

2018 Catalog





Sensors, Transmitters, Switches, Detectors, Thermostats, Valves & Actuators for Building Management Systems (BMS) and HVAC

Established 2004 - world wide deliveries to more than 70 countries

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COW 1351 MDR

COW 13F0 and COW 1351 MDR are standard types, Other COW types in data sheet

Features

- Power supply 24 Vac/dc
- IP ratings
 IP65 for enclosure
 IP41 for probe
- MEMS electrochemical sensor
- Sensor life time minimum 10 years

COW 13F0:

- Measuring ranges 0-100 ppm or 0-300 ppm, jumper selectable
- Output
 4-20 mA or 0-10 Vdc, jumper selectable

COW 1351 MDR:

- Measuring range
 0-100 ppm or 0-300 ppm, jumper selectable
- Two Outputs 4-20 mA and 0-10 Vdc
- Modbus RS485 communication
- LCD Display 12x2
- Relay output, user can set any level

On request





NEW



CO detectors for duct mounting COD-series and CO detectors for room mounting COR-series, see data sheets for different types







Carbon Monoxide (CO) sensoras with PCB, can easily be exchanged



Special filter for IP65 protection of Carbon Monoxide (CO) gas sensor head.



Duct Mounting Set DMS 300G



Duct Mounting Set DMS 300G with Carbon Monoxide (CO) Gas Detector

- Output 4-20 mA or 2-10 Vdc
- Power supply 24 Vac/dc
- Digital measurement value processing incl. temperature compensation
- Internal function control with integrated hardware watchdog
- Data / measured values in micro controller of sensor unit, therefore simple exchange uncalibrated <> calibrated
- · High accuracy, selectivity and reliability
- · Low zero point drift
- Hardware & software according to SIL2 compliant development process
- Easy maintenance and calibration by exchange of the sensor unit or by comfortable on-site calibration
- · IP65 enclosure with quick locking screws
- Duct Mounting Set availble for measuring of gases in duct

Gas type	Range	Sensor Element	Normal Life time
Carbon Monoxide (CO)	0-100 ppm	Electrochemical	72 months
Carbon Monoxide (CO)	0-300 ppm	Electrochemical	72 months
On request Carbon Monoxide (CO) det	ectors with ranges 0-	150 ppm, 0-250 ppm and (0-500 ppm
Duct Mounting Set			
	Carbon Monoxide (CO) On request Carbon Monoxide (CO) det	Carbon Monoxide (CO) 0-300 ppm On request Carbon Monoxide (CO) detectors with ranges 0-	Carbon Monoxide (CO) 0-100 ppm Electrochemical Carbon Monoxide (CO) 0-300 ppm Electrochemical On request Carbon Monoxide (CO) detectors with ranges 0-150 ppm, 0-250 ppm and 0

On request

Gas Detectors for CO_2 , NO_2 , NH_3 , O_2 and CH_4





- High accuracy +/-1%
- Power Supply and Output
 16-30 Vac/dc with 0-10 Vdc (3-wire) for PAT 010D
 12-30 Vdc with 4-20 mA (2-wire) for PAT 420D
- · LCD digital display
- Including duct fixing kit
 2 plastic tubes with integrated mounting plate,
 2 metres PVC hose and
 4 screws
- Including mounting bracket
- IP54 protection

DIP-switches on PCB to select

Pressure Range,

Pressure Unit and

Response Time



Pressure ranges

10 pressure ranges in same unit selectable via DIP-switches on pcb.

Full range:

0 to 100 Pa, 0 to 250 Pa, 0 to 500 Pa, 0 to 750 Pa or 0 to 1000 Pa

Bi-directional:

-50 to +50 Pa , -125 to 125 Pa, -250 to +250 Pa, -375 to +375 Pa or -500 to +500 Pa

Pressure Units

Other pressure units than Pa are available and selectable via DIP switches on pcb mmHH2O, mbar, inWG, mmHG, daPa, Kpa, hPa

Response Times

Response time selectable via DIP switches on pcb 0.5 ,1.0, 2.0 or 4.0 seconds

Type no.	Description
PAT 010D	Flexible & Multi Functional Air Differential PressureTransmitter 0-10 Vdc output
PAT 420D	Flexible & Multi Functional Air Differential PressureTransmitter 4-20 mA output





- Selectable output via jumper 0-10 Vdc or 4-20 mA output, 3-wire with power supply 24 Vac/dc
- 4-20 mA output, 2-wire with power supply 24 Vdc
- Pressure ranges from 0-100 Pa up to 0-250 kPa
- 2 adjoining pressure ranges in one unit, pressure ranges selectable via jumper
- With out display as standard
- On request LED display (only available on the 3-wire version)
- Including duct fixing kit
 2 plastic tubes with integrated mounting plate,
 2 metres PVC hose and
 - 4 screws

Type no.	Analogue output 1	Analogue output 2	Pressure range 1	Pressure range 2	Conn.	Power supply	LED display	Switch. output
984M.523104	0-10 Vdc	4-20 mA	0 to 100 Pa	0 to 250 Pa	3-wire	24 Vac/dc	no	yes
984M.533104	0-10 Vdc	4-20 mA	0 to 250 Pa	0 to 500 Pa	3-wire	24 Vac/dc	no	yes
984M.543104	0-10 Vdc	4-20 mA	0 to 500 Pa	0 to 1.000 Pa	3-wire	24 Vac/dc	no	yes
984M.553104	0-10 Vdc	4-20 mA	0 to 1 kPa	0 to 2.5 kPa	3-wire	24 Vac/dc	no	yes
984M.573104	0-10 Vdc	4-20 mA	0 to 5 kPa	0 to 10 kPa	3-wire	24 Vac/dc	no	yes
984M.593104	0-10 Vdc	4-20 mA	0 to 25 kPa	0 to 50 kPa	3-wire	24 Vac/dc	no	yes
984M.5B3104	0-10 Vdc	4-20 mA	0 to 100 kPa	0 to 250 kPa	3-wire	24 Vac/dc	no	yes
984M.523204	4-20 mA		0 to 100 Pa	0 to 250 Pa	2-wire	24 Vdc	no	no
984M.533204	4-20 mA		0 to 250 Pa	0 to 500 Pa	2-wire	24 Vdc	no	no
984M.543204	4-20 mA		0 to 500 Pa	0 to 1.000 Pa	2-wire	24 Vdc	no	no
984M.553204	4-20 mA		0 to 1 kPa	0 to 2.5 kPa	2-wire	24 Vdc	no	no
984M.573204	4-20 mA		0 to 5 kPa	0 to 10 kPa	2-wire	24 Vdc	no	no
984M.593204	4-20 mA		0 to 25 kPa	0 to 50 kPa	2-wire	24 Vdc	no	no
984M.5B3204	4-20 mA		0 to 100 kPa	0 to 250 kPa	2-wire	24 Vdc	no	no

On request: with LED display

On request:

customized pressure ranges

-50 Pa to +50 Pa, -100 Pa to +100 Pa, -500 Pa to +500 Pa, 0 to -50 kPa etc.







30-400 Pa

50-500 Pa

200-1.000 Pa

500-2.500 Pa

1000-4.000 Pa

15 Pa

20 Pa

100 Pa

150 Pa

250 Pa

Features

- On/off output
- Electrical rating 250 Vac
- 7 different pressure ranges from 20-200 Pa up to 1.000-4.000 Pa
- Switching pressure can easily be adjusted on a scaled adjustment knob
- Static, over, differential pressure and vaccum
- IP54 protection

Can be deliveried in 3 different alternatives

- 1. Only the pressure switch
- 2. The pressure switch separately packed and the duct fixing kit separately packed.
- 3. The pressure switch and the duct fixing kit packed together in one carton.

Special Net

Type no.	Adjustment pressure range	Switching differential	Output	Electrical rating	
Air differential pro	essure switch				
930.80 222511	20–200 Pa	10 Pa	on/off	250 Vac	
930.80 222511N	20-300 Pa	10 Pa	on/off	250 Vac	
930.84 222511	30-400 Pa	15 Pa	on/off	250 Vac	Special Net
930.83 222511	50-500 Pa	20 Pa	on/off	250 Vac	
930.85 222511	200-1.000 Pa	100 Pa	on/off	250 Vac	
930.86 222511	500-2.500 Pa	150 Pa	on/off	250 Vac	
930.87 222511	1000–4.000 Pa	250 Pa	on/off	250 Vac	
DFK 200	Duct fixing kit include 2 plastic tubes with it 2 metres PVC hose 4 screws	ntegrated mounti	ng plate,		

930.84 222534

930.83 222534

930.85 222534

930.86 222534

930.87 222534

on/off

on/off

on/off

on/off

on/off

250 Vac

250 Vac

250 Vac

250 Vac

250 Vac





RHT 010 010 D with display



RHT 010 010 without display

- Humidity and Temperature outputs in same unit
- Humidity output 0-10 Vdc or 4-20 mA
- Temperature output 0-10 Vdc or 4-20 mA
- Passive temperature sensing element PT1000, PT100, NTC 10K, NTC 20K, NTC 1.8K, NI1000 etc as option
- · With or without display
- Humidity accuracy ± 2% at 20 to 80% rH
- Temperature accuracy 0,3K (+5°C to 60°C) + 1.5% f.s
- 4 selectable temperature ranges via DIP switches
- DIP switch on pcb to select:
 - Relative Humidity,
 - Absolute Humidity
 - Dew Point or
 - Enthalpy

Type no.	Humidity output	Temp. output	Passive temp. sensing element	Display
RHT 010 010	0-10 Vdc	0-10 Vdc	No	No
RHT 010 010 D	0-10 Vdc	0-10 Vdc	No	Yes
RHT 420 420	4-20 mA	4-20 mA	No	No
RHT 420 420 D	4-20 mA	4-20 mA	No	Yes
RHT 010 010 XXX	0-10 Vdc	0-10 Vdc	Yes	No
RHT 010 010 XXX D	0-10 Vdc	0-10 Vdc	Yes	Yes
RHT 420 420 XXX	4-20 mA	4-20 mA	Yes	No
RHT 420 420 XXX D	4-20 mA	4-20 mA	Yes	Yes

XXX = passive temperature sensing element
PT100, PT100 1/3 DIN,
PT1000, PT1000 1/3 DIN,
NI1000, NI1000/TK5000,
NTC 1.8K, NTC 5K, NTC 10K, NTC 20K, KTY81-210

Example:

Humidity output 0-10 Vdc, Temperature Output 0-10 Vdc PT1000 passive temperature sensing element and display, type is: RHT 010 010 PT1000 D





DHT 010 010D with display



DHT 010 010 without display

- Humidity and Temperature outputs in same unit
- · With or without display
- Humidity output 0-10 Vdc or 4-20 mA
- Temperature output 0-10 Vdc or 4-20 mA
- Passive temperature sensing element PT1000, PT100, NTC 10K, NTC 20K, NTC 1.8K, NI1000 etc as option
- Humidity tolerance ± 2% at 20 to 80% rH
- Temperature tolerance ± 0,5K
- 4 selectable temperature ranges via DIP switches
- DIP switch on pcb to select:
 - Relative Humidity,
 - Absolute Humidity
 - Dew Point or
 - Enthalpy
- Including duct mounting flange
- IP65 protection

Type no.	Humidity output	Temp. output	Passive temp. sensing element	Display
DHT 010 010	0-10 Vdc	0-10 Vdc	No	No
DHT 010 010 D	0-10 Vdc	0-10 Vdc	No	Yes
DHT 420 420	4-20 mA	4-20 mA	No	No
DHT 420 420 D	4-20 mA	4-20 mA	No	Yes
DHT 010 010 XXX	0-10 Vdc	0-10 Vdc	Yes	No
DHT 010 010 XXX D	0-10 Vdc	0-10 Vdc	Yes	Yes
DHT 420 420 XXX	4-20 mA	4-20 mA	Yes	No
DHT 420 420 XXX D	4-20 mA	4-20 mA	Yes	Yes

XXX = passive temperature sensing element PT100, PT100 1/3 DIN, PT1000, PT1000 1/3 DIN, NI1000, NI1000/TK5000, NTC 1.8K, NTC 5K, NTC 10K, NTC 20K, KTY81-210

Example:

Humidity output 0-10 Vdc, Temperature Output 0-10 Vdc PT1000 passive temperature sensing element and display, type is: DHT 010 010 PT1000 D





OHT 010 010 D with display



OHT 010 010 without display

- · Humidity and Temperature outputs in same unit
- Humidity output 0-10 Vdc or 4-20 mA
- Temperature output 0-10 Vdc or 4-20 mA
- Passive temperature sensing element PT1000, PT100, NTC 10K, NTC 20K, NTC 1.8K, NI1000 etc as option
- · With or without display
- Humidity accuracy ± 2% at 20 to 80% rH
- Temperature accuracy 0,3K (+5°C to 60°C) + 1.5% f.s
- 4 selectable temperature ranges via DIP switches
- DIP switch on pcb to select:
 - Relative Humidity,
 - Absolute Humidity
 - Dew Point or
 - Enthalpy"
- IP65 protection

Type no.	Humidity output	Temp. output	Passive temp. sensing element	Display
OHT 010 010	0-10 Vdc	0-10 Vdc	No	No
OHT 010 010 D	0-10 Vdc	0-10 Vdc	No	Yes
OHT 420 420	4-20 mA	4-20 mA	No	No
OHT 420 420 D	4-20 mA	4-20 mA	No	Yes
OHT 010 010 XXX	0-10 Vdc	0-10 Vdc	Yes	No
OHT 010 010 XXX D	0-10 Vdc	0-10 Vdc	Yes	Yes
OHT 420 420 XXX	4-20 mA	4-20 mA	Yes	No
OHT 420 420 XXX D	4-20 mA	4-20 mA	Yes	Yes

XXX = passive temperature sensing element

PT100, PT100 1/3 DIN, PT1000, PT1000 1/3 DIN, NI1000, NI1000/TK5000, NTC 1.8K, NTC 5K, NTC 10K, NTC 20K, KTY81-210

Example:

Humidity output 0-10 Vdc, Temperature Output 0-10 Vdc PT1000 passive temperature sensing element and display, type is: OHT 010 010 PT1000 D



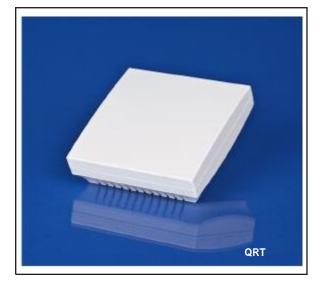


- Humidifying or dehumidifying, selectable via terminal wiring on pcb
- Setting range 25 to 95% r.H.
- Set point

 - Exposed set point for HRS 1ES Concelaed set point for HRS 1CS
- Power supply 24 Vac/dc

Type no.	Description	EURO price
HRS 1ES	Mechanical room hygrostat, 1 step, exposed set point	
HRS 1CS	Mechanical room hygrostat, 1 step, concelaed set point	







Detectable VOC gases

- Cigarette smoke
- Automobile exhaust
- Breath air
- Carbon dioxide (CO₂)
- Carbon monoxide (CO)
- · Solvent fumes · Alcohol fumes
- Acetone
- Acrylonitrile
- Ammonia
- Benzene
- Chlorine
- Dimethyl amine
- Ethane
- Ethylene
- Ethylene oxide Formaldehyde
- Hydrogen

- Hydrogen sulfide
- Isobutane
- Methane
- Methanol
- Methyl chloride
- Methylene chloride
- Methy ether
- Methyl acetate
- · Methyl ethyl ketone • n-Hexane 2
- n-Petane
- Propane
- R-11
- R-12
- R-502
- R-123
- Sulfur dioxide
- Vinyl chloride

Features

- · Used to determine the air quality, based on a mixed gas sensor (VOC sensor)
- VOC = Volatile Organic Compounds
- · To measure the air quality in offices, hotels, meeting rooms, convention centres, schools, airports, apartments, stores, restaurants etc.
- 0-10 Vdc or 4-20 mA output (selectable) 0-10 Vdc: 0 Vdc = clean air, 10 Vdc = polluted air 4-20 mA: 4 mA = clean air, 20 mA = polluted air

QRT (room):

- IP30 plastic enclosure
- On request:
- change-over contact
- change-over contact and with "traffic light" 5 coloured LED's
- change-over contact and with "traffic light" 5 coloured LED's and with potentiometer
- stainless steel enclosure

QDT (duct):

- · Including duct mounting flange
- IP65 enclosure with quick locking screws
- On request:
- change-over contact

Type no.	Description
QRT	Room Air Quality (VOC) transmitter, output 0-10 Vdc or 4-20 mA (jumper selectable)
QDT	Duct Air Quality (VOC) transmitter, output 0-10 Vdc or 4-20 mA (jumper selectable)





- Carbon Dioxide (CO₂) + Temperature (T) transmitter for room mounting
- CO₂ measuring range 0-2.000 ppm
- CO₂ output 0-10 Vdc
- CO₂ accuracy +/-70 ppm plus 5% of measured value
- Temperature measuing range 0 to +50°C
- Temperature output 0-10 Vdc
- Deviation temperature +/- 0.8 K at 20°C
- Power supply 24 Vac/dc
- Encloure material ABS Plastic On request: Stainless steel

Type no.	Description
CDR 010T	Room CO ₂ +Temperature transmitter 2 x 0-10 Vdc, 0-2000 ppm



Features

- \bullet CO $_2$ range 0-2000 ppm or 0-5000 ppm, jumper selectable
- Accuracy ± 30 ppm ± 3% of measured value
- Output 0-10 Vdc or 4-20 mA, jumper selectable
- Change over contact
- Optical NDIR sensor (non-dispersive Infra-red technology)
- Self Calibrating
- Including duct mounting flange
- IP65 enclosure with quick locking screws
- CDK 24 with out display and CDK 24D with display

Type no.	Description
CDK 24	Duct CO ₂ transmitter 0-10 Vdc or 4-20 mA, 0-2000 ppm or 0-5000 ppm, change over contact
CDK 24D	same as CDK 24 and with display



transmitter with Display for room mounting



Features

- Carbon Dioxide (CO2) output 0-10 Vdc
- Temperature (T) output 0-10 Vdc
- Humidity (rH) output 0-10 Vdc
- With Display to show actual value of CO2+T+rH
- Carbon Dioxide (CO₂) sensor
 NDIR Sensor with auto calibration
- Carbon Dioxide (CO₂) ranges
 0-2000 ppm or 800 to 1200 ppm, jumper selectable
- Carbon Dioxide (CO₂) accuracy
 ±50 ppm ± 4% (25°C / 1013 mbar)
- Temperature (T) accuracy ± 0.5°K (+10°C to +40°C)
- Humidity (rH) accuracy ± 2% (20 to 80% rH)
- DIP switch on pcb to select:
 - Relative Humidity,
 - Absolute Humidity,
 - Dew Point or
- Enthalpy
- Passive temperature sensing element
 PT1000, PT100, NTC 10K, NTC 20K, NTC 1.8K, NI1000 etc as option

Type no. Description

RCD 010 THD Carbon Dioxide (CO₂) + Temperature (T) + Humidity (rH) transmitter with Display for room mounting

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RCD 010 THD is the standard type, other types are manufactured and supplied on request.

For example without display, without humidity output and without temperature output, see data sheet for all different types.



Temperature Sensors, with NTC 10K and PT1000 sensing elements

	Type no.	Description
	1 ypc 110.	
	TDN NTC 10K 200	Duct temperature sensor, NTC 10K, IP65, probe lenght 200 mm
	TDN PT1000 200	Duct temperature sensor, PT1000, IP65, probe lenght 200 mm
000		The duct temperature sensor TDN have neoprane gasket for good sealing into duct.
	DMF	Duct Mounting Flange
		Duct mounting flange DMF can be used to adjust insertion lenght
	TRN NTC 10K	Room temperature sensor, NTC 10K
	TRN PT1000	Room temperature sensor, PT1000
	TIN NTC 10K 100	Immersion temperature sensor, NTC 10K, IP65, probe lenght 100 mm
000	TIN PT1000 100	Immersion temperature sensor, PT1000, IP65, probe lenght 100 mm
	SSP 100	Immersion pocket, stainless steel (s/s), lenght 100 mm BSP Thread Type, British Standard Pipe Thread
1	TSN NTC 10K 1M	Strap-on temperature sensor, NTC 10K, cable lenght 1 meter
	TSN PT1000 1M	Strap-on temperature sensor, PT1000, cable lenght 1 meter
		The strap-on temperature sensor TSN is included 300 mm adjustable strap-on band, for pipe diameter 13 to 92 mm (1/4" to 3").
	TON NTC 10K 2M	Outdoor temperature sensor, NTC 10K, IP65, cable lenght 2 meters
9	TON PT1000 2M	Outdoor temperature sensor, PT1000, IP65, cable lenght 2 meters
	Temperature Tr	ransmitters with active output 0-10 Vdc and 4-20 mA avalable, ask for price.





- · Weather Sensor Shield
- · Protection from rain and radiated heat
- 6 plates
- · To be assemblied on wall or on pipe/mast
- Suitable on pipe/mast diameters from 20 mm to 40 mm
- · Suitable for different sensor probe diameters
- Photo show weather sensor shield RSS 100 assemblied together with VCP outdoor humidity/temperature transmitter.



Features

- · Sensor guard in parking garage
- · Sensor guard in ball game halls
- Sunshade and weather protection for outside wall mounted sensors
- Stainless steel
- Size 184 x 180 x 80 mm
- Simple mounting
- Photo show sensor guard SGD SS1 together with VCP carbon monoxide gas detector.



Features

- · Sensor guard for room/space sensors
- · Sensor guard in ball game halls
- Robust construction
- Powder coated mild steel
- Size 122 x 130 x 55 mm
- Simple mounting
- Photo show sensor guard SGD MS1 together with VCP room humidity/temperature transmitter



Prices depends on sensor/transmitter type and on the quantities.

Features

· Available for:

- Stainless steel room/wall enclosure, to be used in ball game halls, miltary baracks or any room
 - or area where robust enclosure is required.
- Temperature sensors/transmitters
- Humidity/temperature transmitters
- Air Quality (VOC) transmitters
- Carbon Dioxide transmitters









- Prevents "indoor rain" condensation
- Enables optimal efficiency for chilled beam applications
- Early detection of condensation danger
- · High accuracy and long term stability
- · Compact design
- Fast response time
- Easy mounting and connecting
- · LED status indication

Applications

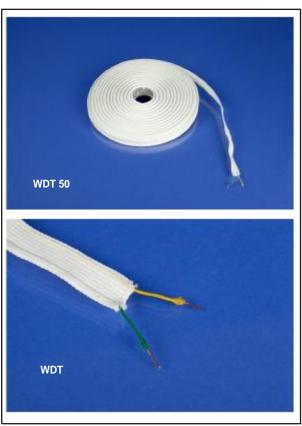
- · Chilled ceilings
- · Heating-, ventilation- and air conditioning systems
- · Switching and electronics cabinets
- In swimming pools or on shop windows around the glazing fogging with optimized use of energy or to keep free of ice.
- In water treatment plants or industrial plants to "sweating" of cold pipeline networks to detect.
- In hangars and storage rooms to prevent condensation on cold outside walls or steel doors and to protect the masonry.
- In control cabinets or machines in order to detect condensation on sensitive electronic components.

Features

- Prevents "indoor rain" condensation
- Enabless optimal efficiency for chilled beam applications
- · Low smoke & fume flying lead cable
- Volt Free Contact or current output
- Adjustable set point
- Operates on calculated dew point







- Early detection = Early warning
- Detection of moisture and water

WWD, water warning detector

- Mounting:
- On wall with the external water detection tape WDT
- Direct on floor (WWD have 2 sensing pins under the unit)
- WWD senses the change in conductivity when moisture or water is in contact with the sensing pins and when moisture or water is in contact with the external water detection tape WDT
- Microprocessor based
- Power supply 12-30 Vac/dc
- Relay output
- Buzzer (WWD 103N)

WDT, water detection **t**ape

- WDT water detection tape is made of texturiced stockinet-knitted polyester in which parallel uninsulated wires of soft annealed copper are woven
- Indicates presence of water or moisture between the wires
- The water detection tape WDT can be used with the water warning detector WWD
- WDT are available in standard lengths (rolls) of 25 and 50 metres or per meter below 25 meters.
- Lengths of band can be connected by using connection sleeves and clamping tong

Type no.	Description						
WWD 102N	Water warning detector 12-30 Vac/dc, relay output						
WWD 103N	Water warning detector 12-30 Vac/dc, relay output with buzzer						
WDT 25	A roll of 25 meters water detection tape						
WDT 50	A roll of 50 meters water detection tape						
WDT	Water detection tape if order other lengths less than 25 meters						





- Early warning of smoke and fire
- Sensing smoke directly in the duct
 <u>without</u> help of built-in fan in the detector No use of sampling tubes A true duct smoke detector !!!

- IR-detection (obscuration)
- Outputs

Relay SPDT 1A@24Vdc, 120 Vac

Analogue 2-10 Vdc

• Analogue output status levels

< 2 Vdc Sensor fault < 3-7 Vdc Normal operation < 7-9 Vdc Optics require cleaning

> 9,5 Vdc Smoke alarm

- The analogue output signal 2-10 Vdc can transmit smoke or service alarm (dirt level) to BEMS system
- · Relay output for closing fan/damper motor
- Damped or undamper output (jumper selection)
- Manual or auto reset (jumper selection)
- Reset button in front of enclosure
- Power supply 24 Vac/dc

Type no. Description

VSD 301 Duct smoke detector, 300 mm probe length



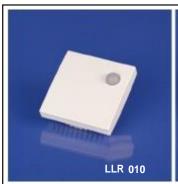
The room smoke detector FWD 305-series is an optical room smoke detector type, optical room smoke detector type is also named as photoelectric room smoke detector type.

Features

- Early warning of smoke and fire
- Optical (photoelectric) smoke chamber
- Fire alarm siren
- Alarm relay output
- · Inter connection with other detectors
- Test button
- Micro processor
- 8 seconds delay before the relay activates
- Power supply 12-24 Vdc
 24 Vac and 48 Vdc as option
- Battery back-up as option
- Error alarm output as option

Type no.	Description
FWD 305	Room smoke detector with fire alarm siren and alarm relay output NO/NC, power supply 12-24 Vdc







· Selectable ranges via DIP switches:

LLR:	LLO:
0 to 500 Lux	0 to 500 Lux
0 to 1 kLux	0 to 1 kLux
0 to 5 kLux	0 to 2 kLux
0 to 20 kLux	0 to 5 kLux
	0 to 20 kLux
	0 to 60 kl ux

• Output

0-10 Vdc for LLR 010 and LLO 010 4-20 mA for LLR 420 and LLO 420

- Accuracy < +/- 5% of final value
- · Active control of artificial lighting
- Maximum energy efficiency
- Optimise light levels

Type no.	Description						
LLR 010	Room light level transmitter 0-10 Vdc output						
LLR 420	Room light level transmitter 4-20 mA output						
LLO 010	Outdoor light level transmitter 0-10 Vdc output						
LLO 420	Outdoor light level transmitter 4-20 mA output						



Features

- Monitoring of flow and non-agressive gaseous
- IP65 plastic housing
- Base in galvanised steel
- Moving arm in brass
- · Vane in stainless steel

Application

Air flow paddle switch FAPS is intended to monitor air flow and non-agressive gaseous within a duct and provides a switched output on detection of either a specified air velocity or flow failure.

Type no.	Description	Min. switch on	Min. switch off	Max. switch on	Max. switch off
FAPS	Air Flow Paddle Switch	2.5 m/sec	1.0 m/sec	9.2 m/sec	8.0 m/sec





- Bright back-lit display with interactive touch screen
- Adjustable manual 3-speed or automatic fan speed control, High, Medium and Low
- Setting point range +10 to +30°C
- Accuracy +/-1 °C
- NTC thermistor sensing element
- Power supply 220 Vac
- Setting Turn on/off within 24 hours
- Data Memory:
 If the power cut off accidentally, it could be continuing to work by order if the power returns
- Attractive modern styling and smart outlooking (12 mm only for surface board)

Available for:

- Fan coil unit
- Two-line Motorized Valve
- Three-line Motorized Valve
- Solenoid Valve
- Heating Equipment
- Three-speed angle fan valve

Type	no.	Description
i y p c		Description

Touch Screen Thermostat, Heating Cooling

TST 8A 2-pipe system, controls fan coil and 2-wire motorized valve wit	13	Fan	Speed
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TST 8B Controls on/off (open/close) valve

TST 8C 2-pipe system, controls fan coil and 3-wire motorized valve with 3 Fan Speed

TST 8D Controls on/off (0 to 30°C, 0 to 60°C 0 to 90 °C) damper

TST 8E Four-pipe systems, controls fan coil and 2-wire or 3-wire motorized valve with 3 Fan Speed.

TST 8MV Modulating 0-10 Vdc with 3 Fan Speed.





- 3 speed fan switch (HIGH-MED-LOW)
- · LCD display with blue backlight
- Setting point range +5 to +35°C
- Power supply 220 Vac
- NTC thermistor sensing element
- 4 different models:

ETL 9A: 2-line Motorized Valve and Fan Coil Unit

ETL 9B: On/Off Motorized Damper Valve

ETL 9C: 3-line Motorized Valve, Fan Coil Unit

ETL 9E: For 4-pipe system (2 Motorized Valves + Fan Coil Unit)

Type no. Description

Room Thermostat 3-speed (High-Med-Low) with LCD display

ETL 9A 2-line Motorized Valve and Fan Coil Unit

ETL 9B On/Off Motorized Damper Valve ETL 9C 3-line Motorized Valve, Fan Coil Unit

ETL 9E For 4-pipe system (2 Motorized Valves + Fan Coil Unit)



Features

- · Fan speed switch
 - 3 speed (HIGH-MED-LOW)
- HEAT-OFF-COOL switch
- Setpoint knob with range +10 to +30°C
- Power supply 220 Vac

Description Type no.

MRT 31A Room Thermostat 3-speed High-Med-Low, Heat-Off-Cool





Zone Valves VZ-series

- 2-way, 3-way and 3-way 4-port valves
- Sizes DN15 and DN20 (1/2 inch and ¾ inch)
- Kvs values from 0.25 up to 6.0
- · Brass valve body
- Operating pressure 16 Bar (PN16)
- Stainless steel stem
- Stroke length 2.5 mm
- Stem tight double OR ring in EPDM
- · Seat in technopolymer
- Threaded male collar M30x1.5 for fitting of actuator
- All VZ-valves are Normally Closed (NC),
 i.e. the action of the valve spring makes the plug move to the upper seat, even with disassembled actuator.

Actuators AZ-series

- AZ-series actuators to be used with VZ-series DN15 and DN20 valves with kvs value from 0.25 up to to 6.0
- Actuating force 140 N
- Control Signals
 On/Off , PWM (Pulse With Modulation) or 0-10 Vdc
- Normally Closed (NC)
- Stroke length 2.5 mm
- Position indicator
- Fast and easy assembling of actuator on valve with a threaded ring nut
- The ring nut M30x1.50 suppiled with the actuator Threaded ring nut for other valve brands on request
- Supplied with 2 meter cable
- · Applied in hot and chilled applications

Type no. zone valve	Body Size	Kvs direct way	Kvs angle way	Type no actuator	Control signal	Power supply	
VZ2 100	2-way 1/2" (DI	N15) 1.0		AZD 140	4 on/off or		
VZ2 160	2-way 1/2" (DI	N15) 1.6			PWM	24 Vac/dc	
VZ2 250	2-way 3/4" (DI	N20) 2.5					
VZ2 400	2-way 3/4" (DI	N20) 4.0		AZD 1403	on/off	230 Vac	
VZ2 600	2-way 3/4" (DI	N20) 6.0		AZP 1401	0-10 Vdc	24 Vac	
VZ3 100	3-way 1/2" (DI	N15) 1.0	0.6	ei e			
VZ3 160	3-way 1/2" (DI	N15) 1.6	1.0				
VZ3 250	3-way 3/4" (DI	N20) 2.5	1.6				
VZ3 400	3-way 3/4" (DI	N20) 4.0	2.5				
VZ3 600	3-way 3/4" (DI	N20) 6.0	4.0			Zon	e valves VZ-series
	with kvs value 0.2 t valve on request	•	60 on request			asse	e valves vz-series emblied with lators AZ-series







- Control signals
 on/off or Pulse Width Modulation (PWM)
 or 0-10 Vdc
- Normally Closed
- Stroke lenght 4.0 mm
- Force 100 N

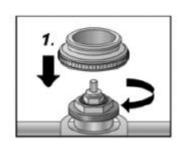
Adaptor to be used between actuator and valve.

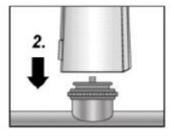
Adaptors availvable to more than 50 valve brands on the market.

For examples:

Honeywell, Siemens (Landis & Staefa), Danfoss, Johnson Controls, Sauter, Tour & Anderson, MMA (Markaryd), Cazzaniga, Herz, Oventrop, Heimeier and many more.

Valve adaptors can be used on new and existing valves







Гуре по.	Description	Power supply	Control signal					
A 40405-10N00	Actuator without valve adaptor	24 Vac/dc	on/off or PWM					
A 20405-10N00	Actuator without valve adaptor	230 Vac	on/off or PWM					
APR 40405-00N00	Actuator without valve adaptor	24 Vac	0-10 Vdc					
VA 80	Heimeier, Tour & Andersson as of Johnson Controls V5210KC, V5510	Valve adaptor for VCP VZH valves, Heimeier, Tour & Andersson as of 1999, Honeywell V9050, Johnson Controls V5210KC, V5510KC, Sauter VXL F200 & 210, BXL F200 & 210, BUT 010 F410						
VA 50	Valve adaptor for Landis & Gyr, Siemens VDN 215, Watts/Cazzaniga, Sauter VXLF220, BUT015 F410, BUT010 F400, BUT015 F210, Herz							
/A 78	Valve adaptor for Danfoss RA (RA I	Valve adaptor for Danfoss RA (RA N, RA UN) high flange						
	Adaptors for other valve brands ava	ailable, see data	sheet for more information.					
	Actuators with other features, see data sheet for more information.							





- $\begin{tabular}{ll} \bullet & Torque 2 & Nm \\ & to & regulate & dampers & up to & approx. & 0.5 & m^2 \\ \end{tabular}$
- Control signal
 RA2 24 D = on/off
 RA2 220D = on/off
 RA2 24V = 2-10 Vdc
- Feedback signal 2-10 Vdc for RA2 24V
- Power supply
 RA2 24 D = 24 Vac/dc
 RA2 220D = 220 Vac
 RA2 24V = 24 Vac/dc
- · Position indicator
- Manual override by push button
- Direction of rotation changeable via L/R switch outside damper actuator
- Supplied with 0.9 m cable
- Rotation angle max 95°
- Auxiliary switch on request

Type no.	Torque	For dampers up to approx.	Control signal(s)	Power supply	Running time
RA2 24D	2 Nm	0.5 m²	On/off	24 Vac/dc	30-35 sec
RA2 220D	2 Nm	0.5 m ²	On/off	220 Vac	30-35 sec
RA2 24V	2 Nm	0.5 m ²	2-10 Vdc	24 Vac/dc	80-110 sec





- Torques 4 Nm, 8 Nm, 16 Nm, 24 Nm and 32 Nm
- Max size of damper shaft for
 - 4 Nm damper actuators
 - Round shaft 16 mm in diameter
 - Square shaft 12x12 mm
- Max size of damper shaft for
 - 8, 16, 24 and 32 Nm damper actuators
 - Round shaft 20 mm in diameter
 - Square shaft 16x16 mm
- Feedback signal 2-10 Vdc on analogue damper actuators 8, 16, 24 and 32 Nm
- Rotation angle 0-90°
- Position indicator
- Manual override by push button
- Direction of rotation changable
- · Anti-rotation bracket provided for stability

On request

- Auxiliary switches
- Spring return actuators
- Fast running time actuators

Type no.	Torque	For dampers up to approx.	Control signal(s)	Power supply	Running time
RA4 24D	4 Nm	1.0 m²	On/off or 3-point	24 Vac/dc	35 secs
RA4 220D	4 Nm	1.0 m ²	On/off or 3-point	220 Vac	35 secs
RA4 24V	4 Nm	1.0 m ²	0-10 Vdc	24 Vac/dc	35 secs
RA4 24C	4 Nm	1.0 m²	4-20 mA	24 Vac/dc	35 secs
RA8 24D	8 Nm	2.0 m ²	On/off or 3-point	24 Vac/dc	30 secs
RA8 220D	8 Nm	2.0 m ²	On/off or 3-point	220 Vac	30 secs
RA8 24VC	8 Nm	2.0 m ²	2-10 Vdc or 4-20 mA	24 Vac/dc	30 secs
RA16 24D	16 Nm	4.0 m²	On/off or 3-point	24 Vac/dc	80 secs
RA16 220D	16 Nm	4.0 m ²	On/off or 3-point	220 Vac	80 secs
RA16 24VC	16 Nm	4.0 m²	2-10 Vdc or 4-20 mA	24 Vac/dc	80 secs
RA24 24D	24 Nm	6.0 m ²	On/off or 3-point	24 Vac/dc	125 secs
RA24 220D	24 Nm	6.0 m ²	On/off or 3-point	220 Vac	125 secs
RA24 24VC	24 Nm	6.0 m ²	2-10 Vdc or 4-20 mA	24 Vac/dc	125 secs
RA32 24D	32 Nm	8.0 m ²	On/off or 3-point	24 Vac/dc	140 secs
RA32 220D	32 Nm	8.0 m ²	On/off or 3-point	220 Vac	140 secs
RA32 24VC	32 Nm	8.0 m ²	2-10 Vdc or 4-20 mA	24 Vac/dc	220 secs





- Torques
 - 5 Nm for RAR5-series
 - 10 Nm for RAR10-series
 - 15 Nm for RAR15-series
- Suitable damper shaft dimensions

RAR5:

Round shaft 10-16 mm in diameter Square shaft 7-11 mm

RAR10 and RAR15:

Round shaft 10-19 mm in diameter Square shaft 10-16 mm

- Power supply 24 Vac/dc or 220 Vac
- · Control signal on/off
- Auxiliary switches available
- Position indicator
- Anti-rotation bracket provided for stability

Type no.	Torque	For dampers up to approx.	Control signal(s)	Power supply	Running time	Auxiliary switch(es)
RAR5 24D	5 Nm	1.0 m²	On/off	24 Vac/dc	actuator < 50-70 s spring < 20 s	No
RAR5 220D	5 Nm	1.0 m²	On/off	220 Vac	actuator < 50-70 s spring < 20 s	No
RAR5 24D S2	5 Nm	1.0 m ²	On/off	24 Vac/dc	actuator < 50-70 s spring < 20 s	Yes (2)
RAR5 220D S2	5 Nm	1.0 m ²	On/off	220 Vac	actuator < 50-70 s spring < 20 s	Yes (2)
RAR10 24D	10 Nm	2.0 m²	On/off	24 Vac/dc	actuator 100 s spring < 25 s	No
RAR10 220D	10 Nm	2.0 m ²	On/off	220 Vac	actuator 100 s spring < 25 s	No
RAR10 24D S2	10 Nm	2.0 m ²	On/off	24 Vac/dc	actuator 100 s spring < 25 s	Yes (2)
RAR10 220D S2	10 Nm	2.0 m²	On/off	220 Vac	actuator 100 s spring < 25 s	Yes (2)
RAR15 24D	15 Nm	3.0 m²	On/off	24 Vac/dc	actuator 180 s spring < 30 s	No
RAR15 220D	15 Nm	3.0 m ²	On/off	220 Vac	actuator 180 s spring < 30 s	No
RAR15 24D S2	15 Nm	3.0 m ²	On/off	24 Vac/dc	actuator 180 s spring < 30 s	Yes (2)
RAR15 220D S2	15 Nm	3.0 m ²	On/off	220 Vac	actuator 180 s spring < 30 s	Yes (2)



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