SCHÖNN
Medizintechnik GmbH

ZONE WALL UNITS

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The SCHÖNN Zone Wall Unit (ZWU) is designed to provide a zone isolation, maintenance system and a physical break point. The ZWU provides additional facilities which enable connection of an emergency gas supply, purging and gas sampling. ZWU's are fitted to all medical gas / vacuum services in a prominent and accessible position at the entry to wards, intensive care units operating rooms etc. to the recommendations of HTM 2022, HTM 02-01, C11, EN 737 and ISO EN 7396-1:2007.

The unit has got 2,3,4 or 5 Area Valve Service Units and also an Alarm Panel for controlling medical gas services such as Oxygen, Nitrous Oxide, Carbon dioxide,Medical Air 4 Bar, Medical Air 7 Bar and Medical Vacuum.

The Unit includes copper stubs on the top for easy installation.

The Unit is painted with electrostatic powder paint. It has got an esthetic appearance precise manufacturing, high quality. It collects the valves and its pipes in a limited space. The Unit provides easy access to the valves and pressure switches.

- OXYGEN
- NITROUS OXIDE
- VACUUM
- SURGICAL AIR
- MEDICAL AIR
- CARBON DIOXIDE

SCHÖNN Medizintechnik GmbH
info@schoenn.de
www.schoenn.de

ZONE WALL UNITS

General Features

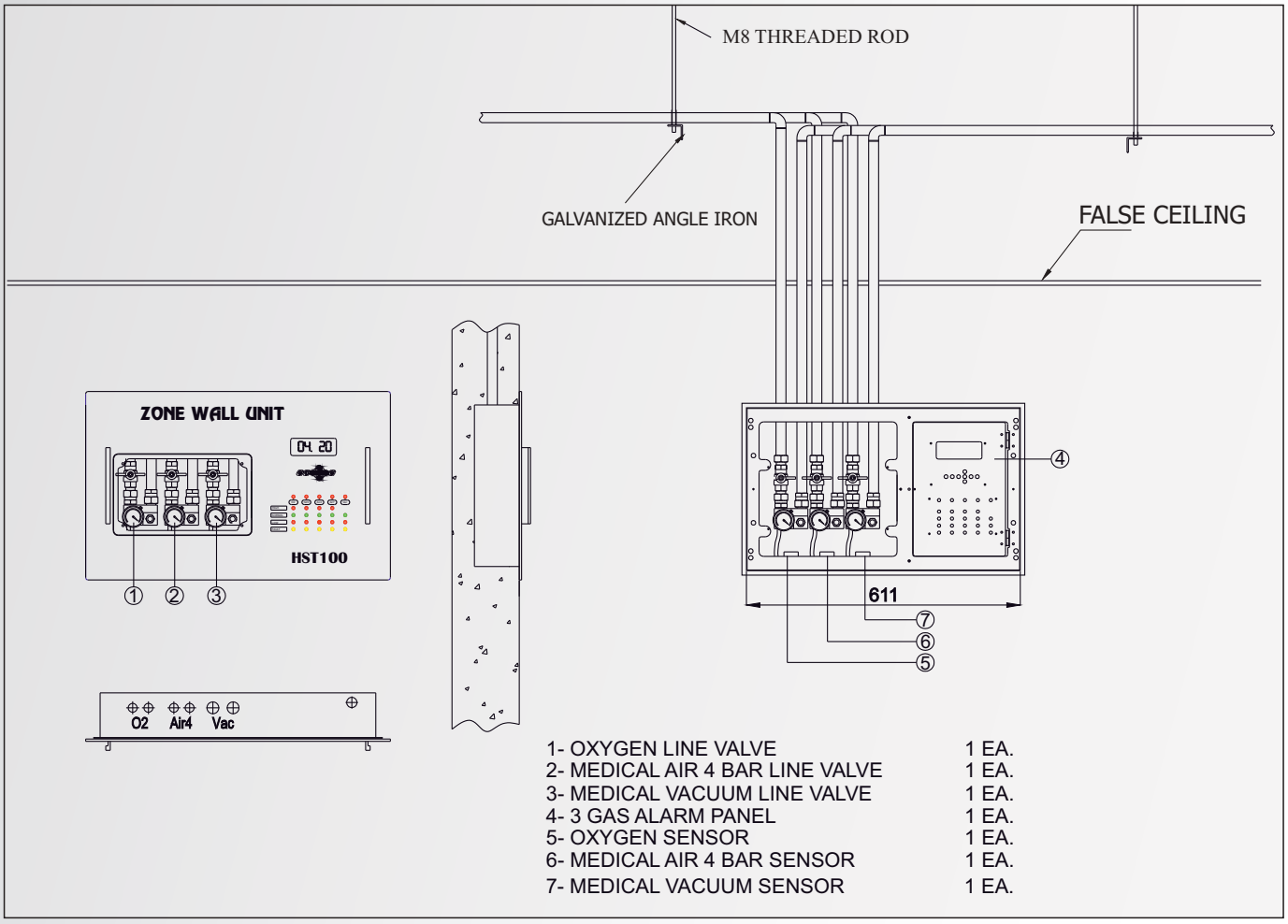
- Meets the requirements of C11, HTM 2022, HTM 02-01, EN 737 and ISO 7396-1:2007
- Steel construction giving greater fire retardency. High qualty epoxy powder coating in RAL or BS colour.
- Easy clean surface.
- Internal segregation of valves avoids inadvertent isolation of wrong zone or gas.
- Break glass panel for easy access to valves in emergency situations.
- Each block has the name of the gas passing inside on embossed and indelible.
- Incorporates high quality medical ball valves with detachable adapters.
- 100% leak tightness NIST connections each side of valve fitted as standard.
- Access to the system may be closed and fed with remote supply hose attached to NIST coonnector.
- Supplied pre-piped, pre-wired & tested for ease of installation.
- Unit incorporates local pressure switches and alarms.

- The system is PLC controlled and supports communication at RS-485 connection mode. Pressure and vacuum sensors are connected to the alarm panel according to the service.
- The alarm panel displays the values received from the sensors.
- In case the pressure values of the gas received trespass the predefined values (in memory), it will send an audio and visual warning ; the gas which has a risk priority will be displayed on the screen.
- The front screen section consists of button group, display, and led lights grouped according to gas groups.
- The information of alarm, current state, test and fault conditions can be visually followed with the help of buttons, display and led lights which is activated by the signals coming from the gases at the pipe lines.
- Any gas signal column is chosen via the button it signifies; the sets for the address, calibration, high and low pressure values can easily be seen and can be set as desired (can be entered in memory). Pressure and vacuum values are digitally displayed on LED display.
- The signals from the alarm panels can be traced by a computer, authorized by a Network Manager in a computer network system, by adding our software.

Zone Wall Unit Inside View

Pressure and Vacuum Sensor

3 Gases ZWU with Alarm Panel



1- OXYGEN LINE VALVE	1 EA.
2- MEDICAL AIR 4 BAR LINE VALVE	1 EA.
3- MEDICAL VACUUM LINE VALVE	1 EA.
4- 3 GAS ALARM PANEL	1 EA.
5- OXYGEN SENSOR	1 EA.
6- MEDICAL AIR 4 BAR SENSOR	1 EA.
7- MEDICAL VACUUM SENSOR	1 EA.

3 Gases ZWU with Alarm Panel

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MPX Pressure Sensor

Pressure

Integrated Silicon Pressure Sensor On-Chip Signal Conditioned, Temperature Compensated and Calibrated

The MPX5100 series piezoresistive transducer is a state-of-the-art monolithic silicon pressure sensor designed for a wide range of applications, but particularly those employing a microcontroller or microprocessor with A/D inputs. This patented, single element transducer combines advanced micromachining techniques, thin-film metallization, and bipolar processing to provide an accurate, high level analog output signal that is proportional to the applied pressure.

Features

- 2.5% Maximum Error over 0è to 85èC
- Ideally suited for Microprocessor or Microcontroller-Based Systems
- Patented Silicon Shear Stress Strain Gauge
- Available in Absolute, Differential and Gauge Configuration
- Durable Epoxy Unibody Element
- Easy-to-Use Chip Carrier Option

MPX5100
MPXV5100
Series

0 to 100 kPa (0 to 14.5 psi)
15 to 115 kPa (2.2 to 16.7 psi)
0.2 to 4.7 V Output

Typical Applications

- Patient Monitoring
- Process Control
- Pump/Motor Control
- Pressure Switching

PRESSURE (P1)/VACUUM (P2) SIDE IDENTIFICATION TABLE

Freescale designates the two sides of the pressure sensor as the Pressure (P1) side and the Vacuum (P2) side. The Pressure (P1) side is the side containing fluoro silicone gel which protects the die from harsh media. The MPX pressure sensor is designed to operate with positive differential pressure applied, P1 > P2.

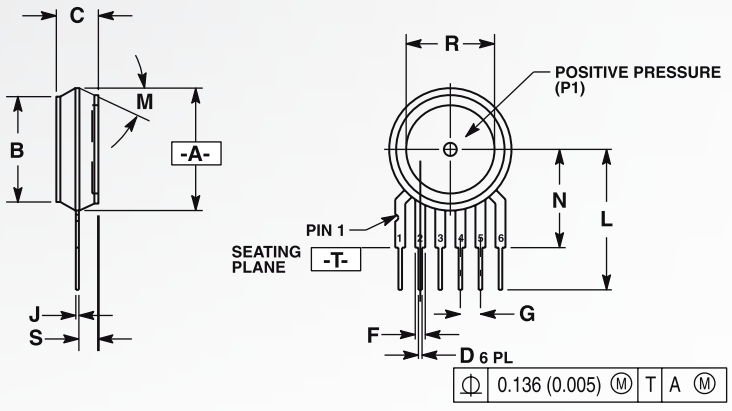
The Pressure (P1) side may be identified by using the table below.

Part Number	Case Type	Pressure (P1) Side Identifier
MPX5100A, MPX5100D	867	Stainless Steel Cap
MPX5100DP	867C	Side with Part Marking
MPX5100AP, MPX5100GP	867B	Side with Port Attached
MPXV5100GC6U	482A	Side with Port Attached
MPXV5100GC7U	482C	Side with Port Attached
MPXV5100DP	1351	Side with Part Marking
MPXV5100GP	1369	Side with Port Attached

SURFACE MOUNTING INFORMATION

Minimum Recommended Footprint for Surface Mounted Applications

Surface mount board layout is a critical portion of the total design. The footprint for the surface mount packages must be the correct size to ensure proper solder connection interface between the board and the package. With the correct footprint, the packages will self align when subjected to a solder reflow process. It is always recommended to design boards with a solder mask layer to avoid bridging and shorting between solder



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION -A- IS INCLUSIVE OF THE MOLD STOP RING. MOLD STOP RING NOT TO EXCEED 16.00 (0.630).

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.595	0.630	15.11	16.00
B	0.514	0.534	13.06	13.56
C	0.200	0.220	5.08	5.59
D	0.027	0.033	0.68	0.84
F	0.048	0.064	1.22	1.63
G	0.100 BSC		2.54 BSC	
J	0.014	0.016	0.36	0.40
L	0.695	0.725	17.65	18.42
M	30 NOM		30 NOM	
N	0.475	0.495	12.07	12.57
R	0.430	0.450	10.92	11.43
S	0.090	0.105	2.29	2.66

STYLE 1:
PIN 1. VOUT
2. GROUND
3. VCC
4. V1
5. V2
6. VEX

STYLE 2:
PIN 1. OPEN
2. GROUND
3. -VOUT
4. VSUPPLY
5. +VOUT
6. OPEN

STYLE 3:
PIN 1. OPEN
2. GROUND
3. +VOUT
4. +VSUPPLY
5. -VOUT
6. OPEN

TECHNICAL DATA

TECHNICAL DATA

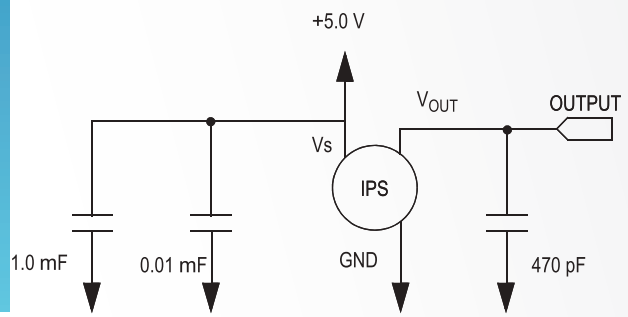
Operating Characteristics

Table 1. Operating Characteristics (V_S = 5.0 Vdc, T_A = 25°C unless otherwise noted, P1 > P2. Decoupling circuit shown in required to meet electrical specifications.)

Characteristic	Symbol	Min	Typ	Max	Unit
Pressure Range[1] Gauge, Differential: MPX5100D/MPX5100G/MPXV5100G Absolute: MPX5100A	P_{OP}	 0 15	 — —	 100 115	kPa
Supply Voltage[2]	V_S	4.75	5.0	5.25	V_{DC}
Supply Current	I_O	—	7.0	10	mAdc
Minimum Pressure Offset[3] (0 to 85°C) @ V_S = 5.0 V	V_{OFF}	0.088	0.20	0.313	V_{DC}
Full Scale Output[4] Differential and Absolute (0 to 85°C) @ V_S = 5.0 V	V_{FSO}	4.587	4.700	4.813	V_{DC}
Full Scale Span[5] Differential and Absolute (0 to 85°C) @ V_S = 5.0 V	V_{FSS}	—	4.500	—	V_{DC}
Accuracy[6]	—	—	—	±2.5	$\%V_{FSS}$
Sensitivity	V/P	—	45	—	mV/kPa
Response Time[7]	t_R	—	1.0	—	ms
Output Source Current at Full Scale Output	I_{O+}	—	0.1	—	mAdc
Warm-Up Time[8]	—	—	20	—	ms
Offset Stability[9]	—	—	±0.5	—	$\%V_{FSS}$

1. 1.0 kPa (kiloPascal) equals 0.145 psi.
2. Device is ratiometric within this specified excitation range.
3. Offset (V_{OFF}) is defined as the output voltage at the minimum rated pressure.
4. Full Scale Output (V_{FSO}) is defined as the output voltage at the maximum or full rated pressure.
5. Full Scale Span (V_{FSS}) is defined as the algebraic difference between the output voltage at full rated pressure and the output voltage at the minimum rated pressure.
6. Accuracy (error budget) consists of the following:
   - Linearity: Output deviation from a straight line relationship with pressure over the specified pressure range.
   - Temperature Hysteresis: Output deviation at any temperature within the operating temperature range, after the temperature is cycled to and from the minimum or maximum operating temperature points, with zero differential pressure applied.
   - Pressure Hysteresis: Output deviation at any pressure within the specified range, when this pressure is cycled to and from minimum or maximum rated pressure at 25°C.
   - TcSpan: Output deviation over the temperature range of 0° to 85°C, relative to 25°C.
   - TcOffset: Output deviation with minimum pressure applied over the temperature range of 0° to 85°C, relative to 25°C.
   - Variation from Nominal: The variation from nominal values, for Offset or Full Scale Span, as a percent of V_{FSS} at 25°C.
7. Response Time is defined as the time for the incremental changed in the output to go from 10% to 90% of its final value when subjected to a specified step change in pressure.
8. Warm-Up Time is defined as the time required for the product to meet the specified output voltage after the Pressure has been stabilized.
9. Offset Stability is the product's output deviation when subjected to 1000 hours of Pulsed Pressure, Temperature Cycling with Bias Test.

Shows the recommended decoupling circuit for interfacing the output of the integrated sensor to the A/D input of a microprocessor or microcontroller. Proper decoupling of the power supply is recommended.



Recommended Power Supply Decoupling and Output Filtering
(For additional output filtering, please refer to Application Note AN1646.)

Office

Helena Rubinstein Str. No: 4-G 40699 Erkrath/Düsseldorf

+49 (0) 211 5203 9751 +49 (0) 211 5203 9753

Factory

Herforder Strasse 46, 32602 Vlotho/Germany

+49 (0) 5733 963 0440 +49 (0) 5733 963 0442

info@schoenn.de www.schoenn.de