

Thermoelements

Our customized all type of thermocouples and thermoresistances cost effective, have fast response times, broad temperature ranges and can fit almost anywhere. We produce:

- Insert Thermocouples (all types)
- Insert Thermoresistances (all types)
- Miniaturized Thermocouples
- High Temperature Thermocouples
- Cryogenic Temperature Thermocouples



Threaded well are available with a straight shank for longer wear and tapered to limit flow restrictions.



Skin thermocouples provide an efficient means of temperature measurement of tube walls in petrochemical plants and of boiler and super heater tubes in power plants. Made of metal sheath, MgO insulated thermocouple wire can vary from just a few feet to over 50. Shields may be added which curve around the pipe and over the junction and packed with a high temperature insulation to prevent heat from being transferred away from the junction thereby providing a more accurate temperature measurement. Expansion loops or coils compensate for movement as the tubes are subject to thermal growth. Mounting clamps can be welded along the pipe for additional security. Mesit fabricates tube skin thermocouples to the requirements based on your installation drawings.

- Ambient Thermoelements
- Skin Thermocouples
- High Pressure Thermocouples
- Multipoint Thermocouples
- Nuclear In-Core Thermocouples

We also provide a calibration service ISO 5167 e ASME PTC6.



The **gasket thermocouple** can be attached to a stud welded to a surface or with a nut and bolt. The measuring junction is in effect the entire gasket area. Most frequently used to monitor surface temperature of machinery and engines.





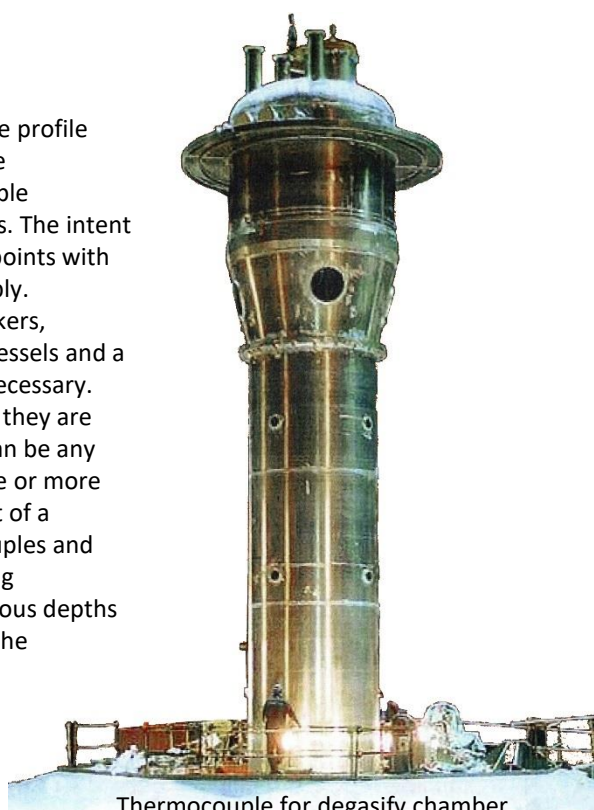
FERTILIZE REACTOR MESAIEED QATAR



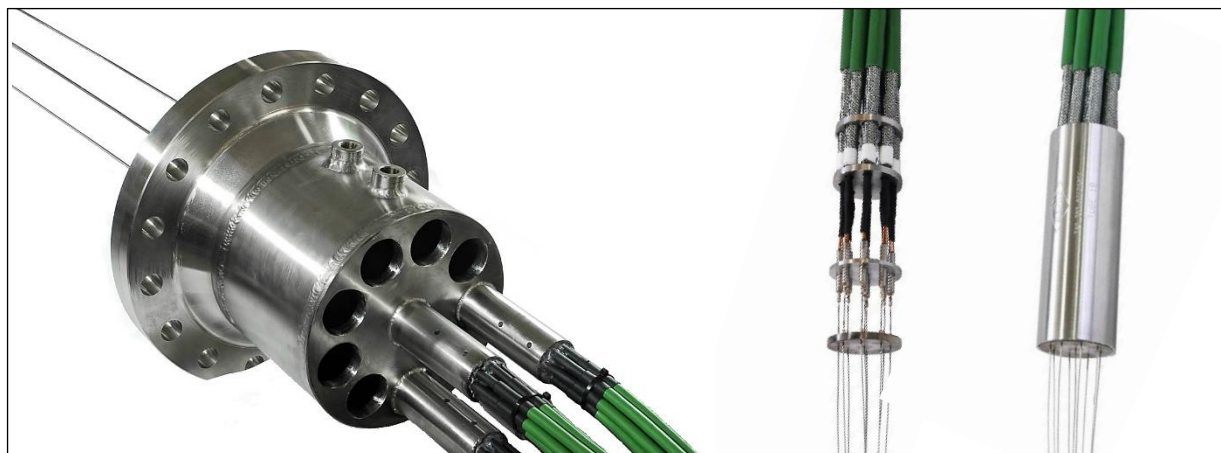
Multipoint thermocouples installed on **Mesaieed Fertilize urea reactor** for **Saipem** and **Hyundai**. The **QAFCO-6** expansion with a designed capacity of 3,800 MTPD of urea **required 62 different points of measurement**. QAFCO has become the world's largest single site urea producer increasing the company's annual production capacity to 5.6 million metric tons.



Very often there is a need to measure a temperature profile across a large tank or vessel. The method used is the Multicouple which is an arrangement of thermocouple positions with measuring junctions at various depths. The intent is to monitor a number of temperatures at various points with all thermocouples or RTD's contained in one assembly. Multipoint thermocouples are used in catalytic crackers, limekilns, distillation columns, pressurized reactor vessels and a host of other applications where such profiles are necessary. These type assemblies can be "miniaturized" where they are three feet long with two or three sensors, or they can be any length, even over one hundred feet long with twelve or more sensors. Multipoint thermocouples generally consist of a junction box suitable for terminating the thermocouples and joining them to cables running back to the measuring instrument, the thermocouples arrangement at various depths and a pipe protection well capable of withstanding the pressures and corrosives in the vessel.



Thermocouple for degasify chamber



Certifications

CERTIFICATE MOST RELIABLE 1A



Mesit operates according to the international standard: NFPA, ISO, ASTM, ASME, ATEX PED, UE, CENELEC, GOST, with fire protection products certified UL/ULC, FM, GOST. Our Quality Assurance System is described in full details in a comprehensive set of documents: "The Quality Assurance Manual", which includes operating procedures and instructions. Mesit has a huge certifications quality assurance starting from Bureau Veritas, SGS Lloyds-RINA Register and:

- ISO 9001:2015
- ISO 14001:2015
- ISO 45001:2018
- 2014/34/UE (ATEX)
- 2014/68/UE (PED)
- ABSA, RINA, GOST, TR CU
- Cl.1 And IEEE 323 for NPP in-core Thermocouples and Thermoelements system design, manufacturing and installation certification
- thermocouples and heating cables irradiation test for the PEC Experimental Reactor (Brasimone-ENEA)
- thermocouples and heating cables irradiation test (1000 Mrad) at the PEC Experimental Reactor part of the Super-Phoenix Project (Brasimone-ENEA)
- design, engineering calculations and Stress Analysis Reports According to ASME III NB (Class 1 components) Doel IV and Tihange III (Belgium), Cernavodă (Romania)
- Calibration
- Welding 5F-6G in compliance with ASME IX on nuclear reactors Doel IV and Tihange III
- Classified temperature and flow measurement elements Mochovce NPP (Bratislava)
- Fiscal feed-water Venturi tubes and flow nozzles
- DUNS n. 434656344



MAIN QUALIFICATIONS



UKAS Calibration
Bureau Veritas Certification

MESIT SRL

Via Valerio, snc - 25059 VEZZA D'OGLIO (BS) - Italy

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in conformance with the requirements of the management system standards detailed below

ISO 9001:2018

Scope of certification

Manufacturing and inspection of temperatures, flow, pressure and level measuring systems monitoring by means of mechanical components, welding and assembly operations.
SAP - 19

Original cycle start date:

01-October-2020

Expiry Date of Previous Cycle:

24-May-2021

Certification / Recertification audit found:

20-April-2021

Certification / Recertification cycle start date:

17-May-2021

Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on:

24-May-2024

Certificate No.: **IT730429**

Version: **1**

Issue Date:

17-May-2021

Organisation previously certified: ONIAS 1800 since: **28 October 2012**

Signed on behalf of BUREAU VERITAS UK Branch

0001

Certification Body Address: 20/F, Place, 69, Piccadilly Street, London, E1 1AG, United Kingdom
Local Office: Bureau Veritas Gate 4 - A - Via Milano, 347 - 20120 Milano, Italy

Further information regarding the process and validity of this certificate, and the applicability of our management system requirements, please visit: ukas.com

Page 1 of 1

PASCAL

No. 09-0687
Via Joranda 12 - 30131 CORTINA D'AMPEZZO
tel.: 0434/881111 fax: 0434/881110
www.mechanics.com

ATTESTATO APPROVAZIONE SISTEMA GARANZIA QUALITA' TOTALE
Total Quality System Approval Certificate
(Module H)
N° 018 - 97/23/CE-H Rev. 1
FOGLIO 1 / 2

PASCAL
ORGANISMO NOTIFICATO N. 1115
Notified Body n. 1115

Pascal, visto l'esito delle verifiche condotte in conformità all'allegato III della Direttiva 97/23/CE, modulo H, attesta che il sistema qualità applicato dal fabbricante per la progettazione, lo fabbricazione, l'ispezione finale e la prova delle attrezzature a pressione di seguito elencate, soddisfa le richieste della direttiva stessa.

Pascal, on the basis of the assessment performed in accordance to the annex II of the directive 97/23/EC, Module H, attests that the Quality Management System operated by the Manufacturer for design, manufacturing, final inspection and tests of the under-listed pressure equipment satisfies the applicable directive provisions.

Fabb./banca/Machineries/
MERT S.r.l.
Corso Italia, 18
20122 Milano (MI)

Per i seguenti modelli / for the following products:

DISPOSITIVI PER MISURA DI PORTATA BASATI SUL PRINCIPIO DELLA MISURA DELLE PRESSIONI DIFFERENZIALI

Vedere l'allegato I per i termini dei prodotti.
See Annex I for details of the products

Prima emissione / First issue:
data / date: 80/10/2005

Emissione corrente /
date / date: 07/11/2005

CASAPAR
Data: Ing. Massimo De Santis
PASCAL NR. 14457



ATTESTATO APPROVAZIONE SISTEMA GARANZIA QUALITA' TOTALE
Total Quality System Approval Certificate
(Module H)
N° 016 - 97/23/CE-H Rev. 1
FUGGIO 2 / 3

Autocollante ISO 9001
 Via G. Cesare, 12 - 20051 Milano
 Tel. 02/760001 - 02/760002
 FAX 02/760003
 E-MAIL: info@pascal.it

ALLEGATO I

Descrizione	Dimensioni	ISO 9001	Eccellenza	Maturità	TQM
Tutte le fasi Ciclo Produkt	1. Analisi iniziale (pagina 95)	30/27	53,5/50	10	10
	2. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	3. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	4. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	5. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
Tutte le fasi Ciclo Produkt	6. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	7. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	8. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	9. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	10. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
Tutte le fasi Ciclo Produkt	11. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	12. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	13. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	14. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	15. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
Tutte le fasi Ciclo Produkt	16. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	17. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	18. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	19. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	20. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
Tutte le fasi Ciclo Produkt	21. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	22. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	23. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	24. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	25. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
Tutte le fasi Ciclo Produkt	26. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	27. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	28. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	29. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	30. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
Tutte le fasi Ciclo Produkt	31. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	32. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	33. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	34. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	35. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
Tutte le fasi Ciclo Produkt	36. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	37. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	38. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	39. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	40. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
Tutte le fasi Ciclo Produkt	41. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	42. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	43. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	44. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	45. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
Tutte le fasi Ciclo Produkt	46. Analisi Iniziale (pagina 95)	30/27	53,5/50	10	10
	47. Analisi Iniziale (pagina 95)	30/27			

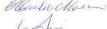
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RINA

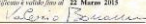
MESIT S.r.l.

QUALIFICATION REPORT OF TEMPERATURE ELEMENTS SAFETY
CLASSIFIED CLASS III/ FOR THE UNIT 3 & 4 OF MOCHOVCE NPP
REV.00

	DATA	SIGLA/NOME	FIRMA
PREPARATO	30/09/2011	Ing. Marco Genova	
VERIFICATO	30/09/2011	Ing. Claudio Mazzilli	
APPROVATO	30/09/2011	Ing. Mauro Cuntoli	

 CERTIFICATO DI OMOLOGAZIONE DI TIPO S. ELLEQD99CS 	
Si certifica che il seguente prodotto soddisfa alle prescrizioni del norme EN610 per l'omologazione di tipo.	
Descrizione	Sensori di temperatura
Tipologia	Trantermistore: TE-S84-B/TR; TE-S14-B/TR; Termopila: TE-S84-B/T/C; TE-S14-K/C/C
Richiedente	MSST SRL Località Vistara 25059 Vezza D'oglio (Bs) ITALIA
Fornitrice	MSST SRL Località Vistara 25059 Vezza D'oglio (Bs) ITALIA
Luogo di produzione	
Norme di riferimento	Norme per la Classificazione delle Parti - (IEC 584, IEC 751)

Rilasciato a: Genova il 22 Marzo 2018 *Questo Certificato è valido fino al 22 Marzo 2021*


 Sott.

Vittorio Bonanni

Questo Certificato è composto di 1 pagina di 1 riepilogo

IRPA
International Register of Professional Architects

8410 - 29 Ave NW
Edmonton, Alberta, Canada T6H 5A4
Tel: (780) 437-5100 / Fax: (780) 437-7717

January 23, 2008

Dear Mr. Capelin:

Re: **MEIST MITTEL EUROPEAN SERVICES**
INTERIOR DESIGN
Via a CELP 21/26048
EDLO 65, ITALY

Please Permit Capelin.

The drawings, specifications and/or information received on March 16, 2007 are accepted to registration as follows:

CEN# : Q106820 2 Accepted on: January 03, 2008
Tracking No. : 2007-0682 Expiry Date: January 03, 2018

Registration Type : New Design
Drawing No.: 1-3-402/07 New 1-A Noted
Filing Date: THERMOWELLS

The registration is conditional on your compliance with the following notes:

- 1. The scope of this registration includes thermowells (discreetness and materials) shown on drawings (DLO-01) and 2, 3, 4 and 5.
- 2. The maximum design temperature is 212 deg. F. This is the smaller value of design temperature specified in the drawing for thermowell (para. 1) and for 2, 3, 4 and 5.
- 3. The therm MASSP is the smaller MASSP value of thermowell (para. 1) and for 2, 3, 4 and 5.
- 4. The therm MASSP value is the thermowell (para. 1) and for 2, 3, 4 and 5. The therm MASSP value is the thermowell (para. 1) and for 2, 3, 4 and 5.
- 5. The therm MASSP value is the thermowell (para. 1) and for 2, 3, 4 and 5.

The information contained on this drawing, and the corrected values must be used.

See the understanding that the maximum design metal temperature (MOMT) is 350 deg. F. See paragraph UG-100, of ASME BPV Code, Section VIII, div. 1.

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts. Enclosed are stamped permits for your reference.

Sincerely,

SINIC, DAVID P. Jr., EIT
Manager, Design Survey

Bureau Veritas Certification

MESIT S.R.L.

Piazza Duca D'Aosta, 12 - 20126 MILANO (MI) - Italy

Certified for:

Via Vesuvio, nro - 20089 VEZZA D'OSIO (BG) - Italy

Rome, Veritas Italia S.p.A. certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the management system standard detailed below.

ISO 9001:2015

Scope of certification

Design and production of measurement systems. Sales of electrical and electronic components, control and automation systems.

UAF profile: 98.29

Original copy date:

15-April-2010

Expiry date of previous cycle:

11-May-2011

Certification / Recertification Audit date:

11-March-2011

Certification / Recertification cycle start date:

15-April-2011

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on:

11-May-2014

Certificate No.: IT200734

Version: 1 Issue Date:

15-April-2011

GIORGIO LANFEARI - Local Technical Manager

Certificate valid address:

Bureau Veritas Italia S.p.A., Viale Monza, 349 - 20138 Milano, Italy

ACCREDITED TO THE
EUROPEAN STANDARD
EN ISO 9001:2015
FOR THE SCOPE OF THE CERTIFICATE

Further certification regarding the scope of the certificate and any amendments of the management system represents the responsibility of certifying the organization.

To reach this certificate validity please visit the website www.bureauveritas.it