



# INSTRUMENTS SPECIFICATION SPECIFICA STRUMENTI

Customer - Cliente :  
Plant - Impianto : **SULPHUREX**  
Job - Commessa : **1E35**

Specification N° : **1E35-80-041**  
Specifica N°  
Sheet : **1** of **13**  
Foglio  
Rev. : **2**

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## DIFFERENTIAL PRESSURE TRANSMITTERS

*Trasmettitori di pressione differenziali*

**Desmet Ballestra Supply**

### REVISIONS INDEX - INDICE DELLE REVISIONI

SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
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REV	Issue Description Descrizione	Author Autore	Date Data
2	Issue for order LT 16.1 & LT 16.4	A. Emonte	12/03/2010
1	Issue for order sh. 3-4-5 (n°291509) / sh. 6÷13 (n°291444)	A. Emonte	21/12/2009
0	Issue for bid sh. 3-4-5	A. Emonte	06/11/2009

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## INSTRUMENT SPECIFICATION SPECIFICA STRUMENTI

Specification N° : **1E35-80-041**

Specifica N°

Customer - Cliente :

Sheet : **2** ofPlant - Impianto : **SULPHUREX**

Foglio

Job - Commessa : **1E35**Rev. : **0**

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### NOTE GENERALI E INFORMAZIONI / GENERAL REQUIREMENTS AND INFORMATION

#### 1. CONDIZIONI AMBIENTALI / ENVIROMENTAL CONDITIONS

Massima temperatura aria ambiente	/	Maximum ambient air temperature	:	<b>+40° C</b>
Minima temperatura aria ambiente	/	Minimum ambient air temperature	:	<b>+25° C</b>
Temperatura a bulbo umido	/	Design Wet bulb temperature	:	<b>+30° C</b>
Altitudine	/	Altitude not exceeding	:	<b>0-10 meter ASL</b>
Massima umidità relativa	/	Maximum Relative Humidity	:	<b>85 %</b>

#### 2. TROPICALIZZAZIONE / TROPICALIZATION

Per tutti gli strumenti è richiesta la tropicalizzazione  
*Is required tropicalization for all instruments*

#### 3. NORME E SPECIFICHE DI RIFERIMENTO / REFERENCE RULES AND SPECIFICATIONS

- Gli strumenti descritti in questa specifica dovranno essere in accordo alle seguenti normative e/o raccomandazioni:  
*The instrumentation shall be carried out according to the following rules and/or recommendations:*

CEI / IEC  
ANSI  
API

- I seguenti documenti sono parte integrante di questa specifica

*The following documents are part of this specification :*

**1E35-81-191 - Material requisition for Instruments, control and on-off valves, pressure safety devices**

#### 4. TARGHETTE / NAMEPLATES

Tutti gli strumenti dovranno avere una targhetta in Acciaio Inossidabile con inciso l'ITEM dello strumento.  
*All instruments shall be furnished with Stainless Steel nameplate with instrument TAG*

#### 5. ACCESSORI / ACCESSORIES

- Sul corpo delle valvole dovrà essere incisa la freccia con l'indicazione della direzione del flusso.  
*Valve body shall have an integral arrow indication direction of flow.*  
- Sulla Valvola dovrà essere indicata la posizione di "Aperta" e "Chiusa"  
*On the Valve shall be indicated the position "Open" and "Close".*

#### 6. ATTUATORI / ACTUATORS

- Sul corpo delle valvole dovrà essere incisa la freccia con l'indicazione della direzione del flusso.  
*Valve body shall have an integral arrow indication direction of flow.*  
- Sulla Valvola dovrà essere indicata la posizione di "Aperta" e "Chiusa"  
*On the Valve shall be indicated the position "Open" and "Close"*  
- Il Venditore dovrà fornire le valvole complete di Volantino manuale per le operazioni locali in campo. Dovrà essere previsto un dispositivo meccanico per escludere il cilindro quando si deve intervenire con il Volantino manuale  
*Vendor shall provide Handweel for local field operation. A means for cylinder exclusion operation when using Handweel shall be provided*

#### 7. POSIZIONATORI / POSITIONERS

Tutte le valvole dovranno essere equipaggiate con Posizionatori Elettropneumatici  
*All valves shall be equipped with Electro/pneumatic positioners.*

#### 8. MATERIALI / MATERIALS

- Connessioni pneumatiche e raccorderia dovranno essere in Acciaio Inox (il Rame NON è accettato)  
*Pneumatic connection and fittings in Stainless Steel (Copper materials shall NOT be admitted)*

#### 9. ALIMENTAZIONE ARIA STRUMENTI / INSTRUMENTS AIR SUPPLY

L'aria strumenti è disoleata ma non filtrata - *Instrumets air is Oil free but not filtered*

Pressione Minima	-	Minimun pressure	:	4 barg
Pressione Normale	-	Normal pressure	:	5 barg
Pressione Massima	-	Maximum pressure	:	7 barg
Temperatuta	-	Temperature	:	30°C

#### 10. LIVELLO SONORO / SOUND PRESSURE LEVEL

Il dimensionamento delle Valvole dovrà assicurare che il livello sonoro dovrà essere inferiore a 85 dBA a 1 metro di distanza  
*Valves sizing shall ensure that the sound pressure level will be less than 85 dBA at 1 meter.*


#### 11. INSTALLAZIONE E MONTAGGIO / INSTALLATION AND MOUNTING

Le valvole saranno montate con l'albero in posizione verticale.  
*The valves will be mounted with shafts in vertical position.*

#### 12. ELETTRONICHE / ELECTRONIC UNIT

Tutti gli strumenti dovranno essere di tipo SMART con protocollo HART  
*All instruments shall be SMART type with HART protocol*

ALL ITEMS COMPLY WITH THE GENERAL REQUIREMENTS SHOWN ON THE GENERAL REQUIREMENTS SECTION OF THIS SPECIFICATION

	<b>INSTRUMENT SPECIFICATION</b> <b>SPECIFICA STRUMENTI</b>		Specification N° : <b>1E35-80-041</b>
	Customer - <i>Cliente</i> :		Specifica N°
	Plant - <i>Impianto</i> : <b>SULPHUREX</b>		Sheet : <b>3</b> of
	Job - <i>Commessa</i> : <b>1E35</b>		Foglio
		Rev. : <b>1</b>	

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Rev.	<b>Transmitter</b> <input type="checkbox"/> Flow <input checked="" type="checkbox"/> <b>Level</b> <input checked="" type="checkbox"/> <b>Differential Pressure</b> <b>Type</b> <input checked="" type="checkbox"/> <b>Electronic</b> <input type="checkbox"/> Pneumat. <input type="checkbox"/> Force balan. <input type="checkbox"/> D. balan. <b>Mounting</b> <input type="checkbox"/> Tap <input checked="" type="checkbox"/> <b>Yoke</b> <input type="checkbox"/> Surface <input type="checkbox"/> <b>Detector</b> <input checked="" type="checkbox"/> <b>Diaphragm</b> <input type="checkbox"/> Bourdon <input type="checkbox"/> Barton <input type="checkbox"/> Bellows  Max static pressure <b>5 Barg</b> Max differential pressure <b>0,5 Barg</b> Over range <b>150 % U.R.L.</b> Oper. temp. Limits (electronic) <b>-40/+85 °C</b> Oper. temp. Limits (diaphragm) <b>-40/+ 50 °C</b> Zero Elevation / Suppression <b>YES</b> <b>Materials</b> Body / Flange <b>AISI 316 / AISI 316</b> Diaphragm / Wetted parts <b>HASTELLOY-C</b> Process connections <b>AISI 316</b> Drains / Vents Case <b>MFR. STD.</b> Gaskets : <b>For Vacuum Service</b> O-Ring (Oval flanges) <b>Armored Graphoil</b> Bolting / Nut <b>INOX</b> Fill fluid <b>Silicon Oil</b>  Transmitter Output <input checked="" type="checkbox"/> <b>4÷20 mA HART (1)</b> Supply <input checked="" type="checkbox"/> <b>24 V d.c. ( 2 Wire )</b> by CCS Consumption <input type="checkbox"/> VA Impedence <input type="checkbox"/> Ohm Accuracy <input checked="" type="checkbox"/> <b>± 0.1 % Of Full Scale</b> Electrical construction <input checked="" type="checkbox"/> <b>Water Proof</b> <input type="checkbox"/> EEx-ia-IIC-T4 Housing type <input checked="" type="checkbox"/> <b>IP 65</b>	Rev.	<b>Connections transmitter</b> Process N.2 <b>½" NPT-F</b> <input type="checkbox"/> Oval flanges <input type="checkbox"/> <b>Flanged</b> <input checked="" type="checkbox"/> Electric N.2 <b>½" NPT-F</b> <input checked="" type="checkbox"/> PG 13,5 <input type="checkbox"/>  <b>Indicator</b> <b>Built in</b> <input checked="" type="checkbox"/> External <input type="checkbox"/> N. 2 connection 1/2" NPT-F <input type="checkbox"/> <b>Indicator with scale 0-100% and digital type</b> <input checked="" type="checkbox"/>  <b>Amplifier</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <b>Square root extractor</b> Yes <input type="checkbox"/> No <input type="checkbox"/>  <b>High Side Remote Seal</b> Process connections type: <b>YES</b> Connection : <b>3" ANSI-150# RF</b> Seal Type: <b>For Vacuum Service</b> Fill Fluid type : <b>SILICONE</b> Diaphragm Material: <b>HASTELLOY-C</b> Mounting Flange Material: <b>AISI 316</b> Capillary Length: <b>9 mt</b> Material: <b>AISI</b> Diaphragm Extens. Length: <b>YES 150 mm</b>  <b>Low Side Remote Seal</b> Process connections type: <b>WAFER (Pancake type)</b> Connection : <b>3" ANSI-150# RF</b> Seal Type: <b>For Vacuum Service</b> Fill Fluid type : <b>SILICONE</b> Diaphragm Material: <b>HASTELLOY-C</b> Mounting Flange Material: <b>AISI 316</b> Capillary Length: <b>9 mt</b> Material: <b>AISI</b> Diaphragm Extens. Length: <b>NO</b>  <b>Access.</b> Manifold type: <b>NO</b> Manifold Material: <b>---</b> Air Filter / Regulator: <b>---</b>  <b>PED</b>
------	---	------	---

Rev.	Sigla Tag	Fluido Fluid	Servizio Service	Oper Temp. °C	Oper Pres. Bar g	Livello Level		Taratura Setting mm	Campo Range mm H <sub>2</sub> O	P&I Dwg.	Note
						H mm	Y Kg/m <sup>3</sup>				
	LT 33.1	NEUT. PROD.	SUCTION 33P1	40	-0,95	3100	1000	0 ÷ 3100	713 ÷ 21414	1E35-10-010	(2-3)

<b>NOTES:</b> 1) Hart Transmitter. Protocol Smart. 2) Viscosity : 500/5000 cps 3) To Be Defined By MFR, range shall be higher than 5000mmH <sub>2</sub> O	<b>PURCHASING DATA</b> Manuf. : <b>FOXBORO</b> Model : <b>IDP10-TS1C01E-M1L1G1 +</b> <b>PSFES-B3C6E314F + PSFPS-C3C0E314F</b> Supplier : <b>FOXBORO</b> Order : <b>291509</b>
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BALLESTRA S.p.A.

SPECIFICA STRUMENTI - TRASMETTITORI PRESSIONE

INSTRUMENT SPECIF. - PRESSURE TRANSMITTERS

DWG. 1A12 -80-009

FOGLIO 5 DI OF

CLIENTE CUSTOMER

COMMESSA JOB 1A12

UNITA' UNIT

(1E35 80 041)

CARATTERISTICHE GENERALI  
GENERAL CHARACTERISTICS

TRASMETTITORE  
TRANSMITTER

☒ PRESSIONE  
PRESSURE

TIPO  
TYPE

☒ ELETTRONICO  
ELECTRONIC

☐ PNEUMATICO  
PNEUMATIC

EQUILIBRIO FORZE  
FORCE BALANCE

☐ EQUILIBRIO SPOSTAMENTI  
DISPLACEMENT BALANCE

MONTAGGIO  
MOUNTING

☐ SU PRESA  
TAP

☒ SU STAFFA  
YOKE

☐ A PARETE  
SURFACE

ALTRA  
OTHER

ELEM. RIVELATORE  
DETECTOR

☐ BOURDON  
BOURDON

☐ BARTON  
BARTON

☒ DIAFRAMMA  
DIAPHRAGM

☐ SOFFIETTO  
BELLWS

☐ SEMPLICE  
SINGLE

☐ DOPPIO  
DOUBLE

MAX PRESS. STATICA  
MAX STATIC PRESS.

MAX PRESS. DIFF.  
MAX DIFF. PRESS.

SOVRAPPRESSIONE (% SCALA)  
OVER RANGE (% SCALE)

LIMITI DI TEMP. LAVORO  
OPERATING TEMP. LIMITS °C

CORPO  
BODY

☒ AISI 316

☐ ALTRO  
OTHER

ELEM. RIVELATORE  
DETECTOR

☐ AISI 316

☒ ALTRO  
OTHER

PARTI A CONT. FLUIDO  
WETTED PARTS

☒ AISI 316

☐ ALTRO  
OTHER

CASSA  
CASE

☒ LEGA AL  
AL ALLOY

☐ ALTRO  
OTHER

VITER. ESTERNA  
EXTERNAL SCREWS

☒ INOX  
SST

☐ ALTRO  
OTHER

SEGNAL. USCITA  
OUTPUT

☐ 3 + 15 paig

☒ 4 + 20 mA

☐ ALTRO  
OTHER

CONSUMO  
CONSUMPTION

Nm<sup>2</sup>/h

IMPEDENZA  
IMPEDENCE

ALIMENTAZIONE  
SUPPLY

ELETTRICA  
ELECTRICAL

PNEUMATICA  
PNEUMATIC

ESEC. CASSA  
HOUSING TYPE

☐ NORMALE  
G. P.

☐ STAGNA ALLA MANICH.  
W. PRF.

☐ STAGNA ALLE INTIMP.  
WH. PRF.

☒ ALTRO  
OTHER

IPB5-TROPICALIZED

22 COSTRUIZ.  
ELETTR.

NORME  
STD

CLASSE  
CLASS

DIV.  
DIV.

GRUPPO  
GROUP

23 ELETTR.  
CONSTRUCT

TIPO  
TYPE

24 ATTACCHI  
CONNECTIONS

PROCESSO  
PROCESS

☒ 1/2" NPT F.

☐ ALTRO  
OTHER

25 PNEUMATICI  
PNEUMATIC

☐ 1/4" NPT F.

☐ ALTRO  
OTHER

26 ELETTRICI  
ELECTRIC

INGRESSO 1/2" NPT F.

USCITA  
OUTLET

27 INDIC. INCORPORATO  
BUILT IN INDICATOR

☒ SI  
YES

☐ NO

LUNGH. SCALA  
SCALE LENGTH

DIGITAL mm

28 AMPLIFICATORE  
AMPLIFIER

☒ SI  
YES

☐ NO

ESTR. RADICE QUADRA  
SQUARE ROOT EXTRACTOR

☐ SI  
YES

29 PRECISIONE  
ACCURACY

☐ ± 0.5 %

MAX VALORE SCALA  
OF FULL SCALE

☒ ALTRO  
OTHER

± 0.2 %

ACCESSORI  
ACCESSORIES

30 SEPARAT. A MEMBR.  
DIAPHRAGM SEAL

LIQUIDO SEPARATORE  
SEAL LIQUID

31 ATTACCO  
CONNECTION

MATERIALI: SEPARATORE  
MATERIALS: DIAPHRAGM SEAL

CAPILLARE  
CAPILLARY

32 LUNGH. CAPILLARE  
CAPILLARY LENGTH

33 FILTRO RIDUTTORE  
AIR SUPPLY FILTER

34 ALIMENTAZIONE ELETTRICA  
ELECTRICAL SUPPLY

35 IND. SEGNALE USCITA  
LOCAL INDICATOR

36 SMORZATORE  
DAMPENER

NOTE  
NOTES

SIGLA  
TAG NO.

FLUIDO  
FLUID

SERVIZIO  
SERVICE

MAX.  
TEMP.

°C

CAMPO  
RANGE

mm. H<sub>2</sub>O  
bar

TARATURA  
CALIBRATION

mm. H<sub>2</sub>O  
m bar

SCALA  
SCALE

ESTENS.  
RANGE

TIPO  
TYPE

ORDINE  
PURCH.  
DATA

NOTE  
NOTES

PT 33.10

AIR

SUCTION 33P5

25

0.07  
2.1

1000  
+200

NOTE  
NOTES

6

5

4

3

2

1

0

REV.

Issue for order

DESCRIZIONE  
DESCRIPTION

DATA  
DATE

COMP.  
BY

APPR.  
APPR.

DATA CONSEGNA  
DELIVERY DATE

DATI D'ACQUISTO  
PURCHASING DATA

N. R.D.O.

COSTRUTTORE  
MANUFACTURER

MODELLO  
MODEL

FORNITORE  
SUPPLIER

N. ORDINE  
ORDER NO.

DATA EMISSIONE ORDINE  
ORDER ISSUING DATE

1°

2°

3°

FOXBORO

1GP20-T22C21E-M4L1B1

FOXBORO

291509





BALLESTRA S.p.A.

INSTRUMENT SPECIF. - LEVEL & DIFF. PRESSURE TRANSMITTERS

CLIENTE  
CUSTOMER  
COMMESSA  
JOB

1A12

UNITA'  
UNIT

DWG. 1A12-00-004

FOGLIO  
SHEET

DI  
OF

(1E35.80.041)

CARATTERISTICHE GENERALI  
GENERAL CHARACTERISTICS

TRASMETTITORE  
TRANSMITTER

TIPO  
TYPE

MONTAGGIO  
MOUNTING

ELEM. RIVELATORE  
DETECTOR

MAX PRESS. STATICA  
MAX STATIC. PRESS.

SOVRAPPRESSIONE (% SCALA)  
OVER RANGE (% SCALE)

MATERIALI  
MATERIALS

ELEM. RIVELATORE  
DETECTOR

PARTI A CONT. FLUIDO  
WETTED PARTS

CASSA  
CASE

VITER. ESTERNA  
EXTERNAL SCREWS

SEGNALE USCITA  
OUTPUT

CONSUMO  
CONSUMPTION

IMPEDENZA  
IMPEDENCE

ALIMENTAZIONE  
SUPPLY

ESEC. CASSA  
HOUSING TYPE

LIVELLO  
LEVEL

ELETTRONICO  
ELECTRONIC

EQUILIBRIO FORZE  
FORCE BALANCE

SU PRESA  
TAP

ALTRIO  
OTHER

BOURDON  
BOURDON

SOFFIETTO  
BELLOWS

PRESSIONE DIFFERENZIALE  
DIFFERENTIAL PRESSURE

PNEUMATICO  
PNEUMATIC

EQUILIBRIO SPOSTAMENTI  
DISPLACEMENT BALANCE

SU STAFFA  
YOKE

A PARETE  
SURFACE

BARTON  
BARTON

SEMPLICE  
SINGLE

DIAPHRAGMA  
DIAPHRAGM

DOPIO  
DOUBLE

MAX PRESS. DIFF.  
MAX DIFF. PRESS.

LIMITI DI TEMP. LAVORO  
OPERATING TEMP. LIMITS

CORPO  
BODY

ELEM. RIVELATORE  
DETECTOR

PARTI A CONT. FLUIDO  
WETTED PARTS

CASSA  
CASE

VITER. ESTERNA  
EXTERNAL SCREWS

SEGNALE USCITA  
OUTPUT

CONSUMO  
CONSUMPTION

IMPEDENZA  
IMPEDENCE

ALIMENTAZIONE  
SUPPLY

ESEC. CASSA  
HOUSING TYPE

ALTRIO  
OTHER

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

IP65-TROPICALIZED

COSTRUZ.  
ELETTR.

ELETTR  
CONSTRUCT

ATTACCHI  
CONNECTIONS

PNEUMATICI  
PNEUMATIC

ELETTRICI  
ELECTRIC

INDIC. INCORPORATO  
BUILT IN INDICATOR

AMPLIFICATORE  
AMPLIFIER

PRECISIONE  
ACCURACY

NORME  
STD

TIPO  
TYPE

PROCESSO  
PROCESS

PNEUMATICI  
PNEUMATIC

ELETTRICI  
ELECTRIC

INDIC. INCORPORATO  
BUILT IN INDICATOR

AMPLIFICATORE  
AMPLIFIER

PRECISIONE  
ACCURACY

CLASSE  
CLASS

TIPO  
TYPE

PROCESSO  
PROCESS

PNEUMATICI  
PNEUMATIC

ELETTRICI  
ELECTRIC

INDIC. INCORPORATO  
BUILT IN INDICATOR

AMPLIFICATORE  
AMPLIFIER

PRECISIONE  
ACCURACY

DIV.  
DIV

TIPO  
TYPE

PROCESSO  
PROCESS

PNEUMATICI  
PNEUMATIC

ELETTRICI  
ELECTRIC

INDIC. INCORPORATO  
BUILT IN INDICATOR

AMPLIFICATORE  
AMPLIFIER

PRECISIONE  
ACCURACY

GRUPPO  
GROUP

TIPO  
TYPE

PROCESSO  
PROCESS

PNEUMATICI  
PNEUMATIC

ELETTRICI  
ELECTRIC

INDIC. INCORPORATO  
BUILT IN INDICATOR

AMPLIFICATORE  
AMPLIFIER

PRECISIONE  
ACCURACY

ACCESSORI  
ACCESSORIES

SEPARAT. A MEMBR.  
DIAPHRAGM SEAL

LIQUIDO SEPARATORE  
SEAL LIQUID

ATTACCO  
CONNECTION

MATERIALI: SEPARATORE  
MATERIALS: DIAPHRAGM SEAL

LUNGH. CAPILLARE  
CAPILLARY LENGTH

FILTRO RIDUTTORE  
AIR SUPPLY FILTER

ALIMENTAZIONE ELETTRICA  
ELECTRICAL SUPPLY

IND. SEGNALE USCITA  
LOCAL INDICATOR

SMORZATORE  
DAMPENER

NOTE  
NOTES

-DP TRANS. PROVIDED WITH REMOVABLE OVAL FLANGES.

1/2" NPT THR.

SIGLA  
TAG NO

SERVIZIO  
SERVICE

FLUIDO  
FLUID

MAX  
TEMP.

MAX  
PRESS

LIVELLO  
LEVEL

CAMPO  
RANGE

TARATURA  
CALIBRATION

SCALA  
SCALE

ESTENS.  
RANGE

TIPO  
TYPE

ORDINE  
PURCH. DATA

NOTE  
NOTES

FT16.1

DILUTION

AIR

87-5000

0-300

FT16.2

SO3 TO

SO3+AIR

87-5000

0-300

REACTOR

NOTE  
NOTES

6

5

4

3

2

1

0

REV.

Issue for order

10.97

DATI D'ACQUISTO  
PURCHASING DATA

N. R.D.O.

COSTRUTTORE  
MANUFACTURER

MODELLO  
MODEL

FORNITORE  
SUPPLIER

N. ORDINE  
ORDER NO.

DATA EMISSIONE ORDINE  
ORDER ISSUING DATE

DATA CONSEGNA  
DELIVERY DATE

FOXBORO

IDP10-A22B21F-M1

291444



# INSTRUMENT SPECIFICATION SPECIFICA STRUMENTI

Specification N° : **1E35-80-041**

Specifica N°

Customer - Cliente :

Sheet : **8** ofPlant - Impianto : **SULPHUREX**

Foglio

Job - Commessa : **1E35**Rev. : **2**

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Rev.	<table><tr><td>Transmitter</td><td><input type="checkbox"/> Flow</td><td><input checked="" type="checkbox"/> Level</td></tr><tr><td></td><td><input type="checkbox"/> Differential Pressure</td><td></td></tr><tr><td>Type</td><td><input checked="" type="checkbox"/> Electronic</td><td><input type="checkbox"/> Pneumat.</td></tr><tr><td></td><td><input type="checkbox"/> Force balan.</td><td><input type="checkbox"/> D. balan.</td></tr><tr><td>Mounting</td><td><input type="checkbox"/> Tap</td><td><input checked="" type="checkbox"/> Yoke</td></tr><tr><td></td><td><input type="checkbox"/> Surface</td><td><input type="checkbox"/></td></tr><tr><td>Detector</td><td><input checked="" type="checkbox"/> Diaphragm</td><td><input type="checkbox"/> Bourdon</td></tr><tr><td></td><td><input type="checkbox"/> Barton</td><td><input type="checkbox"/> Bellows</td></tr><tr><td>Max static pressure</td><td colspan="2">5 Barg</td></tr><tr><td>Max differential pressure</td><td colspan="2">0,5 Barg</td></tr><tr><td>Over range</td><td colspan="2">150 % U.R.L.</td></tr><tr><td>Oper. temp. Limits (electronic)</td><td colspan="2">-40/+85 °C</td></tr><tr><td>Oper. temp. Limits (diaphragm)</td><td colspan="2">-40/+ 50 °C</td></tr><tr><td>Zero Elevation / Suppression</td><td colspan="2">YES</td></tr><tr><td>Materials</td><td colspan="2">Body / Flange AISI 316 / AISI 316</td></tr><tr><td></td><td colspan="2">Diaphragm / Wetted parts CERAMIC</td></tr><tr><td></td><td colspan="2">Process connections AISI 316</td></tr><tr><td></td><td colspan="2">Drains / Vents</td></tr><tr><td></td><td colspan="2">Case MFR. STD.</td></tr><tr><td></td><td colspan="2">Gaskets :</td></tr><tr><td></td><td colspan="2">O-Ring (Oval flanges)</td></tr><tr><td></td><td colspan="2">Bolting / Nut INOX</td></tr><tr><td></td><td colspan="2">Fill fluid</td></tr><tr><td>Transmitter Output</td><td><input checked="" type="checkbox"/> 4+20 mA</td><td>HART (1)</td></tr><tr><td>Supply</td><td><input checked="" type="checkbox"/> 24 V d.c. ( 2 Wire )</td><td>by CCS</td></tr><tr><td>Consumption</td><td><input type="checkbox"/></td><td>VA</td></tr><tr><td>Impedence</td><td><input type="checkbox"/></td><td>Ohm</td></tr><tr><td>Accuracy</td><td><input checked="" type="checkbox"/> ± 0.1 % Of Full Scale</td><td></td></tr><tr><td>Electrical construction</td><td><input checked="" type="checkbox"/> Water Proof</td><td></td></tr><tr><td></td><td><input type="checkbox"/> EEx-ia-IIC-T4</td><td></td></tr><tr><td>Housing type</td><td><input checked="" type="checkbox"/> IP 66</td><td></td></tr></table>	Transmitter	<input type="checkbox"/> Flow	<input checked="" type="checkbox"/> Level		<input type="checkbox"/> Differential Pressure		Type	<input checked="" type="checkbox"/> Electronic	<input type="checkbox"/> Pneumat.		<input type="checkbox"/> Force balan.	<input type="checkbox"/> D. balan.	Mounting	<input type="checkbox"/> Tap	<input checked="" type="checkbox"/> Yoke		<input type="checkbox"/> Surface	<input type="checkbox"/>	Detector	<input checked="" type="checkbox"/> Diaphragm	<input type="checkbox"/> Bourdon		<input type="checkbox"/> Barton	<input type="checkbox"/> Bellows	Max static pressure	5 Barg		Max differential pressure	0,5 Barg		Over range	150 % U.R.L.		Oper. temp. Limits (electronic)	-40/+85 °C		Oper. temp. Limits (diaphragm)	-40/+ 50 °C		Zero Elevation / Suppression	YES		Materials	Body / Flange AISI 316 / AISI 316			Diaphragm / Wetted parts CERAMIC			Process connections AISI 316			Drains / Vents			Case MFR. STD.			Gaskets :			O-Ring (Oval flanges)			Bolting / Nut INOX			Fill fluid		Transmitter Output	<input checked="" type="checkbox"/> 4+20 mA	HART (1)	Supply	<input checked="" type="checkbox"/> 24 V d.c. 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Rev.	Sigla Tag	Fluido Fluid	Servizio Service	Oper Temp. °C	Oper Pres. mmH2O	Livello Level		Taratura Setting mm H2O	Campo Range mbar	P&I Dwg.	Note
						H mm	Y Kg/m³				
	LT 16.1 (+)	SULPH. ACID	SUCTION 16P2	50	500	342	700/1000	0 ÷ 1000	0 ÷ 400	1E35-10-005/1	1
	LT 16.1 (-)	SULPH. ACID	ON 16V4	50	500	/	/	0 ÷ 1000	0 ÷ 400	1E35-10-005/1	1

**NOTES:**

1) Hart Transmitter. Protocol Smart.

**PURCHASING DATA**

Manuf. : ENDRESS+HAUSER  
Model LT16.1+ : PMC71-ACC1FBYYEAA  
Model LT16.1- : PMC71-ACC1FBAGEAA  
Supplier : ENDRESS+HAUSER  
Order : 100397





BALLESTRA S.p.A.  
MILANO (ITALIA)

# INSTALLATION DRAWING FOR LEVEL TRANSMITTER SETTING

(1E35.80.041)

DWG. 1A12.80.008

CUSTOMER:

SH.

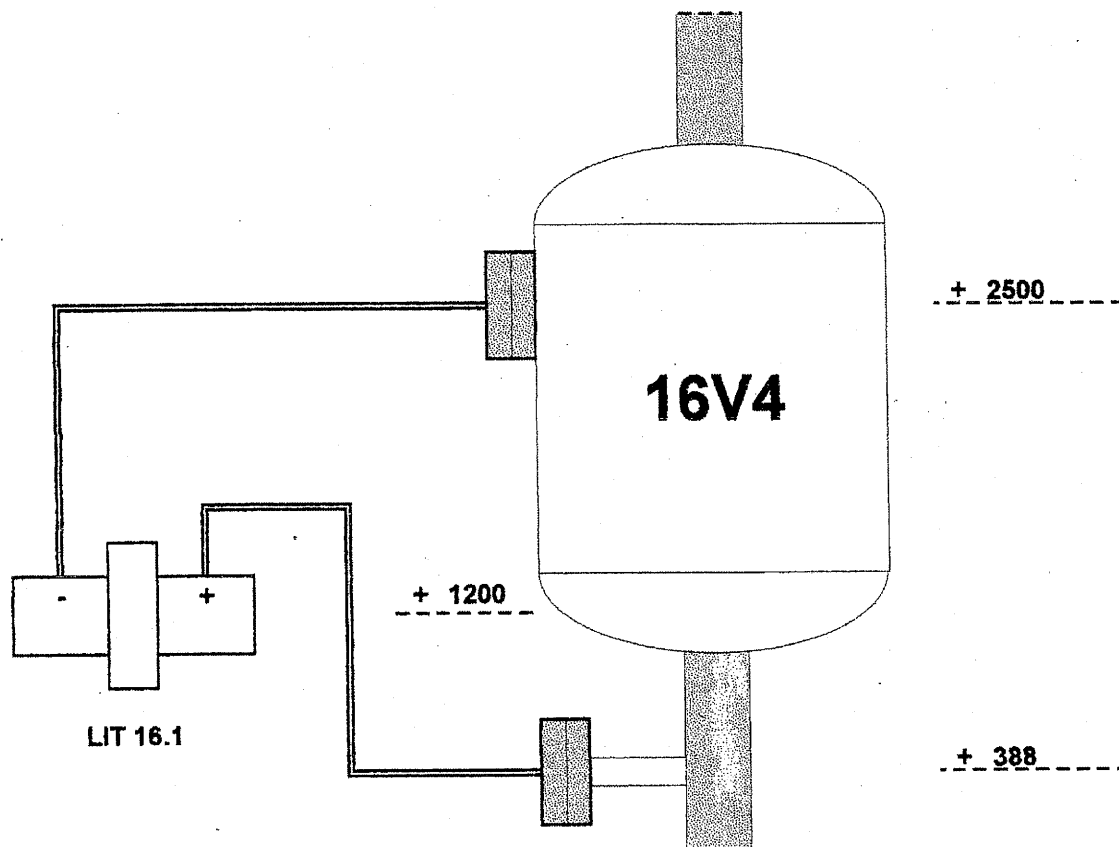
PLANT: SULPHUREX

OF

JOB: 1A12

Computer code: LTS1A12.xls

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4					PURCH. DATA			
3					Manufacturer			
2					Model			
1					Supplier			
0	Issue for setting	11.97	Avella					
REV.	DESCRIPTION	DATE	BY	APPR.				



BALLESTRA S.p.A.

INSTRUMENT SPECIF. - LEVEL & DIFF. PRESSURE TRANSMITTERS

PRESSIONE DIFFERENZIALE  
LEVEL & DIFF. PRESSURE  
TRANSMITTERS

UWG. 1A12-DU-000

FOGLIO 10 DI 10

CLIENTE

CUSTOMER

COMMESSA

JOB

1A12

UNITA'

UNIT

(1E35.80.041)

CARATTERISTICHE GENERALI  
GENERAL CHARACTERISTICS

TRASMETTITORE  
TRANSMITTER

TIPO  
TYPE

MONTAGGIO  
MOUNTING

ELEM. RIVELATORE  
DETECTOR

MAX PRESS. STATICA  
MAX STATIC PRESS.

SOVRAPPRESSIONE (% SCALA)  
OVER RANGE (% SCALE)

MATERIALI  
MATERIALS

ELEM. RIVELATORE  
DETECTOR

PARTI A CONT. FLUIDO  
WETTED PARTS

CASSA  
CASE

VITER. ESTERNA  
EXTERNAL SCREWS

SEGNAL. USCITA  
OUTPUT

CONSUMO  
CONSUMPTION

IMPEDENZA  
IMPEDENCE

ALIMENTAZIONE  
SUPPLY

ESEC. CASSA  
HOUSING TYPE

IP65-TROPICALIZED

LIVELLO  
LEVEL

ELETTRONICO  
ELECTRONIC

EQUILIBRIO FORZE  
FORCE BALANCE

SU PRESA  
TAP

ALTRA  
OTHER

BOURDON  
BOURDON

BOFFIETTO  
BELLOWS

MAX PRESS. DIFF.  
MAX DIFF. PRESS.

LIMITI DI TEMP. LAVORO  
OPERATING TEMP LIMITS

CORPO  
BODY

ELEM. RIVELATORE  
DETECTOR

PARTI A CONT. FLUIDO  
WETTED PARTS

CASSA  
CASE

VITER. ESTERNA  
EXTERNAL SCREWS

SEGNAL. USCITA  
OUTPUT

CONSUMO  
CONSUMPTION

IMPEDENZA  
IMPEDENCE

ALIMENTAZIONE  
SUPPLY

ESEC. CASSA  
HOUSING TYPE

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PRESSIONE DIFFERENZIALE  
DIFFERENTIAL PRESSURE

PNEUMATICO  
PNEUMATIC

EQUILIBRIO SPOSTAMENTI  
DISPLACEMENT BALANCE

SU STAFFA  
YOKE

A PARETE  
SURFACE

BARTON  
BARTON

SEMPLICE  
SINGLE

DIAPHRAGMA  
DIAPHRAGM

DOPIO  
DOUBLE

MAX PRESS. DIFF.  
MAX DIFF. PRESS.

LIMITI DI TEMP. LAVORO  
OPERATING TEMP LIMITS

AISI 316  
AISI 316

ALTRA  
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ELETTR.  
CONSTRUCT

ATTACCHI  
CONNECTIONS

PROCESSO  
PROCESS

PNEUMATICO  
PNEUMATIC

ELETTRICI  
ELECTRIC

INDIC. INCORPORATO  
BUILT IN INDICATOR

AMPLIFICATORE  
AMPLIFIER

PRECISIONE  
ACCURACY

ACCESSORI  
ACCESSORIES

LIQUIDO SEPARATORE  
SEAL LIQUID

ATTACCO  
CONNECTION

MATERIALI: SEPARATORE  
MATERIALS: DIAPHRAGM SEAL

LUNGH. CAPILLARE  
CAPILLARY LENGTH

FILTRO RIDUTTORE  
AIR SUPPLY FILTER

ALIMENTAZIONE ELETTRICA  
ELECTRICAL SUPPLY

IND. SEGNALE USCITA  
LOCAL INDICATOR

SMORZATORE  
DAMPENER

NOTE  
NOTES

DP TRANSM. PROVIDED WITH REMOVABLE OVAL FLANGES,  
1/2" NPT THR.

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BUILT IN INDICATOR

AMPLIFICATORE  
AMPLIFIER

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ACCESSORI  
ACCESSORIES

LIQUIDO SEPARATORE  
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ATTACCO  
CONNECTION

MATERIALI: SEPARATORE  
MATERIALS: DIAPHRAGM SEAL

LUNGH. CAPILLARE  
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FILTRO RIDUTTORE  
AIR SUPPLY FILTER

ALIMENTAZIONE ELETTRICA  
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IND. SEGNALE USCITA  
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GRUPPO  
GROUP

PROCESSO  
PROCESS

PNEUMATICO  
PNEUMATIC

ELETTRICI  
ELECTRIC

INDIC. INCORPORATO  
BUILT IN INDICATOR

AMPLIFICATORE  
AMPLIFIER

PRECISIONE  
ACCURACY

ACCESSORI  
ACCESSORIES

LIQUIDO SEPARATORE  
SEAL LIQUID

ATTACCO  
CONNECTION

MATERIALI: SEPARATORE  
MATERIALS: DIAPHRAGM SEAL

LUNGH. CAPILLARE  
CAPILLARY LENGTH

FILTRO RIDUTTORE  
AIR SUPPLY FILTER

ALIMENTAZIONE ELETTRICA  
ELECTRICAL SUPPLY

IND. SEGNALE USCITA  
LOCAL INDICATOR

SMORZATORE  
DAMPENER

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BALLESTRA S.p.A.

SPECIFICA STRUMENTI - TRASMETTITORI PRESSIONE

INSTRUMENT SPECIF. - PRESSURE TRANSMITTERS

DWG. 1A12 -80-009

FOGLIO 13 DI 13

CLIENTE CUSTOMER

COMMESSA JOB

1A12

UNITA' UNIT

(1E35 30.041)

CARATTERISTICHE GENERALI  
GENERAL CHARACTERISTICS

TRASMETTITORE  
TRANSMITTER

TIPO  
TYPE

MONTAGGIO  
MOUNTING

ELEM. RIVELATORE  
DETECTOR

MAX PRESS. STATICA  
MAX STATIC PRESS.

SOVRAPRESSIONE (% SCALA)  
OVER RANGE (% SCALE)

MATERIALI  
MATERIALS

SEGNALE USCITA  
OUTPUT

CONSUMO  
CONSUMPTION

IMPEDENZA  
IMPEDENCE

ALIMENTAZIONE  
SUPPLY

ESEC. CASSA  
HOUSING TYPE

☒ PRESSIONE  
PRESSURE

☒ ELETTRONICO  
ELECTRONIC

☐ EQUILIBRIO FORZE  
FORCE BALANCE

☐ SU PRESA  
TAP

☐ ALTRIO  
OTHER

☐ BOURDON  
BOURDON

☐ SOFFIETTO  
BELLOWS

☐ PNEUMATICO  
PNEUMATIC

☐ EQUILIBRIO SPOSTAMENTI  
DISPLACEMENT BALANCE

☒ SU STAFFA  
YOKE

☐ A PARETE  
SURFACE

☐ BARTON  
BARTON

☐ SEMPLICE  
SINGLE

☒ DIAFRAMMA  
DIAPHRAGM

☐ DOPPIO  
DOUBLE

MAX PRESS. DIFF.  
MAX DIFF. PRESS.

LIMITI DI TEMP. LAVORO  
OPERATING TEMP. LIMITS

☒ AISI 316

☐ ALTRIO  
OTHER

☐ AISI 316

☒ AISI 316

☐ ALTRIO  
OTHER

☒ LEGA AL  
AL ALLOY

☐ ALTRIO  
OTHER

☐ INOX  
SST

☐ ALTRIO  
OTHER

☐ 3 + 15 psig

☒ 4 + 20 mA

☐ ALTRIO  
OTHER

☐ 3 + 15 psig

☐ 4 + 20 mA

☐ ALTRIO  
OTHER

☐ 3 + 15 psig

☐ 4 + 20 mA

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☐ 3 + 15 psig

☐ 4 + 20 mA

☐ ALTRIO  
OTHER

24 de FROM PLC

IP65-TROPICALIZED

22 COSTRUZ.  
ELETTR.

23 ELETTR.  
CONSTRUCT

24 ATTACCHI  
CONNECTIONS

25 PNEUMATICI  
PNEUMATIC

26 ELETTRICI  
ELECTRIC

27 INDIC. INCORPORATO  
BUILT IN INDICATOR

28 AMPLIFICATORE  
AMPLIFIER

29 PRECISIONE  
ACCURACY

NORME  
STD

TIPO  
TYPE

PROCESSO  
PROCESS

PNEUMATICI  
PNEUMATIC

ELETTRICI  
ELECTRIC

INGRESSO  
INLET

USCITA  
OUTLET

MAX VALORE SCALA  
OF FULL SCALE

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ACCESSORI  
ACCESSORIES

30 LIQUIDO SEPARATORE  
SEAL LIQUID

31 ATTACCO  
CONNECTION

32 MATERIALI: SEPARATORE  
MATERIALS: DIAPHRAGM SEAL

33 LUNGH. CAPILLARE  
CAPILLARY LENGTH

34