



examples

#### Caratter. costrutt.

- campi di misura da 0...160 mbar a 0...400 bar
- linearità, errore compreso isteresi <+ 0.2 % f.s.
- sistema di misura piezoresistivo, tenuta al vuoto e protezione ai sovraccarichi
- possibili vari tipi di connessione e di custodie
- membrana in acciaio inox o materiali speciali
- segnale di uscita 4...20 mA, opzione 0...20 mA
- elettronica completamente incapsulata
- cassa in acciaio inox, protezione tipo IP 65, opzione IP 67
- temperatura di processo sino a 200 °C
- protezione Ex, II2G EEx ib IIC T6 secondo ATEX

#### Applicazioni

The COMPACT pressure transmitter acts as a highly accurate converter of pressure measurements to load-independent current signals (4-20 mA, for example). The type series CC6000-C has been developed to meet the stringent demands of chemical/petrochemical industry. Because of various variants of process connections and materials these transmitters are especially suited for pressure measurement with aggressive, highly viscous, solidifying or crystallizing media.

The completely welded stainless steel case (also available with plug or cable output) can be designed up to protection type IP 67, thus allowing easy and thorough cleaning. The use of temperature decouplers means that the COMPACT pressure transmitter can be used for process temperatures up to 200 °C.

#### Disegno e Funzion.

The process pressure acts on a piezoresistive semiconductor measuring bridge via a separating diaphragm seal by means of a transmission fluid. The transmitter converts the pressure measurements to a load-independent current signal. A compensating network almost completely eliminates the effects of ambient temperature on the output signal. The influence of the process temperature on the output signal is greatly reduced in comparison with a conventional screwing by a specially adapted diaphragm seal connection with minimized system volume. The electronics is encapsulated for protection against moisture and vibrations. The pressure transmitter can be supplied with a non-stabilized DC voltage of 6...30 V. Standard metrology output signals are provided.

#### Dati tecnici

##### Cassa, disegno

Designs

- field housing IP 65 or IP 67, with cable gland
- right-angle plug DIN 43650, IP 65,
- cable connection, IP 67
- locking plug M12, IP 65

case material

- stainless steel material no. 1.4404/14305
- union nut: polyamide (with plug connector or cable connection for electr. connection)
- electronics encapsulated with silicone.
- Inner chamber aeration for measuring ranges < 16 bar, over case thread or connection cable depending on design

##### Connessione di processo

see page 3 and order code for variants  
 material-Nr.: 1.4404 for the sleeves

##### Campi di temperatura

ambient temperature: -10 to +70 °C  
 storage temperature \*: -10 to +90 °C  
 process temperature: depending on design  
 \* minus value depends on system filling

##### Campi di misura/limiti di sovraccarico

see order details  
 intermediate measuring ranges upon request

##### Tempo di risposta

< 20 ms

##### Precisione di misura

linearity error incl. hysteresis: <+ 0.2 % f.s.  
 (<+ 0.3 % f.s. for measuring ranges ≥ 0...60 bar)

fixed-point adjustment

accuracy of adjustment: <± 0.2 % f.s.

temperature effect:

a) case

- zero point < 0.2 %/10 K f.s.
- span < 0.2 %/10 K f.s.

b) process connection (diaphragm seal)

depending on design

diaphragm	seal zero error
flat diaphragm	
DN 25/1"	4.8 mbar/10 K
DN 32/1 1/2"	2.3 mbar/10 K
DN 40	1.6 mbar/10 K
DN 50/2"	0.6 mbar/10 K
inline diaphragm	
DN 25/1"	9.5 mbar/10 K
DN 32/1 1/2"	4.1 mbar/10 K
DN 40	3.9 mbar/10 K
DN 50/2"	3.9 mbar/10 K

The specified zero error for the process connection is a guide value for a standard design. We can provide a detailed system calculation upon request. Systems with reduced diaphragm seal errors are also available.

##### Alimentazione esterna

Standard design:

- nominal voltage 24 V DC
- function range 6...30 V DC
- max. allowable voltage 30 V DC

##### Influenza tensione di alimentazione

< 0.01 % f.s./V

##### Segnale di uscita

4...20 mA, 2-wire circuitry or  
 0...20 mA, 3-wire circuitry

##### Limitazione corrente segnale di uscita

max. output current approx. 30 mA

##### Aggiustamento campo

approx. ± 5 % f.s.  
 zero point and measuring span separately adjustable

##### Carico

2-fili, circuito  
 versione standard  $R_a = \frac{U_B - 6 V}{20 mA}$  (KOhm)  
 $U_B$  = tensione di lavoro  
 $R_a$  = max. carico resistivo permesso  
 (incl. alimen.)

##### Influenza del carico

for 500 ohm burden change: < 0.1 % f.s.

continua a pag.2

## Dati tecnici (continua)

### Pesi (without diaphragm seal)

- field housing: approx. 460 g
- case with plug connector: approx. 200 g

### Posizione di installazione

any, standard: vertical

### EMC test

- noise immunity according to EN 50082 section 2, version March 1995 issue for industry
- emitted interference according to EN 50081 section 1, 1993 issue for residential and industrial areas

Device emits no radiation of its own

### Approvazioni Ex

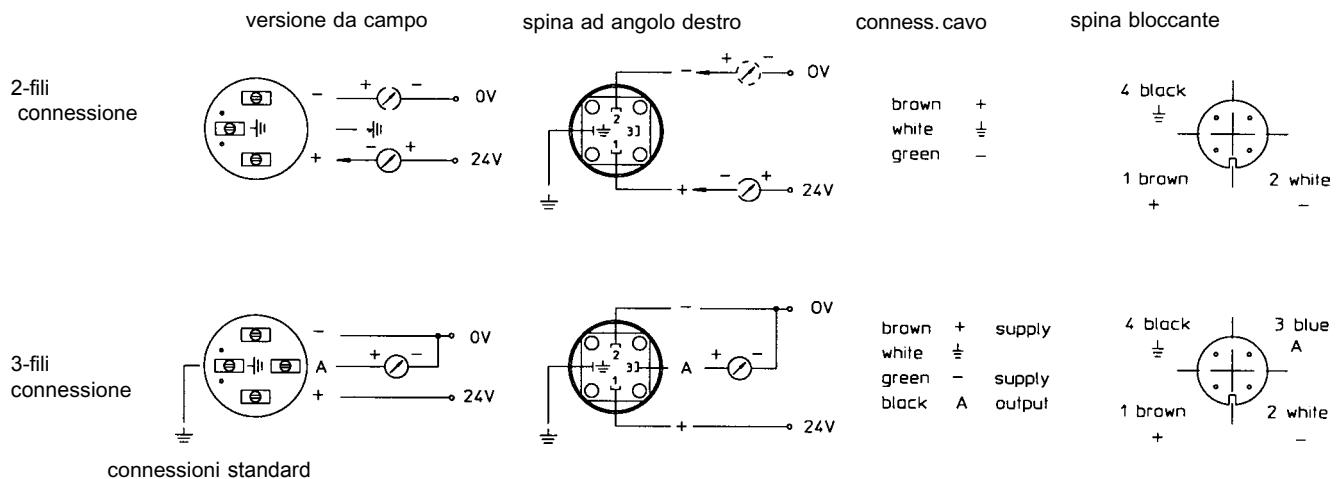
CENELEC approval according to ATEX explosion protection intrinsically safe Government Testing Laboratories (TÜV) 00 ATEX 1557 X

**Ex** II2G EEx ib IIC T6

- $U_{max} < 30$  V DC
- $I_{max} < 150$  mA
- $P_{max} < 1$  W
- $C_i < 49$  nF
- $L_i < 33$   $\mu$ H

Information on other models upon request or see order details

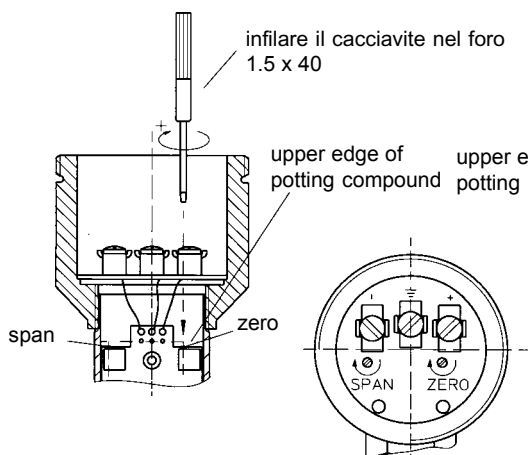
## Connessioni elettr.



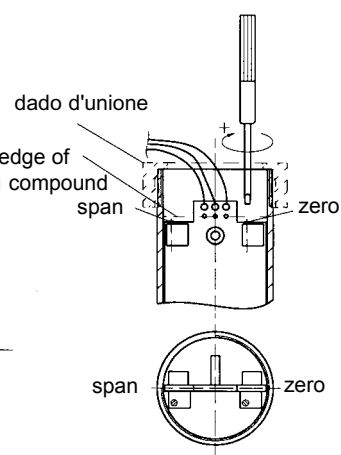
## Correzione di zero

In the case of the field housing version, the potentiometers are encapsulated and can be accessed through the clamping plate. In the case of plug versions and the cable-connection version, unscrew the union nut and remove the plug insert by carefully lifting it out. The internally-fitted zero and span potentiometers can be accessed from above through the potting. Trim them using a screwdriver (1.5 x 40) (10 turns =  $\pm 5$  % of measuring range). Span adjustment is only allowed for reference pressure.

### Versione da campo

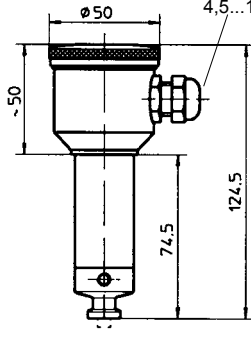


### versione, spina/cavo

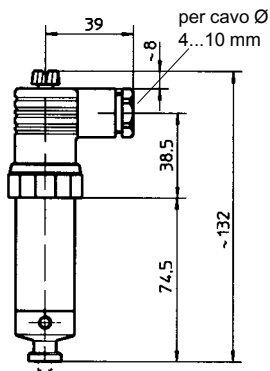


**Dimensioni/cassa/conness. di proces.**

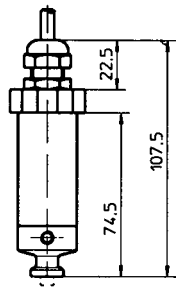
versione da campo  
materiale acciaio inox  
protezione tipo IP 65  
alternativamente IP 67  
per cavo Ø  
4,5...10 mm



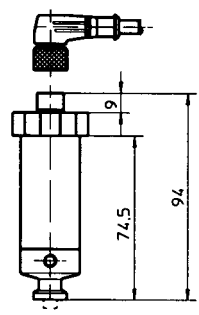
rspina ad angolo destro  
secondo DIN 43650  
protezione tipo IP 65



connessione cavo  
protezione tipo IP 67  
(cavo ventilato)



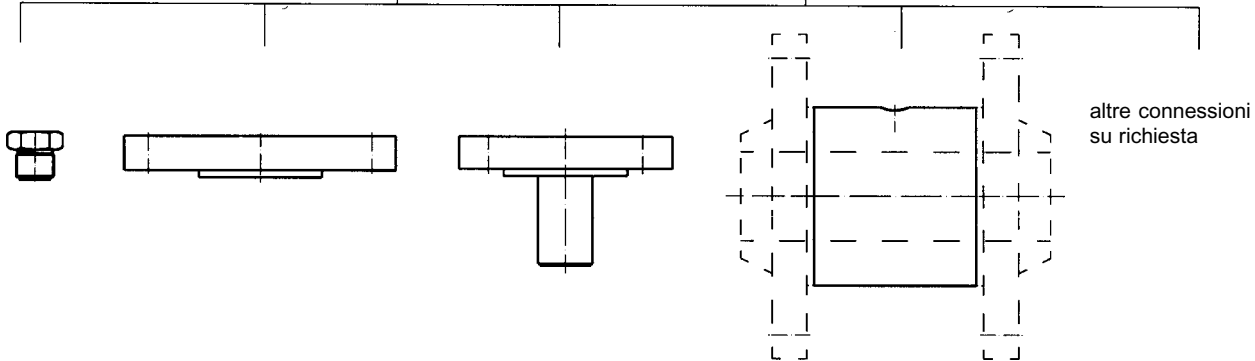
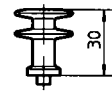
spina bloccante M12  
protezione tipo IP 65



diretto  
per temperature di processo  
sino a 140 °C  
(tipo CC6010)

disaccoppiatore di temperatura  
per temperature di processo  
sino a 200 °C  
(tipo CC6020)

**connessioni di processo**  
per dettagli vedere dettagli d'ordine  
ed i relativi fogli tecnici  
Altri modelli su richiesta



altre connessioni  
su richiesta

filettato  
con membrana  
affacciata, montata  
G1/2...G2A  
foglio tecnico D5-027

connessione a flangia  
per DIN o ANSI  
con membrana  
affacciata, montata  
DN25...DN125  
DN1"....DN3"  
foglio tecnico D5-030

connessione a flangia  
per DIN o ANSI  
con membrana  
sporgente  
DN25...DN125  
DN1"....DN3"  
foglio tecnico D5-031

connessione a flangia in linea  
per DIN o ANSI  
DN25...DN150  
DN1"....DN6"  
foglio tecnico D5-039

### **Trasmittitori**

The transmitters are trimmed at the factory to suit the specified measuring range and are adjusted as standard for vertical installation. The transmitters do not normally require any subsequent adjusting.

If the mounting orientation is altered at a later date the zero point must be corrected for low pressure measuring ranges  $\leq 1.6$  bar. The span (sensitivity) is not affected by the zero-point correction. Electrical installation, commissioning and zero-point correction should only be carried out by competent personnel in accordance with the data sheet (see zero-point correction).

The atmospheric inner pressure for pressure transmitters is compensated for excess pressure ranges in plug versions through the plug screwing (IP 65), and with field housings through an integrated sintered filter (IP 65) or an aerated connection cable (IP 67), and for the version with cable output with an aerated connection cable (IP 67). Absolute pressure ranges do not require any pressure compensation to atmosphere. The above protection types are only achieved when the transmitter is properly installed, the plug connections firmly tightened, and the cable cross-sections correspond with the nominal sizes of the sealing inserts in the case. The integrated EMC measures are only effective when the earth connection is properly made.

**The CE designation** for the devices certifies compliance with European Council guidelines (9/336/EWG), EMC legislation (13/11/1992), current generic standards, and product and basic standards. Clear operation in systems and plants is achieved when the conditions for screening, earthing, wiring and potential isolation are fulfilled during installation and mounting.

### **Electrical equipment in hazardous areas should only be installed and commissioned by competent personnel.**

Modifications to devices and connections destroy the ex-proofing and the guarantee. The complete cable run, both inside and outside the hazardous areas in intrinsically safe circuits, should be equipotentially bonded. The limit values detailed in the ATEX approval are to be observed.

### **Membrane di tenuta**

Process mounting and commissioning should only be carried out by competent personnel. The supplied protective cap in front of the diaphragm-seal foil or plastic cover should only be removed just before mounting, to avoid soiling and damage. In the case of models with temperature decouplers care should be taken that these are not insulated as well.

Note: The standard nominal pressure rating should be observed for all process connections. Operation outside the allowed nominal pressure rating, especially with clamp connections, is only possible with suitable clamps. In this case, note DIN 32676 for stipulations on heat resistance.

**Dettagli d'ordii** prego dare specifiche aggiuntive per modelli non citati

Compact pressure transmitter for chemical/petrochemical, type series CC6000-C										
design	· for process temperature to + 140 °C (standard) · for process temperature to + 200 °C							CC601 . CC602 .		
Ex protection	· without · II2G EEx ib IIC T6							0 1		
meas. range	meas. range	overload limit (bar)								
	0...160 mbar	2							A1009	
	0...250 mbar	2							A1010	
	0...400 mbar	6							A1011	
	0...0,6 bar	6							A1052	
	0...1 bar	10							A1053	
	0...1,6 bar	10							A1054	
	0...2,5 bar	16							A1055	
	0...4 bar	16							A1056	
	0...6 bar	30							A1057	
	0...10 bar	30							A1058	
	0...16 bar	50							A1059	
	0...25 bar	50							A1060	
	0...40 bar	70							A1061	
	0...60 bar	70							A1062	
	0...100 bar	200							A1063	
	0...160 bar	200							A1064	
	0...250 bar	500							A1065	
	0...400 bar	500							A1066	
	-160...0 mbar	2							A1026	
	-250...0 mbar	2							A1027	
	-400...0 mbar	6							A1028	
	-0,6...0 bar	6							A1085	
	-1...0 bar	10							A1086	
	-1...0,6 bar	10							A1087	
	-1...1,5 bar	16							A1088	
	-1...3 bar	16							A1089	
	-1...5 bar	30							A1090	
	-1...9 bar	30							A1091	
	-1...15 bar	50							A1092	
	0...1 bar abs	10							B1053	
	0...1,6 bar abs	10							B1054	
	0...2,5 bar abs	16							B1055	
0...4 bar abs	16							B1056		
0...6 bar abs	30							B1057		
0...10 bar abs	30							B1058		
measuring range as in writing									A9999	
output signal	· 4...20 mA, 2-wire (standard)									H1
	· 0...20 mA, 3-wire									H2
case/ electrical connections	· field housing of stainless steel			IP 65, with cable gland					T410	
				IP 67, with cable gland					T420	
	· right angle plug according to DIN 43650, IP 65								T110	
	cable connection IP 67	· 2 m cable length							T310	
		· 5 m cable length							T311	
		· 10 m cable length							T312	
		· cable length as in writing						T319		
locking plug M12, IP 65	· with plug insert M12 (without angle connection)							T120		
	· including angle connection with 2 m cable							T121		
	· including angle connection with 5 m cable							T122		
	· including angle connection with 10 m cable							T123		
		· incl. angle connection, cable length as in writing						T129		
process connection	screw-in thread	· G 1/2 A							DE1180	
		· G 3/4 A							DE1280	
		· G 1 A							DE1380	
		· G 1 1/2 A							DE1580	
		· G 2 A							DE1680	
	flange	raised face form C/D							DA1 ...	
		raised face form E, in case of special diaphragm material							DA2 ...	
		DIN	· DN 25, PN 10/40							... 120
			· DN 25, PN 64/100							... 150
			· DN 50, PN 10/40							... 420
· DN 50, PN 64								... 430		
· DN 80, PN 10/40								... 620		
· DN 100, PN 10/16								... 710		
· DN 100, PN 25/40								... 720		
· DN 125, PN 10/16								... 810		
· DN 125, PN 25/40								... 820		
· further DN/PN upon request										
raised face ANSI B16.5 RF500 RMS							DA51 ...			
raised face ANSI B16.5 RFSF, in case of special diaphragm material							DA5 ...			
ANSI	· DN 1", PN 150 psi							110		
	· DN 1", PN 300 psi							120		
	· DN 2", PN 150 psi							310		
	· DN 2", PN 300 psi							320		
	· DN 3", PN 150 psi							510		
	· DN 3", PN 300 psi							520		
		· further DN/PN upon request								

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