DWAM1

DWAM, DWAMV, SDBAM

Pressure monitors / pressure limiters

These series are particularly suitable for maximum pressure monitoring in steam and hot-water systems. The pressure switch is "of special construction", with a self monitoring pressure sensor, built in accordance with Pressure Equipment Directive PED 97/23/EC.

It can be used as a pressure monitor or a pressure limiter for maximum pressure monitoring (systems in accordance with TRBS DIN EN12828) systems in accordance with DIN EN12952-11 and DIN EN12953-9 and is available with or without adjustment.

SIL 2 according IEC 61508-2

Technical data

Pressure connection
External thread G 1/2 (pressure gauge connection) to DIN 16 288 and internal thread G 1/4 to ISO 228 Part 1.

Switching device
Rugged housing (200) made of seawater resistant die cast aluminium.

Materials
Pressure bellows: Material no. 1.4571
Sensor housing: Material no. 1.4104
Switch housing: GD Al Si 12 according to DIN 1725

Mounting position
Vertically upright and horizontal.

Ambient temperature at switching device
–20 to +70°C.

Medium temperature –20 to +70°C.
The maximum medium temperature at the pressure sensor must not exceed the permitted ambient temperature at the switching device. Temperatures may reach 85°C for short periods. Higher medium temperatures are possible provided the upper limit at the switching device is ensured by suitable measures (e.g. siphon).

Mounting
Directly on the pressure line (pressure gauge connection) or on a flat surface with two 4 mm Ø screws.

Calibration for maximum pressure switch
The pressure monitors and safety pressure limiting devices are calibrated so that, **under rising pressure**, switching takes place at the defined switching pressure. The reset point under falling pressure is lower by the amount of the switching differential, or, in the case of pressure limiting devices, by the fall in pressure specified in the table. The scale value corresponds to the upper switching point.

Switching differential
See Product Summary.

Contact arrangement
Single pole change over switch.

Switching capacity	250 VAC (ohm)	(ind)	250 VDC (ohm)	24 VDC (ohm)
Normal	8 A	5 A	0.3 A	8 A

Sealing P2
Generally available for SDBAM limiters.

Bursting pressure
For all types ≥ 100 bar.
Verified by TÜV test.

Component tested for	**Steam** Systems according to TRD 604 **Hot water** Systems according to DIN EN12828
Testing basis	VdTÜV Memorandum "Pressure 100"
Function	Pressure monitor / Pressure limiter
Directing of action	**For maximum pressure monitoring only**
Sensor	**"Of special construction"** (self monitoring sensor with safety diaphragm)

Product Summary Maximum pressure monitoring (↑)
(for other pressure ranges see DWR series)

Type	Setting range	Switching differential (mean values)	Max. permissible pressure	Dimensioned drawing
Pressure monitors without differential adjustment for max. pressure monitoring*				**page 21 + 22**
DWAM06	0.1…0.6 bar	0.04 bar	5 bar	
DWAM1	0.2…1.6 bar	0.05 bar	5 bar	1 + 15
DWAM6	1.2…6 bar	0.2 bar	10 bar	
DWAM625	1.2…6 bar	0.25 bar	20 bar	
DWAM16	3…16 bar	0.4 bar	20 bar	1 + 19
DWAM32	6…32 bar	1.2 bar	45 bar	
Pressure monitors with differential adjustment for max. pressure monitoring				
DWAMV1	0.2…1.6 bar	0.12…0.6 bar	5 bar	1 + 15
DWAMV6	1.2…6 bar	0.4…1.5 bar	10 bar	
DWAMV16	3…16 bar	0,8…2,5 bar	20 bar	1 + 19
DWAMV32	6…32 bar	2.5…6.0 bar	45 bar	

Pressure limiters for maximum pressure monitoring (with internal interlock)

		Pressure change for unlocking		
SDBAM1	0.2…1.6 bar	0.12 bar	5 bar	
SDBAM2,5	0.4…2.5 bar	0.15 bar	5 bar	1 + 15
SDBAM6	1.2…6 bar	0.4 bar	10 bar	
SDBAM625	1.2…6 bar	0.6 bar	20 bar	
SDBAM16	3…16 bar	0.8 bar	20 bar	1 + 19
SDBAM32	6…32 bar	3.0 bar	45 bar	

* If a downstream external interlock is added, DWAM... pressure monitors can also be used as pressure limiters (see page 24).

· Sealing device P2 is included for SDBAM limiters and can also be retrofitted to pressure monitors on request. See sealing P2.

· DWAM... also available in Ex-i equipment. See DBS series.

Minimum pressure controls
– Minimum pressure monitor: DWR… page 55
– Minimum pressure limiter: DWR…-206 page 56

CE TÜV tested DIN

Protection Class: IP 54

Safety engineered maximum pressure monitors

Technical data

Pressure connection
External thread G 1/2 (pressure gauge connection) according to DIN 16 288 and interval thread G 1/4 to ISO 228 Part 1.

Switch housing 500
Die cast aluminium GD Al Si 12. Aluminium housing coated with resistant plastic.

Mounting position
Vertically upright.

Protection class IP 65.

Ex protective category
Ex-i (only when used in conjunction with suitable isolating amplifier).

Component testing See table on page 52.

Pressure sensor materials
Housing: 1.4104
Pressure bellows: 1.4571
All parts fully welded.

Ambient temperature
DWAM: –20°C to +60°C, DWR: –25°C to +60°C. At ambient temperatures at or below 0°C, ensure that condensation cannot occur in the sensor or in the switching device.

Max. temperature of medium at sensor
+ 60°C.

Outdoor installations
Protect the device against direct atmospheric influences. Provide a protective cover.

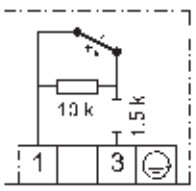
Max. working pressure
See Product Summary

Switching pressure setting
Adjustable with the setting spindle after removing the terminal box.

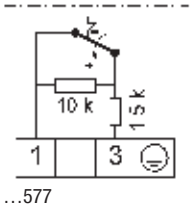
Mounting
With suitable weld on connections and union nuts or with pressure gauge screw union G 1/2.

Power supply circuit
U_i 14 V DC
R_i 1500 Ohm
C_i 1 nF
L_i 100 µH

Connection scheme



…576



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Maximum pressure monitors

Sensor "of special construction", self monitoring via safety diaphragm, type tested according to VdTÜV Memorandum "Pressure 100". **SIL2 according IEC 61508-2**

Type	Setting range	Switching differential (mean values)	Max. permissible pressure	Dimensioned drawing
				page 21 + 22
DWAM06-576	0.1…0.6 bar	0.04 bar	5 bar	
DWAM1-576	0.2…1.6 bar	0.05 bar	5 bar	
DWAM2,5-576	0.4…2.5 bar	0.07 bar	5 bar	3 +
DWAM6-576	1.2…6 bar	0.2 bar	10 bar	15
DWAM625-576	1.2…6 bar	0.25 bar	20 bar	
DWAM16-576	3…16 bar	0.4 bar	20 bar	3 +
DWAM32-576	6…32 bar	1.2 bar	45 bar	19

Versions:
ZF577: Maximum pressure limiter (with internal interlock)
Microswitch not positive opening, contacts: silver alloy other equimpent like DWAM…576.

Maximum pressure monitors

Sensor "of special construction" made from stainless steel. (Component testing with 2 million operating cycles).
Component tests: VdTÜV Memorandum "Pressure 100", DIN EN1854 (fuel gases), DIN EN764-7, systems in accordance to DIN EN12952-11 and DIN EN12953-9.
SIL 2 according ICE 61508-2

Type	Setting range	Switching differential (mean values)	Max. permissible pressure	Dimensioned drawing
				page 21 + 22
DWR06-576	0,1…0,6 bar	0.04 bar	6 bar	3 +
DWR1-576	0.2…1.6 bar	0.06 bar	6 bar	15
DWR3-576	0.2…2.5 bar	0.1 bar	16 bar	3 +
DWR6-576	0.5…6 bar	0.2 bar	16 bar	18
DWR625-576	0.5…6 bar	0.25 bar	25 bar	3 +
DWR16-576	3…16 bar	0.5 bar	25 bar	17
DWR25-576	4…25 bar	1.0 bar	63 bar	3 +
DWR40-576	8…40 bar	1.3 bar	63 bar	16

Versions:
ZF577: Maximum pressure limiter (with internal interlock)
Microswitch not positive opening, contacts: silver alloy other equimpent like DWR… 576

Calibration
Devices of the **DWR-576** and **DWAM-576** series are calibrated for rising pressure. This means that the adjustable switching pressure on the scale corresponds to the switching point at rising pressure. The reset point is lower by the amount of the switching differential. (See also page 23, 2. Calibration at upper switching point).

FEMA by Honeywell

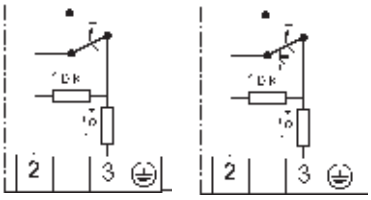
CE TÜV tested DIN DVGW Ex

Protection Class: IP 65

Safety engineered minimum pressure monitors
Sensor "of special construction" made of stainless steel. (self-monitoring and component testing with 2 million operating cycles). Component tests: VdTÜV Memorandum "Pressure 100", DIN EN3398 (fuel gases) DIN EN764-7, systems in accordance to DIN EN12952-11 and DIN EN12953-9
SIL2 according IEC 61508-2

Technical data
see page 28

Connection scheme



…574 …575

Type	Setting range	Switching differential (mean values)	Max. permissible pressure	Dimensioned drawing page 21 + 22
DWR06-574	0.1…0.6 bar	0.04 bar	6 bar	3 +
DWR1-574	0.2…1.6 bar	0.06 bar	6 bar	15
DWR3-574	0.2…2.5 bar	0.1 bar	16 bar	3 +
DWR6-574	0.5…6 bar	0.2 bar	16 bar	18
DWR625-574	0.5…6 bar	0.25 bar	25 bar	3 +
DWR16-574	3…16 bar	0.5 bar	25 bar	17
DWR25-574	4…25 bar	1.0 bar	63 bar	3 + 16

Calibration
The **DWR-574** series is calibrated for falling pressure. This means that the adjustable switching pressure on the scale corresponds to the switching point at falling pressure. The reset point is higher by the amount of the switching differential. (See also page 23, 1. Calibration at lower switching point).

Versions:
ZF575: Minimum pressure limiters (with internal interlock)
Switching contacts: silver alloy
other equipment like DWR… 574

Features of safety engineered pressure monitors and pressure limiters

Devices	Component testing	Features					Options	
	1 = VdTÜV Memorandum "Pressure 100" 2 = DIN EN1854 3 = DIN EN764-7 4 = DIN EN12952-11 / DIN EN12953-9 5 = ATEX / IEXEx	Resistor combination for line break and short circuit monitoring	Ex-i version for intrinsically safe control circuits	Self monitoring pressure sensor	Plastic coated housing Chemical version	Positive opening microswitches	Gold plated contacts	Limiter with internal interlock Chemical version
Maximum pressure monitoring								
FD16-326	1 + 3 + 5	■	■	■		■	■	
FD16-327	1 + 3 + 5	■	■	■				■
DWAM…576	1 + 4 + 5	■	■	■	■	■	■	
DWAM…577	1 + 4 + 5	■	■	■	■			■
DWR…576	1 + 2 + 3 + 4 + 5	■	■		■	■	■	
DWR…577	1 + 2 + 3 + 4 + 5	■	■		■			■
Minimum pressure monitoring								
DWR…574	1 + 2 + 3 + 4 + 5	■	■		■		■	
DWR…575	1 + 2 + 3 + 4 + 5	■	■		■			■

CE TÜV tested DIN DVGW Ex Protection Class: IP 65