



ELETTROTEC®

REGOLATORI A DOPPIA SOGLIA CONFIGURABILE
SERIE **ETR121 - ETR141**

*DOUBLE SET-POINT CONTROLLERS
ETR121 - ETR141 SERIES*





ETR121 - Regolatori a doppia soglia configurabile con display a 3 digit

ETR121- Controllers with double programmable set-point and 3-digit display

Regolatore a doppio punto di intervento con ampio visualizzatore a 3 digit. Ingresso analogico selezionabile: termocouple tipo J, K, S, R e termoresistenze PT100, PTC 1K, NI100, NTC 10K (mercato del freddo) e PT500/PT1000 (molto usate nel condizionamento); segnali normalizzati 0...10V, 0...20mA, 4...20mA. Possibilità di leggere potenziometri lineari da 6K Ω e da 150K Ω (valori di fondoscala), con funzionalità "Latch-On" di taratura veloce, impostazione di minimo, massimo e zero da tastiera. I modelli ETR121 sono dotati di 2 punti di intervento, uno di comando e uno di allarme, correlabili a 2 uscite relé o all' SSR. I due relé sono da 8A o 10A per l'uscita principale (8A nella versione con trasformatore interno a 24, 115 o 230Vca e 10A nella versione con alimentazione switching 12...24Vca/Vcc) e da 5A per l'uscita allarme. Configurazione in serie più veloce e sicura grazie a Memory Card aggiuntiva.

Software con algoritmi di regolazione ON/OFF, PID e Autotuning, funzionalità PID caldo + PID freddo con banda morta. E' inoltre disponibile una versione a singola uscita (Relé/SSR) con in opzione la seriale RS485, protocollo ModBus RTU/Slave, adatta a gestire impianti centralizzati. Il contenitore è realizzato con tasti in gomma che consentono un buon effetto tattile.

DATI TECNICI

Contenitore:	35 x 77 (frontale) x 60 mm
Alimentazione:	12...24Vca - 24Vca - 115Vca - 230Vca - 12...35Vcc
Consumo:	2W
Display:	3 digit rossi, LED verdi, punto decimale
Temperatura ambiente:	0...40°C
Umidità:	35...95rH%
Ingressi:	1 ingresso selezionabile per TC K - R - J - S - PT100 - NI100 - PT500 - PT1000 - PTC - NTC - 0/4...20mA - 0..10V e Potenziometri $\leq 6K\Omega$, $\leq 150K\Omega$
Uscite:	Principale - Relé da 10A (versione AD) Principale - Relé da 8A (versioni A - B - C) Allarme - Relé 5A (versioni AD - A - B - C) Comando/allarme SSR (tutte le versioni) Seriale RS485 - Protocollo ModBus RTU/Slave (versioni ADT - AT)
Regolazione:	ON/OFF, PID + Autotuning, PID caldo + PID freddo
Precisione:	0,5% ± 1 digit per TC/RTD; 0,2% ± 1 digit per V/I
Tempo di acquisizione:	66ms
Protezione:	IP54 frontale - IP30 contenitore - IP20 morsettiera
Configurazione:	parametri protetti da password con Memory Card per produzione in serie

SETTORI DI APPLICAZIONE

- Industria alimentare
- Piccoli forni
- Refrigerazione
- Sterilizzatori
- Unità di sicurezza
- Macchine per calzature
- Iniezione plastica
- Essiccazione
- Camere climatiche

Double set-point controller with wide 3-digit display. Input is configurable for thermocouples type J - K - S - R, PT100, PTC 1000 Ohm, NI100, NTC 10K (typically used in the refrigeration industry) and PT500/PT1000 (widely used in air-conditioning); signals 0...10V, 0...20mA, 4...20mA. Potentiometers 6K Ω and 150K Ω can be also read using function "Latch-On" for quick calibration and setting of minimum, maximum and zero by frontal keys.

Two set-points are available, one for command and one for alarm function, and two outputs are configurable by parameter as relay or SSR control. Main relay is 8A (on models with internal transformer 24 or 115 or 230Vac) or 10A (on models with internal switching 12...24Vac/Vdc). The alarm relay is 5A. An optional Memory Card enables quick configuration, reducing error margin.

Software features include ON/OFF or PID + Autotuning control and Heating-Cooling PID with neutral zone. A single output (relay/SSR) version is available with serial communication RS485 and ModBus RTU/Slave protocol for application with supervisory systems. Housing has been designed with very sensitive operation keys.

SPECIFICATIONS

Housing:	35 x 77 (frontal) x 60 mm
Power Supply:	12...24Vac - 24Vac - 115Vac - 230Vac - 12...35Vdc
Power Consumption:	2W
Display:	3 red digits, green LEDs, decimal point
Operating Conditions:	0...40°C
Humidity:	35...95rH%
Inputs:	1 configurable input for TC K - R - J - S - PT100 - NI100 - PT500 - PT1000 - PTC - NTC - 0/4...20mA - 0..10V and Potentiometers $\leq 6K\Omega$, $\leq 150K\Omega$
Outputs:	Control relay 10A (AD model) Control relay 8A (A - B - C models) Alarm relay 5A (AD - A - B - C models) SSR command/Alarm (all models) Serial RS485, ModBus RTU/Slave protocol (ADT - AT models)
Control Action:	ON/OFF, PID + Autotuning, Heating/Cooling PID
Accuracy:	0,5% ± 1 digit for TC/RTD; 0,2% ± 1 digit for mA/V
Sampling Time:	66ms
Protection:	IP54 frontal - IP30 housing - IP20 terminal board
Configuration:	parameters protected by password; Memory Card for quick configuration and serial production

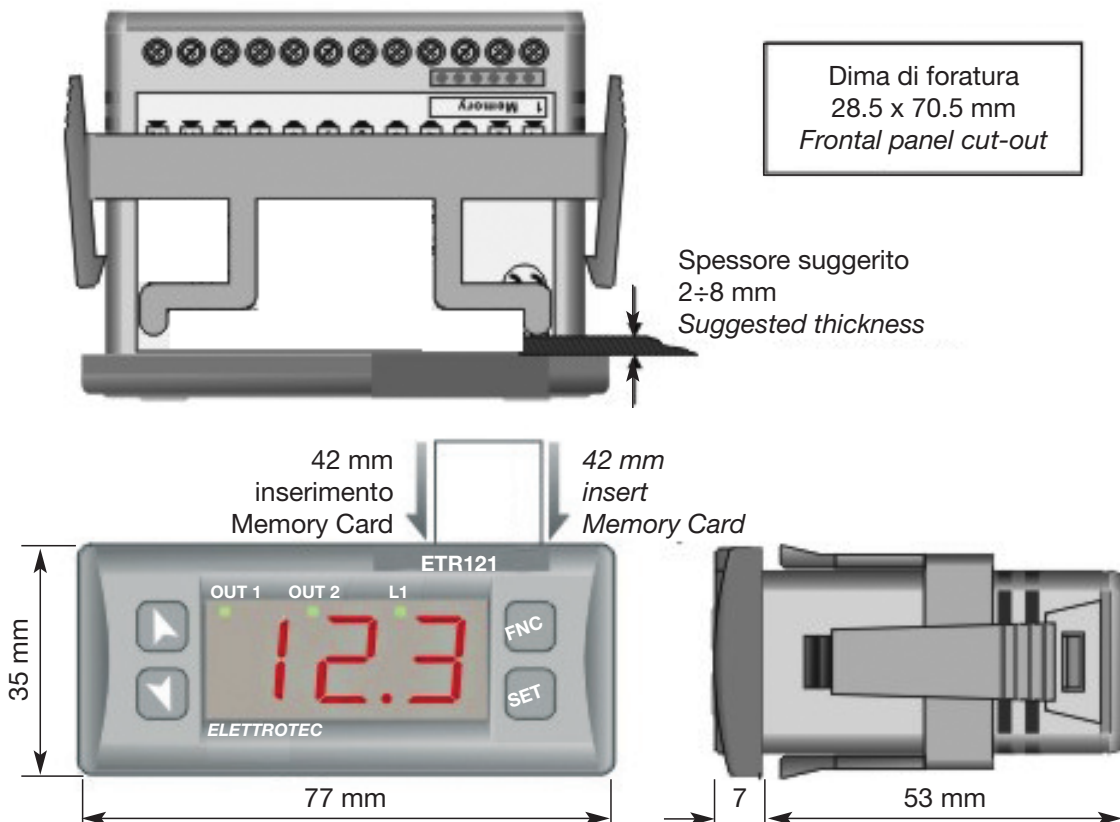
MAIN APPLICATIONS

- Food Industry
- Ovens/Furnaces
- Refrigeration
- Sterilizers
- Safety Units
- Footwear Machinery
- Injection molding
- Dryers
- Environmental Chambers

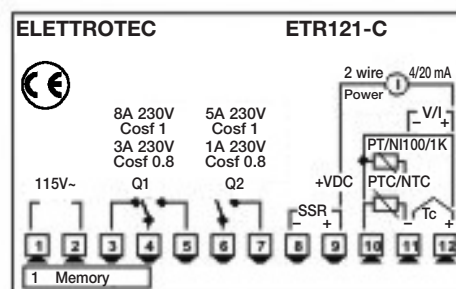
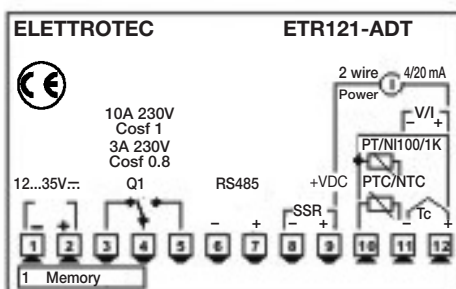
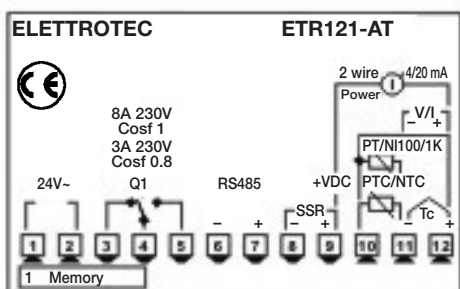
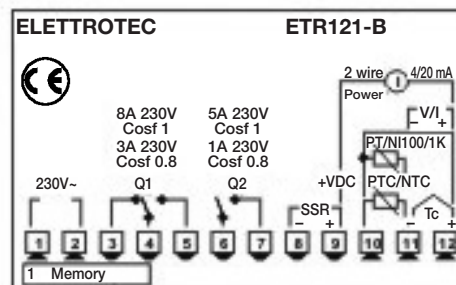
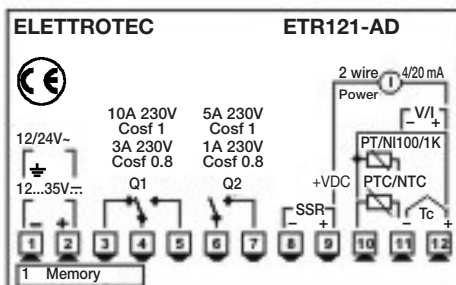
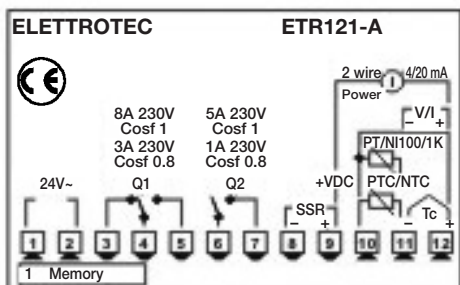


ETR121 - Dimensioni e installazione

ETR121 - Size and installation



Modello / Model:



MODELLO / MODEL	INPUTS	OUTPUTS	ALIMENTAZIONE/POWER SUPPLY
ETR121-A	Configurabile/Selectable	2 Relays + SSR	24Vac+/-10% 50/60Hz
ETR121-AT		1 Relays + SSR + Serial	
ETR121-AD		2 Relays + SSR	12...24Vac+/-10% 50/60Hz 12...35Vdc
ETR121-ADT		1 Relays + SSR + Serial	
ETR121-B		2 Relays + SSR	230 Vac +/-10% 50/60 Hz
ETR121-C		2 Relays + SSR	115 Vac +/-10% 50-60 Hz



ETR141 - Regolatori a doppia soglia configurabile con display a 4 digit

ETR141- Controllers with double programmable set-point and 4-digit display

Regolatore a doppio punto di intervento con ampio visualizzatore a 4 digit. Ingresso analogico selezionabile: termocoppie tipo J, K, S, R e termoresistenze PT100, PTC 1K, NI100, NTC 10K (mercato del freddo) e PT500/PT1000 (molto usate nel condizionamento); segnali normalizzati 0...10V, 0...20mA, 4...20mA. Possibilità di leggere potenziometri lineari da 6K Ω e da 150K Ω (valori di fondo-scala), con funzionalità "Latch-On" di taratura veloce, impostazione di minimo, massimo e zero da tastiera.

Modello particolarmente adatto per forni ad alta temperatura (superiore a 1000°C) e per applicazioni con inverter (dove ad esempio è utile rappresentare il numero di giri di un motore sfruttando il fondo scala a 9999 dell'ingresso normalizzato). Dotato di 2 punti di intervento, uno di comando e uno di allarme, correlabili a 2 uscite relé o all'SSR. I due relé sono da 8A o 10A per l'uscita principale (8A nella versione con trasformatore interno a 24, 115 o 230Vca e 10A nella versione con alimentazione switching 12...24Vca/Vcc) e da 5A per l'uscita allarme. Configurazione in serie più veloce e sicura grazie a Memory Card aggiuntiva.

Software con algoritmi di regolazione ON/OFF, PID e Autotuning, funzionalità PID caldo + PID freddo con banda morta. Prevista versione a singola soglia di comando/allarme ma con seriale di comunicazione RS485 (su 2 modelli con alimentazione 12...35Vcc oppure 24Vca). Risulta semplice realizzare reti di visualizzazione, controllo e registrazione da software tipo Scada o PLC con protocollo ModBus.

DATI TECNICI

Contenitore:	35 x 77 (frontale) x 60 mm
Alimentazione:	12...24Vca - 24Vca - 115Vca - 230Vca - 12...35Vcc
Consumo:	2W
Display:	4 digit rossi, LED verdi, punto decimale
Temperatura ambiente:	0...40°C
Umidità:	35...95rH%
Ingressi:	1 ingresso selezionabile per TC K - R - J - S - PT100 - NI100 - PT500 - PT1000 - PTC - NTC - 0/4...20mA - 0...10V e Potenziometri $\leq 6K\Omega$, $\leq 150K\Omega$
Uscite:	Principale - Relè da 10A (versione AD) Principale - Relè da 8A (versione A - B - C) Allarme - Relè 5A (versione AD - A - B - C) Comando/allarme SSR (tutte le versioni) Seriale RS485 - protocollo ModBus RTU/Slave (versioni ADT - AT)
Regolazione:	ON/OFF, PID + Autotuning, PID caldo + PID freddo
Precisione:	0,5% ± 1 digit per TC/RTD; 0,2% ± 1 digit per V/I
Tempo di acquisizione:	66ms
Protezione:	IP54 frontale - IP30 contenitore - IP20 morsettiera
Configurazione:	parametri protetti da password con Memory Card per produzione in serie

SETTORI DI APPLICAZIONE

- Forni alta temperatura
- Visualizzatori per inverter
- Visualizzatori per potenziometri lineari
- Unità di sicurezza
- Macchine per calzature
- Iniezione plastica
- Essiccazione

Double set-point controller with wide 4-digit display. Input is configurable for thermocouples type J - K - S - R, PT100, PTC 1000 Ohm, NI100, NTC 10K (typically used in the refrigeration industry) and PT500/PT1000 (widely used in air-conditioning); signals 0...10V, 0...20mA, 4...20mA. Potentiometers 6K Ω and 150K Ω can be also read using function "Latch-On" for quick calibration and setting of minimum, maximum and zero by frontal keys.

Particularly suitable for high-temperature applications (above 1000°C) and for reading of inverters (upper limit of linear input 9999).

Two set-points are available, one for command and one for alarm function, and two outputs are configurable by parameter as relay or SSR control. Main relay is 8A (on models with internal transformer 24 or 115 or 230Vac) or 10A (on models with internal switching 12...24Vac/Vdc). The alarm relay is 5A. An optional Memory Card enables quick configuration, reducing error margin. Software features include ON/OFF or PID + Autotuning control and Heating-Cooling PID with neutral zone. A single relay version is also available with serial communication RS485 (supply 12...35Vdc or 24Vac) allowing installation within supervisory systems for visualization/monitoring/data logger functions or communication with SCADA systems or PLC via ModBus protocol.

SPECIFICATIONS

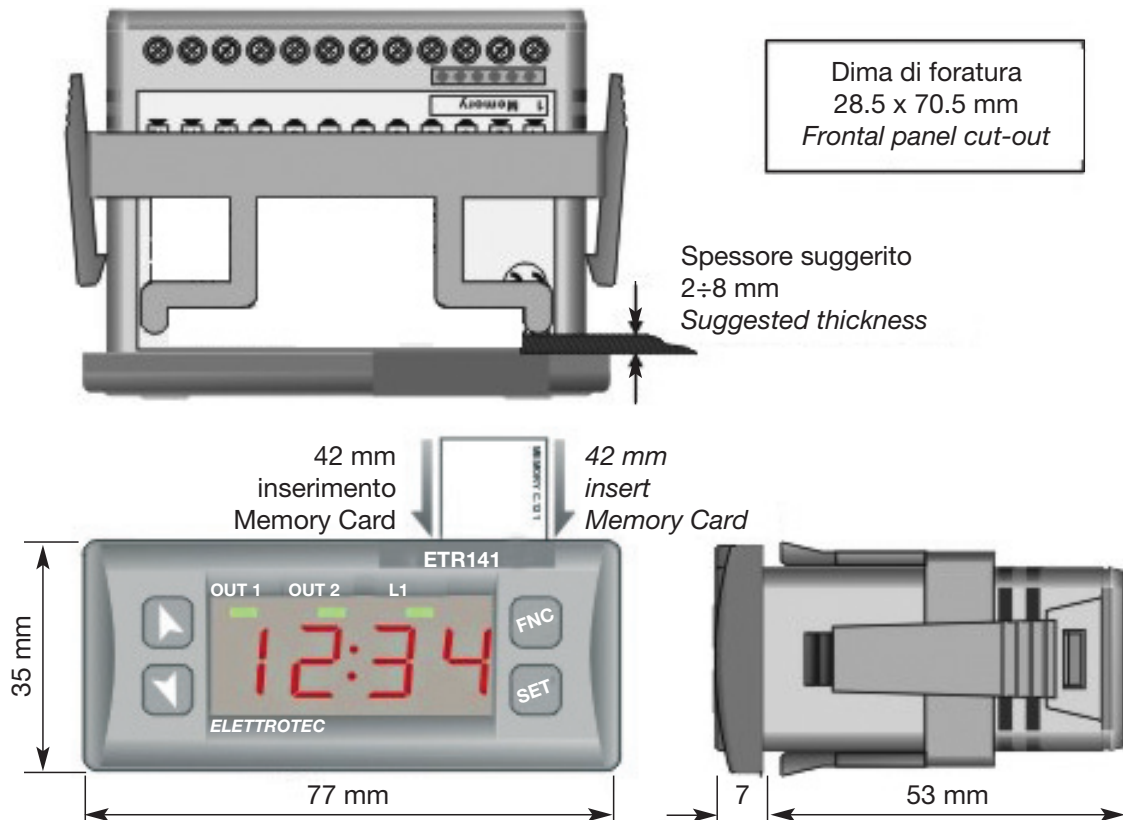
Housing:	35 x 77 (frontal) x 60 mm
Power Supply:	12...24Vac - 24Vac - 115Vac - 230Vac - 12...35Vdc
Power Consumption:	2W
Display:	4 red digits, green LEDs, decimal point
Operating Conditions:	0...40°C
Humidity:	35...95rH%
Inputs:	1 configurable input for TC K - R - J - S - PT100 - NI100 - PT500 - PT1000 - PTC - NTC - 0/4...20mA - 0...10V and Potentiometers $\leq 6K\Omega$, $\leq 150K\Omega$
Outputs:	Control relay 10A (AD model) Control relay 8A (A - B - C models) Alarm relay 5A (AD - A - B - C models) SSR command/Alarm (all models) Serial RS485, ModBus RTU/Slave protocol (ADT - AT models)
Control Action:	ON/OFF, PID + Autotuning, Heating/Cooling PID
Accuracy:	0,5% ± 1 digit for TC/RTD; 0,2% ± 1 digit for mA/V
Sampling Time:	66ms
Protection:	IP54 frontal - IP30 housing - IP20 terminal board
Configuration:	parameters protected by password; Memory Card for quick configuration and serial production

MAIN APPLICATIONS

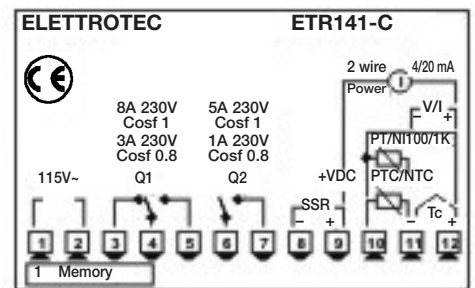
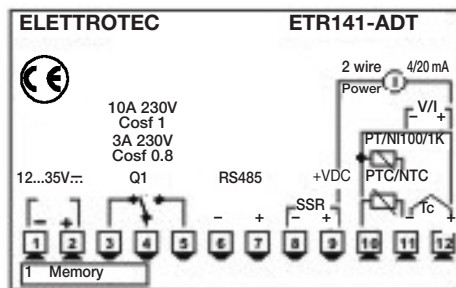
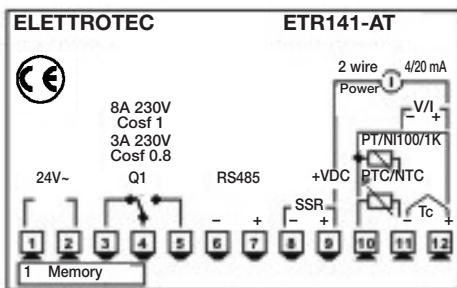
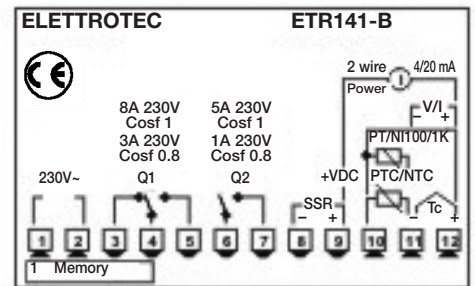
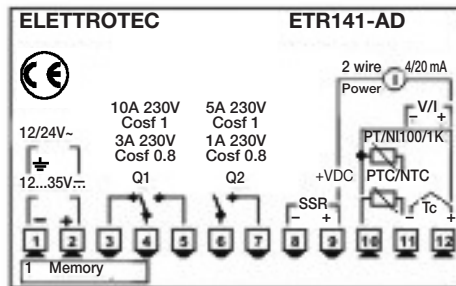
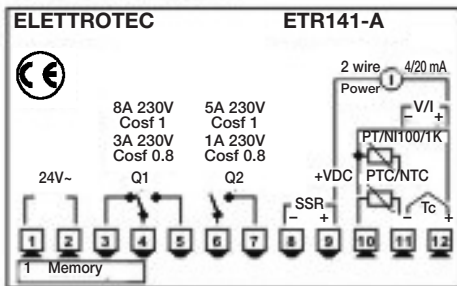
- Very high-temperature
- Inverters
- Potentiometers
- Safety Units
- Footwear Machinery
- Injection molding
- Dryers

ETR141 - Dimensioni e installazione

ETR141 - Size and installation

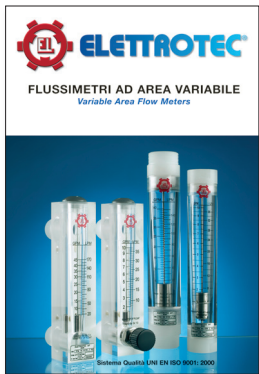
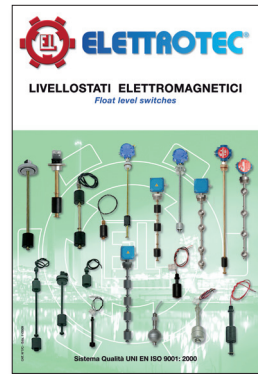


Modello / Model:



MODELLO / MODEL	INPUTS	OUTPUTS	ALIMENTAZIONE/POWER SUPPLY
ETR141-A	Configurabile/Selectable	2 Relays + SSR	24Vac+/-10% 50/60Hz
ETR141-AT		1 Relays + SSR + Serial	
ETR141-AD		2 Relays + SSR	12...24Vac+/-10% 50/60Hz 12...35Vdc
ETR141-ADT		1 Relays + SSR + Serial	
ETR141-B		2 Relays + SSR	230 Vac +/-10% 50/60 Hz
ETR141-C		2 Relays + SSR	115 Vac +/-10% 50-60 Hz





- Disponibile catalogo generale su CD-ROM
- CD-ROM master catalogue also available.

Azienda / Company _____

Via / Address _____ CAP / ZIP _____

Città / Town _____ Stato / Country _____

Tel. / Phone _____ Fax _____ Email _____

Settore / Company activity _____

Nome / Name _____ Cognome / Surname _____

Posizione / Title _____

Inviare a / Send to ELETTRROTEC S.r.l. - Via Jean Jaurés, 12 - 20125 Milano - Italy oppure al no. / or fax to: **+39 0228851854**



ICIM
CERTIFICATO
CERTIFICATE No. 015815

SE CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITÀ DI
ME MEMBERS CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATES BY

ELETTROTEC S.r.l.

UNI EN ISO 9001:2000

Per le seguenti attività:
EA: 19

Progettazione e produzione di pressostati, flussostati,
livellatori, trasduttori di pressione e trasduttori di livello.
Design and production of pressure switches, flow switches and
indicators, float level switches, pressure transducers, level sensors.

Emesso in conformità con il regolamento CE 2003/98
Emissione conforme 15/04/2010
Data di scadenza 10/12/2011

ICIM S.p.A. - PIAZZA S. PIETRO 2 - 20123 MILANO

www.icimcertification.com



IQNet
THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and its partner
CISO/ICIM
hereby certify that the organization

ELETTROTEC S.r.l.
Via Jean Jaurés, 12 - I-20125 Milano (MI)

for the following field of activities
Design and production of pressure switches, flow switches and
indicators, float level switches, pressure transducers, level sensors.
has implemented and maintains a
Quality Management System
which fulfills the requirements of the following standard

ISO 9001:2000
Issued on: 2008-12-11
Validity date: 2011-12-10
Registration Number: IT-3655

René Wanner, President of IQNET
Giuseppe Prati, President of CISO

www.iqnet-certification.com

CESI NOTIFICATION

PRODUCTION QUALITY ASSURANCE NOTIFICATION

- Equipment or Protective System or Component intended for use in potentially explosive atmospheres Directive 94/9/EC
- Notification number: **CESI 05 ATEX 107 Q**
- Equipment or component type: Level switches, Pressure measurement devices, Level sensors, Vacuum switches
- Protection concepts: Intrinsic safety "i", Flameproof enclosures "d", Dust ignition protection "ED"
- Applicant: Elemtrotec S.r.l., Via Jean Jaurés, 12, 20125 Milano - MI
- Manufacturer: Elemtrotec S.r.l., Via Jean Jaurés, 12, 20125 Milano - MI

CESI notified body n. 0722 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, declares to the applicant that the actual manufacturing has a production quality system which complies to Annex IV of the Directive.

This notification is based on audit report n. EX-AR035216 issued the 28/11/2008.

This notification can be withdrawn if the manufacturer no longer satisfies the requirement of Annex IV.

Results of periodic re-assessment of the quality system are a part of this notification.

This notification is valid until 5/12/2011 and can be withdrawn if the Manufacturer does not satisfy the production quality assurance re-assessment.

According to Article 10 [1] of the Directive 94/9/EC the CE marking shall be followed by the identification n. 0722 identifying the notified body involved in the production control stage.

This notification may only be reproduced in its entirety and without any change.

Translation of Revision 01 of Notification
Date of translation: 1st December 2005
Date of recovery: 5th December 2005

Prepared: Sergio C. Giugno
Verified: Mirko Balaz
Approved: Firenze Reggiani

TYPE APPROVAL CERTIFICATE
No. ELE02810CS001

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

Description Type	Pressure switches and Vacuum switches
Applicant	ELETTROTEC S.r.l. Via Jean Jaurés, 12 20125 Milano ITALY
Manufacturer	ELETTROTEC S.r.l. Via Jean Jaurés, 12 20125 Milano ITALY
Place of manufacture	Italy
Reference standards	Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.

Issued in Genoa on February 1, 2010. This Certificate is valid until February 1, 2015.

Valerio Bonanni, RINA

TYPE APPROVAL CERTIFICATE
No. ELE02810CS002

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

Description Type	Magnetic float level switches
Applicant	ELETTROTEC S.r.l. Via Jean Jaurés, 12 20125 Milano ITALY
Manufacturer	ELETTROTEC S.r.l. Via Jean Jaurés, 12 20125 Milano ITALY
Place of manufacture	Italy
Reference standards	Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.

Issued in Genoa on February 1, 2010. This Certificate is valid until February 1, 2015.

Valerio Bonanni, RINA

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No. 99 348 - 97/H
Company: ELETTROTEC S.R.L.
Via Jean Jaurés 7
I-20125 Milano

Product Description: Magnetic Level Indicator

Technical Data / Range of Application	Type: LMCFPA, LMCFPA-CTA, LMCFPA-CTA, LMCFPA-CTA, LMCFPA-CTA, LMCFPA-CTA, LMCFPA-CTA, LMCFPA-CTA, LMCFPA-CTA, LMCFPA-CTA
Environmental Category	C
Max. length	1500 mm
No. floats	1
Contact	1 n.c (n/c)
Temp. range	-10 to 80°C
Fluid specific weight	> 0,7
Max. pressure	15bar
Output	reed contact(s) n/c (n/c)-rating: 220V 50Hz 0,1A 50VA or 10-rating: 220V 50Hz 0,1A 50VA
Degree of protection	IP 65
A protection circuit has to be used for some resistive load.	

Test Standard: Guidelines for the Performance of Type Approvals, Issue 2003

Documents: Test reports: RP 3072 FIA 84 of Sept. 1994, RP 1989 FIA 92 of June 1992, Catalogue Cal.N. TO ENZ, 1796

Remarks: For tube length >400mm has to be provided 1 additional fitting point and for tube length >1000mm has to be provided 2 additional fitting points.

Valid until: 2011-05-28
Page: 1 of 1
File No.: 1.02.03
Hamburg, 2008-06-13

Germanischer Lloyd
Wolfgang Voß, Helmut Klapp

Lloyd's Register

Type Approval Certificate Extension

This is to certify that Certificate No. 96/00039(E1) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

PRODUCER: Elemtrotec Srl
PLACE OF PRODUCTION: Via Jean Jaurés, 12, 20125 Milan, Italy
DESCRIPTION: Elektromagnetic level indicators
TYPE: LM Series
APPLICATION: Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2 and ENV3 as defined in LR Test Specification No. 1.1996
SPECIFIED STANDARD: IEC 60952-204

This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate.

The attached Design Approval Document No.96/00039(E2) and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. 96/00039(E1) to which this extension should be attached.

Certificate No. 96/00039(E2)
Issue Date: 4 March 2007
Expiry Date: 24 June 2011
Sheet: 1 of 1

M.H.A. Rufae, London Design Support Services, Lloyd's Register EMEA

Lloyd's Register

Type Approval Certificate Extension

This is to certify that Certificate No. 03/00058 for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

PRODUCER: Elemtrotec Srl
PLACE OF PRODUCTION: Via Jean Jaurés, 12, 20125 Milan, Italy
DESCRIPTION: Adjustable Pressure Switches and Vacuum Switches
TYPE: PPL, PML, PMC, PPC, PFC, PSM, PSP, VSM
= Vacuum Switch
APPLICATION: Marine, offshore and industrial use in environmental categories ENV1, ENV2 and ENV3 as described in Lloyd's Register of Shipping Test Specification No. 1.1996
SPECIFIED STANDARD: Manufacturer's specification
ADDITIONAL TESTS: Hazardous Areas: Ex: IIC T6

Certificate No. 03/00058(E1)
Issue Date: 27 November 2008
Expiry Date: 12 June 2013
Sheet: 1 of 2

A.M. Anderson, London Design Support Services, Lloyd's Register EMEA

APPARECCHI DI CONTROLLO PER FLUIDI

Control Devices for Fluids

- Pressostati
- Vuotostati
- Termostati
- Flussimetri
- Flussostati
- Livellostati
- Sensori di livello
- Pressostati elettronici
- Trasmettitori di pressione
- Indicatori digitali
- Cappucci di protezione
- Connettori
- Esecuzioni speciali
- Pressure switches
- Vacuum switches
- Temperature switches
- Flow meters
- Flow switches
- Float level switches
- Level sensors
- Electronic pressure switches
- Pressure transmitters
- Digital indicators
- Protection caps
- Connectors
- Custom executions

I dati tecnici indicati nel presente catalogo sono l'esito delle prove effettuate al momento dell'uscita del prodotto. Sono oggetto di continui studi e, pertanto, sono suscettibili di modifiche senza preavviso alcuno.

ELETTROTEC srl si riserva la facoltà di apportare modifiche al presente catalogo in qualsiasi momento. È vietata la riproduzione anche parziale.

È esclusiva responsabilità dell'utilizzatore accertare l'idoneità dei prodotti, per ogni applicazione o uso specifico.

The technical data written in this catalogue are the result of tests made at the time of the release of the product. Being these data subjected to continuous tests, they can be modified at any time without previous notice.

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