



INSTRUMENTS SPECIFICATION SPECIFICA STRUMENTI

Specification N° : **1E35-80-166**

Specifica N°

Customer - *Cliente* :

Sheet : **1** of **4**

Plant - *Impianto* : **SLS**

Foglio

Job - *Commessa* : **1E35**

Rev. : **1**

We reserve the ownership under the law of this document with prohibition of even partial reproduction and to make it known to third persons without our written authorization

Ci riserviamo la proprietà a termine di legge di questo documento con divieto di riprodurlo anche in parte o di renderlo a terzi senza nostra autorizzazione scritta.

THERMOELEMENTS *Termoelementi*

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
REV. 0	x	x	x	x																						
REV. 1	x		x	x																						
REV. 2																										
REV. 3																										
REV. 4																										
REV. 5																										

SHEET	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
REV. 0																										
REV. 1																										
REV. 2																										
REV. 3																										
REV. 4																										
REV. 5																										

1	Issue for order	A. Emonte	18/02/2010
0	Issue for bid	A. Emonte	21/12/2009
REV	Issue Description	Author	Date
Rev.	Descrizione	Autore	Data

The master version of this document is stored as a digital file in a database. Approval process is digitally managed and no signature is visible on the document.

L'originale del presente documento risiede in un database digitale. Il processo di approvazione è gestito via software e le firme non sono visibili sul documento.



INSTRUMENT SPECIFICATION SPECIFICA STRUMENTI

Specification N° : **1E35-80-166**

Specifica N°

Customer - Cliente :

Sheet : **2** ofPlant - Impianto : **SLS**

Foglio

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

Ci riserviamo la proprietà a termine di legge di questo documento con divieto di riprodurlo anche in parte o di renderlo a terzi senza nostra nostra autorizzazione scritta.

We reserve the ownership under the law of this document with prohibition of even partial reproduction and to make it known to third persons without our written authorization

NOTE GENERALI E INFORMAZIONI / GENERAL REQUIREMENTS AND INFORMATION

1. CONDIZIONI AMBIENTALI / ENVIRONMENTAL CONDITIONS

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

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 - *Instruments 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

Temperatura - *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

	INSTRUMENT SPECIFICATION THERMORESISTANCES						DWG. : 1E35-80-166	
	CUSTOMER :						SH. : 3	
	PLANT : SLS						REV. : 1	
	JOB : 1E35							

Ci riserviamo la proprietà a termine di legge di questo documento con divieto di riprodurlo anche in parte o di renderlo a terzi senza nostra autorizzazione scritta.
 We reserve the ownership under the law of this document with prohibition of even partial reproduction and to make it known to third persons without our written authorization


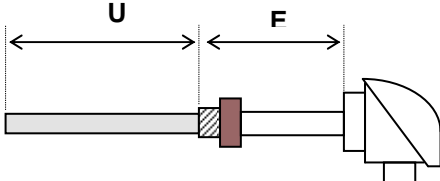
Rev.	SPECIFICATION	Rev.	ELEMENT
<div>Thermometric pocket from PIPE</div> <div>Type Sheet</div> <div>Type ST 75002 F</div> <div>Material AISI316 see note</div> <div style="text-align: center; font-weight: bold; margin-top: 10px;">HEAD</div> <div>Cover <input checked="" type="checkbox"/> Screw. <input type="checkbox"/> Other</div> <div>Material <input checked="" type="checkbox"/> Al Alloy <input type="checkbox"/> Cast iron</div> <div>Enclosure <input checked="" type="checkbox"/> W.Proof <input checked="" type="checkbox"/> IP 65 <input checked="" type="checkbox"/> Tropicalized</div> <div>Electrical <input type="checkbox"/> EEx-d <input type="checkbox"/> ATEX Ex II 3D T135°C</div> <div>construct.</div> <div>Class Divis. Group</div> <div>Feeding 24Vdc from PLC</div> <div style="text-align: center; font-weight: bold; margin-top: 10px;">CONNECTIONS</div> <div>To well <input checked="" type="checkbox"/> 1/2" GAS-F <input type="checkbox"/></div> <div>To conduit <input type="checkbox"/> M20 x 1,5 <input checked="" type="checkbox"/> 3/4" GAS-F</div> <div>Process 1" NPT-M</div> <div>Material flange</div> <div>Terminals on terminal block</div> <div><input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/></div> <div>Terminal block material <input checked="" type="checkbox"/> Ceramic</div> <div>Loading spring <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</div>	<div>Sheath material</div> <div><input checked="" type="checkbox"/> AISI316 <input type="checkbox"/> INCONEL <input type="checkbox"/> NICKEL</div> <div>Dimensions (O.D.) <input type="checkbox"/> 6,35 mm</div> <div><input type="checkbox"/> M's Std</div> <div>Insulation <input checked="" type="checkbox"/> Magnesium oxide</div> <div>Scaling with resin</div> <div><input type="checkbox"/> Ceramic</div> <div style="text-align: center; font-weight: bold; margin-top: 10px;">THERMOCOUPLE</div> <div>Wire gauge Single <input type="checkbox"/> 18 AWG</div> <div>Double <input type="checkbox"/> 19 AWG</div> <div>Characteristics <input type="checkbox"/> EN60584-2 <input type="checkbox"/> ISA " K "</div> <div><input type="checkbox"/> Class 2 <input type="checkbox"/></div> <div>Ungrounded hot junction <input type="checkbox"/></div> <div>Grounded hot junction <input type="checkbox"/></div> <div style="text-align: center; font-weight: bold; margin-top: 10px;">RESISTANCE BULBS</div> <div>Type <input type="checkbox"/> Standard <input checked="" type="checkbox"/> Type sensitive</div> <div>Dimensions (o.d./length) <input type="checkbox"/> 3 x 30 mm</div> <div>Characteristics <input type="checkbox"/> DIN 43760 <input checked="" type="checkbox"/> Pt 100 Ω</div> <div><input checked="" type="checkbox"/> EN60751</div> <div>Sealing bulb material <input checked="" type="checkbox"/> Glass</div> <div><input type="checkbox"/> Ceramic</div> <div style="margin-top: 10px;">Lengths :</div> <div style="text-align: center;"> </div>		

Rev.	Tag Number	Service & Location	INSTALLATION NOZZLE NUMBER	INSTALLATION PIPE SIZE	Transmitter Calibr. Range	Element	Type	Lengths mm		P&I Dwg.	Notes	
					°C	Operating Temp. °C	Single	Double	U	E		
	TET 77.1	OUTLET 77H1			0 to 300	180	<input type="checkbox"/>	<input checked="" type="checkbox"/>	450	150	1E35.10. 011	1-2
	TET 77.2	OUTLET 77H1			0 to 300	180	<input type="checkbox"/>	<input checked="" type="checkbox"/>	450	150	1E35.10. 011	1-2
	TET 77.3	OUTLET 77H1			0 to 300	180	<input type="checkbox"/>	<input checked="" type="checkbox"/>	450	150	1E35.10. 011	1-2
	TET 77.10	SUCTION 77K1			0 to 300	160	<input type="checkbox"/>	<input checked="" type="checkbox"/>	450	150	1E35.10. 011	1-2
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				

A = PT - PLATINUM 100 ohm 0°C

Note interne

Remarks	Purchasing data
1. Thermoresistance complete of with programmable transmitter 4-20 mA mounted into head 2 wires technology (HART CONFIGURABLE). PR 2. RTD complete with thermowell.	Manufacturer : STA TT Model : PR Supplier : STA Order number : 100239

<div></div>		<div>INSTRUMENT SPECIFICATION THERMORESISTANCES</div>				<div>DWG. : 1E35-80-166</div>																																																																																																																																																	
		<div>CUSTOMER : </div>				<div>SH. : 4</div>																																																																																																																																																	
		<div>PLANT : SLS</div>				<div>REV. : 1</div>																																																																																																																																																	
		<div>JOB : 1E35</div>																																																																																																																																																					
<div>Ci riserviamo la proprietà a termine di legge di questo documento con divieto di riprodurlo anche in parte o di renderlo a terzi senza nostra autorizzazione scritta. We reserve the ownership under the law of this document with prohibition of even partial reproduction and to make it known to third persons without our written authorization</div>																																																																																																																																																							
<div><div><div>Rev.</div><div>SPECIFICATION</div><div>Thermometric pocket from PIPE</div><div>Type Sheet</div><div>Type ST 75002 F</div><div>Material AISI316 see note</div><div>HEAD</div><div>Cover <input checked="" type="checkbox"/> Screw. <input type="checkbox"/> Other</div><div>Material <input checked="" type="checkbox"/> Al Alloy <input type="checkbox"/> Cast iron</div><div>Enclosure <input type="checkbox"/> W.Proof <input checked="" type="checkbox"/> IP 65 <input checked="" type="checkbox"/> Tropicalized</div><div>Electrical <input type="checkbox"/> EEx-d <input checked="" type="checkbox"/> ATEX Ex II 3D T135°C</div><div>construct.</div><div>Class Div. Group</div><div>Feeding 24Vdc from PLC</div><div>CONNECTIONS</div><div>To well <input checked="" type="checkbox"/> 1/2" GAS-F <input type="checkbox"/></div><div>To conduit <input type="checkbox"/> M20 x 1,5 <input checked="" type="checkbox"/> 3/4" GAS-F</div><div>Process 1" NPT-M</div><div>Material flange</div><div>Terminals on terminal block</div><div><input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/></div><div>Terminal block material <input checked="" type="checkbox"/> Ceramic</div><div>Loading spring <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</div></div><div><div>Rev.</div><div>ELEMENT</div><div>Sheath material <input checked="" type="checkbox"/> AISI316 <input type="checkbox"/> INCONEL <input type="checkbox"/> NICKEL</div><div>Dimensions (O.D.) <input type="checkbox"/> 6,35 mm <input type="checkbox"/> M's Std</div><div>Insulation <input checked="" type="checkbox"/> Magnesium oxide</div><div>Scaling with resin <input type="checkbox"/> Ceramic</div><div>THERMOCOUPLE</div><div>Wire gauge Single <input type="checkbox"/> 18 AWG Double <input type="checkbox"/> 19 AWG</div><div>Characteristics <input type="checkbox"/> EN60584-2 <input type="checkbox"/> ISA " K "</div><div><input type="checkbox"/> Class 2 <input type="checkbox"/></div><div>Ungrounded hot junction <input type="checkbox"/></div><div>Grounded hot junction <input type="checkbox"/></div><div>RESISTANCE BULBS</div><div>Type <input type="checkbox"/> Standard <input checked="" type="checkbox"/> Type sensitive</div><div>Dimensions (o.d./length) <input type="checkbox"/> 3 x 30 mm</div><div>Characteristics <input type="checkbox"/> DIN 43760 <input checked="" type="checkbox"/> Pt 100 Ω</div><div><input checked="" type="checkbox"/> EN60751</div><div>Sealing bulb material <input checked="" type="checkbox"/> Glass <input type="checkbox"/> Ceramic</div><div>Lengths :</div><div></div></div></div> <table><tr><th>Rev.</th><th>Tag Number</th><th>Service & Location</th><th>INSTALLATION NOZZLE NUMBER</th><th>INSTALLATION PIPE SIZE</th><th>Transmitter Calibr. Range °C</th><th>Element Operating Temp. °C</th><th>Type Single Double</th><th colspan="2">Lengths mm</th><th>P&I Dwg.</th><th>Notes</th></tr><tr><td></td><td>TET 77.5</td><td>HOT AIR TO 77AT1</td><td></td><td></td><td>0 to 300</td><td>180</td><td><input type="checkbox"/> <input checked="" type="checkbox"/></td><td>450</td><td>150</td><td>1E35.10. 011</td><td>1-2</td></tr><tr><td></td><td>TET 77.7</td><td>ON 77AT1</td><td></td><td></td><td>0 to 200</td><td>100</td><td><input type="checkbox"/> <input checked="" type="checkbox"/></td><td>400</td><td>150</td><td>1E35.10. 011</td><td>1-2</td></tr><tr><td></td><td>TET 77.9</td><td>OUTLET 77S1</td><td></td><td></td><td>0 to 200</td><td>100</td><td><input type="checkbox"/> <input checked="" type="checkbox"/></td><td>500</td><td>150</td><td>1E35.10. 011</td><td>1-2</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/> <input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/> <input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/> <input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/> <input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/> <input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/> <input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/> <input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><input type="checkbox"/> <input type="checkbox"/></td><td></td><td></td><td></td><td></td></tr></table> <div><div>A = PT - PLATINUM 100 ohm 0°C</div><div>Note interne</div></div> <div><div>Remarks</div><div>1. Thermoresistance complete of with programmable transmitter 4-20 mA mounted into head 2 wires technology (HART CONFIGURABLE). PR</div><div>2. RTD complete with thermowell.</div></div> <div><div>Purchasing data</div><div>Manufacturer : STA</div><div>TT Model : PR</div><div>Supplier : STA</div><div>Order number : 100239</div></div>								Rev.	Tag Number	Service & Location	INSTALLATION NOZZLE NUMBER	INSTALLATION PIPE SIZE	Transmitter Calibr. Range °C	Element Operating Temp. °C	Type Single Double	Lengths mm		P&I Dwg.	Notes		TET 77.5	HOT AIR TO 77AT1			0 to 300	180	<input type="checkbox"/> <input checked="" type="checkbox"/>	450	150	1E35.10. 011	1-2		TET 77.7	ON 77AT1			0 to 200	100	<input type="checkbox"/> <input checked="" type="checkbox"/>	400	150	1E35.10. 011	1-2		TET 77.9	OUTLET 77S1			0 to 200	100	<input type="checkbox"/> <input checked="" type="checkbox"/>	500	150	1E35.10. 011	1-2								<input type="checkbox"/> <input type="checkbox"/>												<input type="checkbox"/> <input type="checkbox"/>												<input type="checkbox"/> <input type="checkbox"/>												<input type="checkbox"/> <input type="checkbox"/>												<input type="checkbox"/> <input type="checkbox"/>												<input type="checkbox"/> <input type="checkbox"/>												<input type="checkbox"/> <input type="checkbox"/>												<input type="checkbox"/> <input type="checkbox"/>				
Rev.	Tag Number	Service & Location	INSTALLATION NOZZLE NUMBER	INSTALLATION PIPE SIZE	Transmitter Calibr. Range °C	Element Operating Temp. °C	Type Single Double	Lengths mm		P&I Dwg.	Notes																																																																																																																																												
	TET 77.5	HOT AIR TO 77AT1			0 to 300	180	<input type="checkbox"/> <input checked="" type="checkbox"/>	450	150	1E35.10. 011	1-2																																																																																																																																												
	TET 77.7	ON 77AT1			0 to 200	100	<input type="checkbox"/> <input checked="" type="checkbox"/>	400	150	1E35.10. 011	1-2																																																																																																																																												
	TET 77.9	OUTLET 77S1			0 to 200	100	<input type="checkbox"/> <input checked="" type="checkbox"/>	500	150	1E35.10. 011	1-2																																																																																																																																												
							<input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																
							<input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																
							<input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																
							<input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																
							<input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																
							<input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																
							<input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																
							<input type="checkbox"/> <input type="checkbox"/>																																																																																																																																																