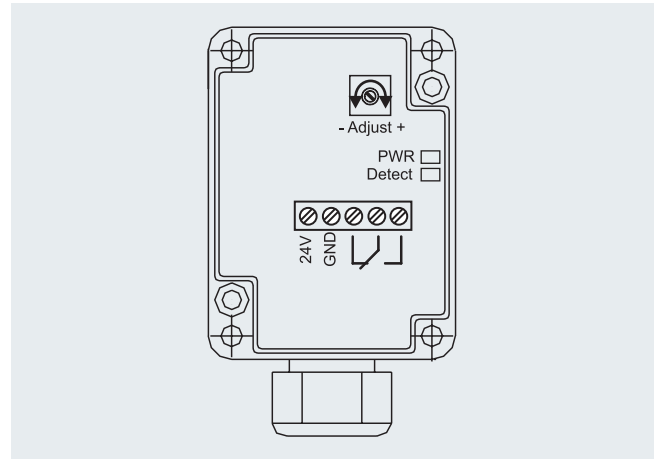
WK01 / WK01ext		PG1
Type		Art. No.
WK01 24V		212816
WK01 230V		363686
WK01ext 24V		230537
WK01ext 230V		408950

» LS02 – Leakage Sensor

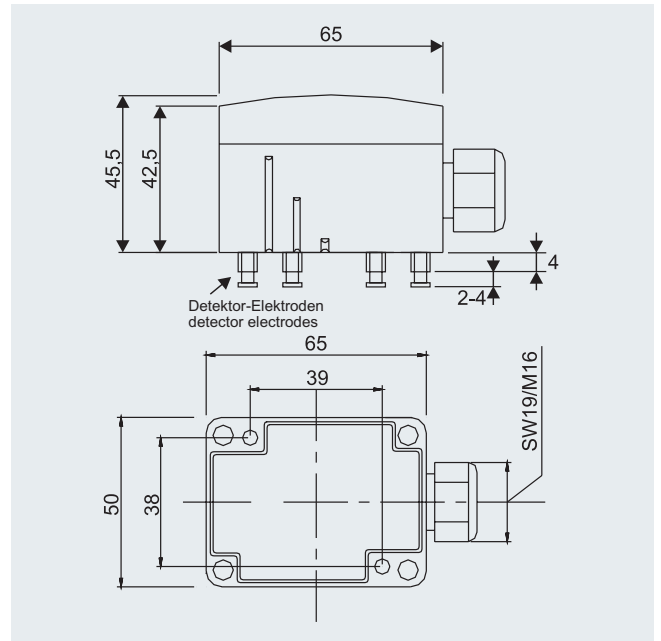
Application

For detection of occurring water leakage (water-mains burst etc.). Designed for connection to display and control systems. With signal LED and relay contact.

Connection



Dimensional Drawing (mm)



TECHNICAL DATA

Output	Relay with change-over contact, floating, max. 12V
Ambient temperature	-35°C...+70°C
Supply voltage	24V: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	Typ. 25mA
Terminal	Pluggable terminal, max. 1,5mm ²
Sensor	4 detector electrodes at the lower side of the enclosure
Contact pin	Material stainless steel
Display	LED green: operating LED red: alarm
Enclosure	Material PA6, colour pure white, similar toRAL9010
Cable entry	M16
Protection	IP65

LEAKAGE SENSOR

LS02

PG1

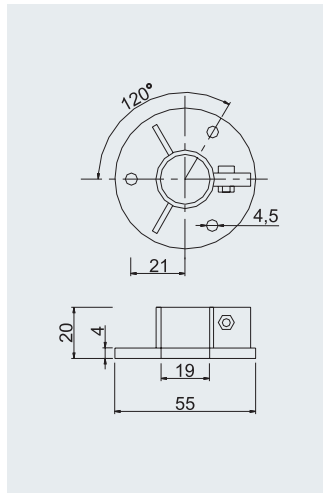
Type

Art. No.

LS02

427807

Accessory – Mounting Flange / Protective Covers «



Mounting flange MF19
for
Duct humidity sensors F(T)K, LCN-F(T)K and
Room pendulum humidity sensors F(T)P

- > Material PA6.6, colour black
- > Operating temperature 130°C

MOUNTING FLANGE

FOR F(T)K, LCN-F(T)K, F(T)P

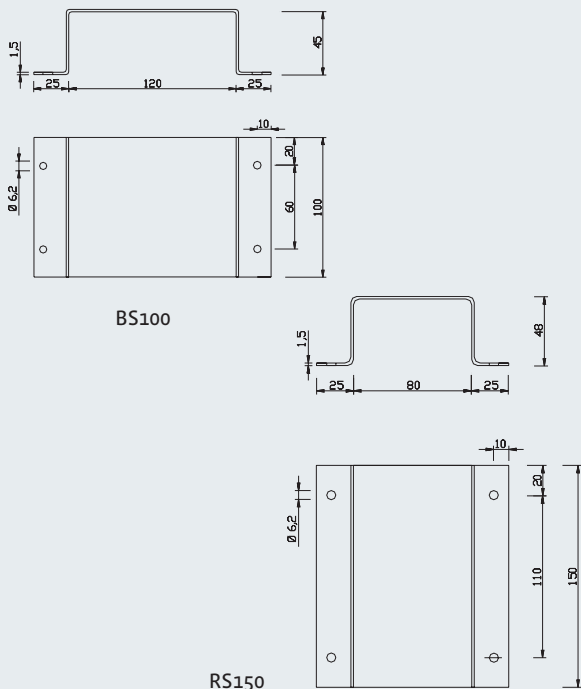
PG1

Description

Art. No.

Mounting flange MF19 (PA6.6)

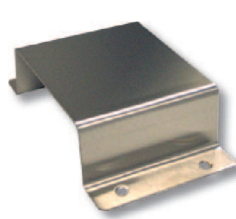
7375



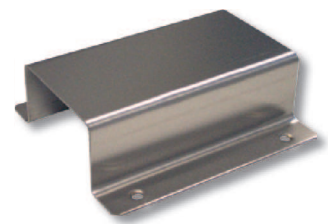
Ball Stroke Protection BS100
Sun-/Rain Protection RS150

- BS100: Protection against mechanical influences
for surface-mounting room pendulum humidity sensors
F(T)W04 and LCN-FTW04
- RS150: Protection against fierce sun and rain influences
for outdoor humidity sensors F(T)A54, LC-F(T)A54

- > Material stainless steel 1.4301



BS100



RS150

BALL STROKE PROTECTION / SUN-/RAIN PROTECTION

FOR F(T)W04, F(T)A54, LC-F(T)A54, LCN-FTW04

PG1

Description

Art. No.

BS100

103312

RS150

103329