

Differential Pressure and Level Pneumatic Transmitters Series 5500 - 8500

Series 5500 and 8500 transmitters are blind instruments working on force balance principle and designed for directly measuring differential pressures or levels and converting them into a linear 3 to 15 psi or 0.2 to 1 bar pneumatic signal.

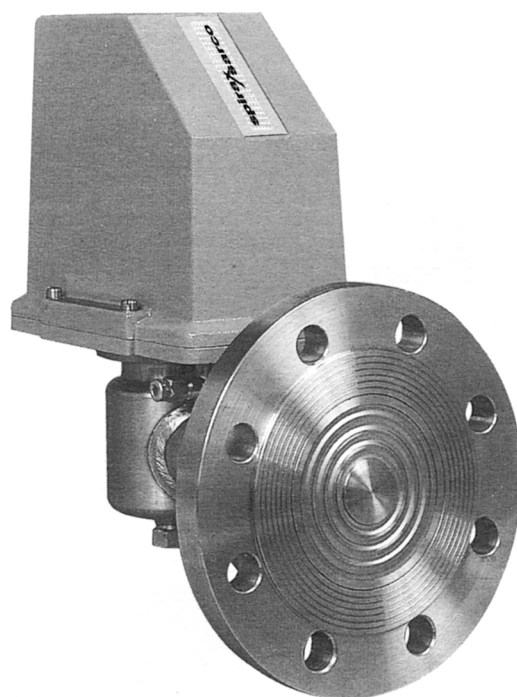
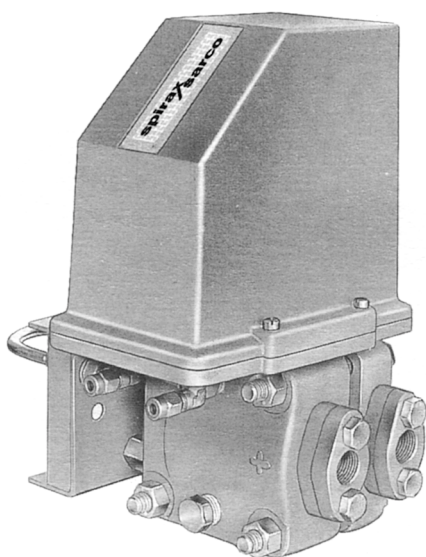
A high capacity, built-in amplifying relay allows signal transmission, even over considerable distance, with minimum air consumption.

The transmitted signal is directly and strictly proportional to the measured value with remarkable accuracy, repeatability and sensitivity due

to the characteristic force-balance principle, without any moving part and, consequently, no friction nor hysteresis and thanks to the feedback device of the transmitting unit.

Series 5500 transmitters are mostly used to transmit **instantaneous flow rate** values of a fluid measured according to the differential pressure across orifice plates or Venturi tubes in process pipe network.

They are also used for **level measurement** when it is impossible to install **series 8500** transmitters directly on the tank.



On request series 5500 can be equipped with oil filled **diaphragm separators** with capillary tube. This execution is suggested for measures where corrosive fluids or liquids with suspended matter are involved; particularly advisable for food applications.

Series 8500 transmitters are used for level measurement on open or pressurized tanks. The operating principle is similar to 5500 series one: it is based on the differential pressure measurement proportional to the liquid head.

Series 8500 transmitters are provided with a mounting flange for direct installation on the tank and the capsule measuring element can be of extended type suitable for installation with thick-walled or insulated vessels.

Both the types are fitted with AISI 316 stainless steel double diaphragm differential capsule silicone oil filled and provided with a safety device, allowing overpressure on one side up to the maximum nominal static pressure.

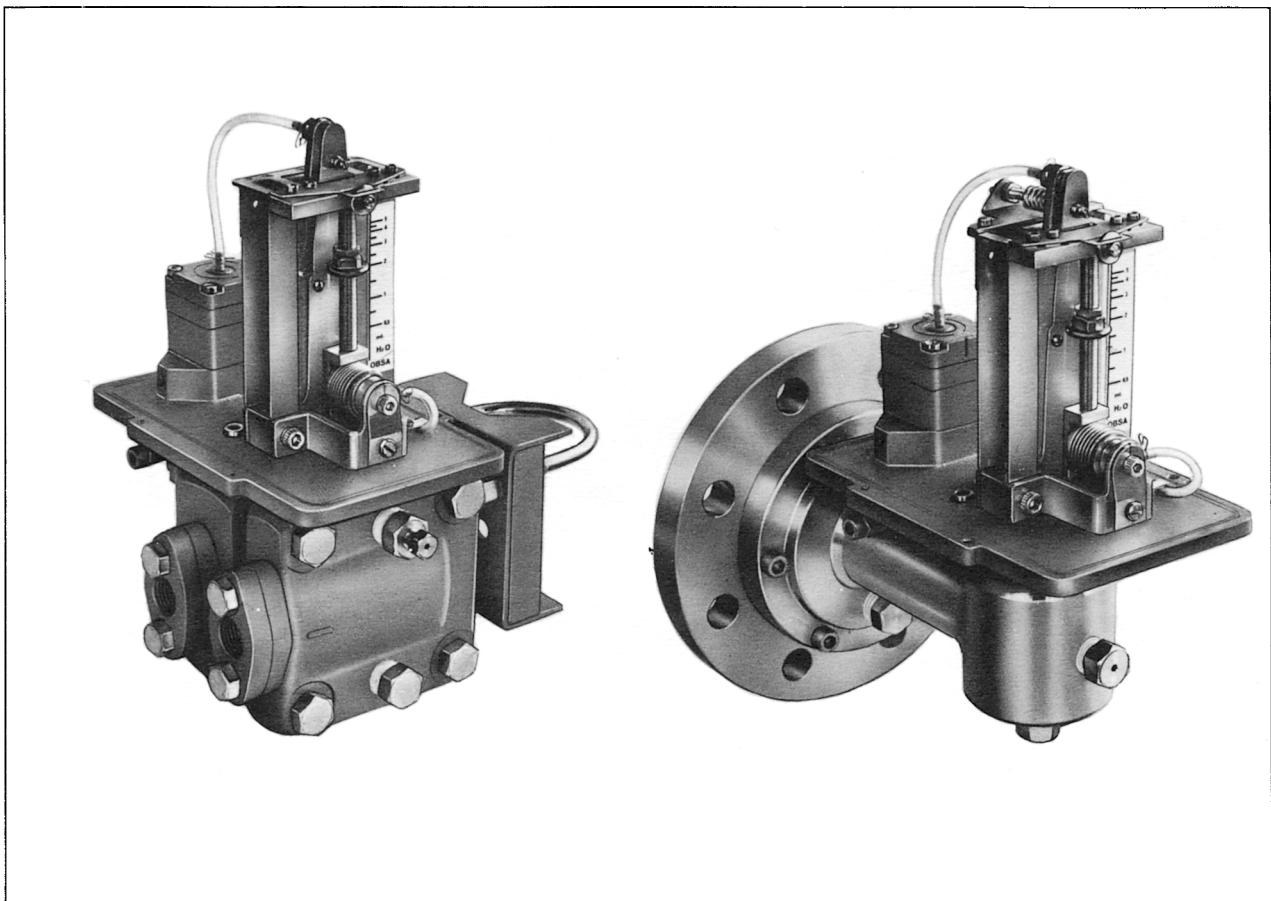
Body transmitter and other parts in contact with process fluid may be of chromium steel (13%Cr) or AISI 316 stainless steel.

The actual measuring range is continuously adjustable, also during operation, within the limits below listed. When used for level measurement, instruments may be fitted with a range suppression and elevation device that allows the installation of the instrument at a different height from the reference level or gives the possibility of suppressing the undesired effect of liquid heads.

Series 5500 and 8500 transmitters are available in four different versions:

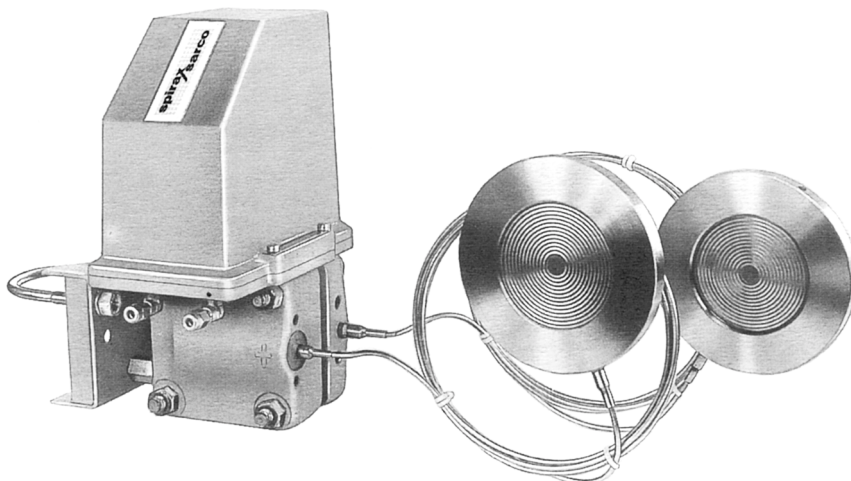
Type	Adjustable differential pressure range	
5550/8550	Between 0 to 100 and	0 to 1000 mm W.G.
5555/8555	Between 0 to 500 and	0 to 5000 mm W.G.
5559/8559	Between 0 to 2000 and	0 to 10000 mm W.G.
5559 HM/8559 HM	Between 0 to 4000 and	0 to 20000 mm W.G.
5559 HHM	Over 20000 and	up to 50000 mm W.G.

The instrument has an **aluminium alloy case** that is dust and spray proof with protective degree IP 45 as per standard IEC for standard execution or IP 55 on request. Series 5500 is supplied with accessories for 2" pipe support mounting.



GENERAL SPECIFICATIONS

CONSTRUCTION MATERIALS		SERIES 5500 AND SERIES 8500		
Pressure capsule	AISI 316 stainless steel			
Capsule filling fluid	silicone oil			
Body	chromium steel, 13% Cr (suffix CS) or AISI 316 stainless steel (suffix SS)			
Case	die cast aluminium with olive grey enamel finish, spray and dust proof style with standard protection degree IP 45 or IP 55 on request; connection for internal pressurization (optional)			
CHARACTERISTICS		SERIES 5500	SERIES 8500	
Type of instrument	differential pressure transmitter		level transmitter	
Maximum working pressure	Model 5550	25 bar	Model 8550	25 bar
	5555	} 100 bar	8555	} 40 bar
	5559		8559	
	5559 HM		8559 HM	
	5559 HHM			
Process temperature limits	max. 120°C - min. —15°C			
Accuracy	±0.5% or range span			
Repeability	0.3% of range span			
Sensitivity	±0.1% of range span			
Linearity	±0.5% of range span			
Temperature effect	less than 1% per 50°C variation			
Static pressure effect	less than 1% per 70 bar variation			
Mode of transmission	proportional action: output signal increases on increasing measured pressure			
Output signal	3 to 15 psi or 0.2 to 1 bar			
Air supply	compressed air at 20 psig ±1.5 psi (1.4 bar ±0.1 bar)			
Air consumption	0.2 Nm³/h (average)			
Air connections	1/4" NPT female for air supply and output signal			
Process connections	1/2" NPT female (two)		1/2" NPT female (one)	
Process mounting flange			8550	DN150 UNI PN16 (optional: PN25 and 6" ANSI 150 RF)
			8555	} DN 80 UNI PN16 (optional: PN40 and 3" ANSI 300 RF)
			8559	
			8559 HM	
Vent and drain plug	3/8" NPT			
Mounting	on 2" pipe support with clamp		directly coupled on the tank with flange	
Ambient temperature limits	maximum +65°C		minimum —15°C	
Weight	see the next page			
Overall dimensions	see drawings.on the next page			
Accessories and features on request	range suppression and elevation device: maximum head that can be suppressed 50% of maximum range span on the + side and 100% on the — side			
	Diaphragm separators with capillary tube for corrosive process fluid and food applications			
			Extended type measuring capsule: process connecting flange DN 150 for all the ranges (special flanges on request). Teflon protection for the process side of the measuring capsule.	



DATA REQUIRED FOR OFFERS AND WHEN ORDERING

Example N. 1

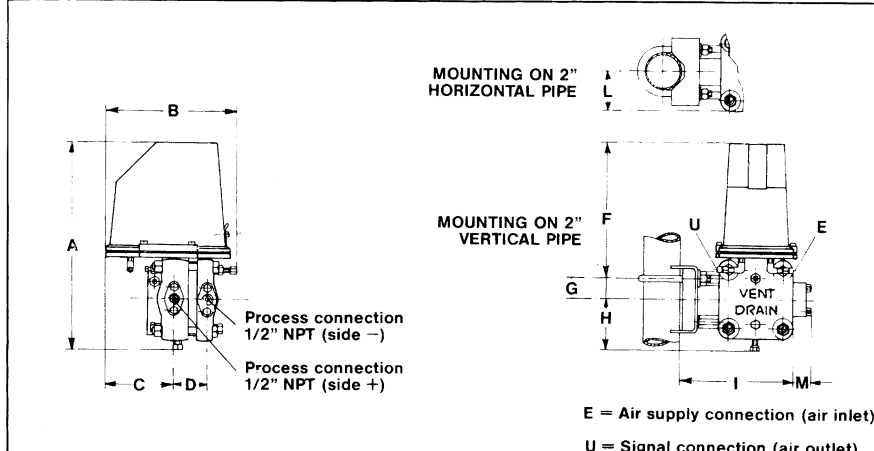
Example N. 2

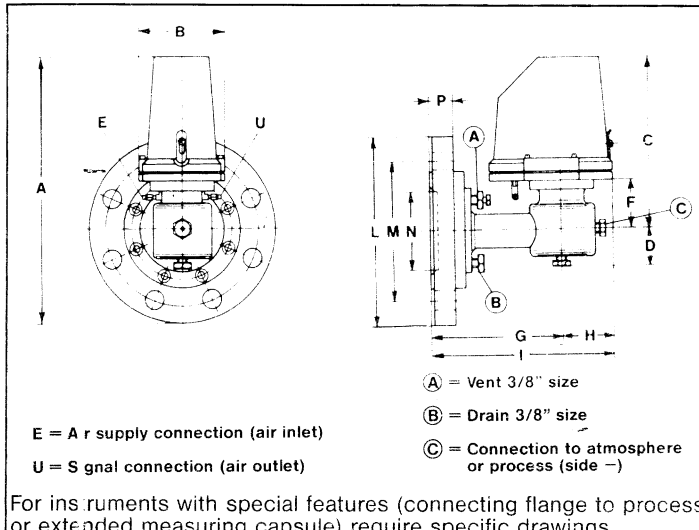
Type of instrument	Differential pressure transmitter	Level transmitter with process flanged connection
Range	0 to 500 / 0 to 5000 mm W.G.	0 to 100 / 0 to 1000 mm W.G.
Range - setting	2500 mm W.G.	600 mm W.G.
Range suppression and elevation device	not required	required: setting at 400 mm W.G. on the + side
Fluid	saturated steam	demineralized water
Specific gravity		1 kg/dm ³
Working temperature		80°C
Working pressure	8 bar	1 bar
Material in contact with fluid	steel	stainless steel
Connecting flange to process		DN 150 UNI PN 16
Extended measuring capsule (if required)		not required

Other data, as viscosity and corrosivity, etc., must be supplied to permit right choice of instrument characteristics. In the flow rate metering applications, the following data are also required to size the measuring orifice plate or Venturi tube:

- pipe nominal diameter and, very important when ordering, actual internal diameter in millimeters and tenths of millimeter
- type and characteristics of mounting flanges for orifice plate
- allowable pressure drop across Venturi tube or orifice plate.

DIMENSIONS (mm) AND WEIGHTS

	TYPE	5550	5555-5559 5559 HM/HM
	A	346	307
	B	210	200
	C	110	104
	D	54	54
	F	226	207
	G	27	27
	H	120	100
	I	210	170
	L	77	58
	M	30	30
	Weight	18.5 kg	12.5 kg

	TYPE	8550 DN 150 PN 16	8555-8559 DN 80 PN 16	8559 HM DN 80 PN 16
	A	395,5	334	334
	B	128,5	128,5	128,5
	C	253	234	234
	D	50	50	50
	F	78	59	59
	G	183	176,5	176,5
	H	80,5	80,5	80,5
	I	263,5	257	257
	L	285	200	200
	M	240	160	160
	N	119	83	61
	P	24	22	22
	Weight	21 kg	12 kg	12 kg