CONFLOW s.p.a.

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M/PPR/EPR/I/E	
05	2018

Manuale di installazione e manutenzione
Installation and maintenance manual

Posizionatori Pilota Rotanti
Rotary Pilot Positioners
Power Genex ®

PNEUMATICI SERIE PPR	ELETTROPNEUMATICI SERIE EPR
	
PNEUMATIC SERIES PPR	**ELECTROPNEUMATIC SERIES EPR**

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1 – DESCRIZIONE

PPR e EPR sono posizionatori a semplice e doppio effetto con segnale in entrata 3-15 psi e 4 –20 mA per il controllo proporzionale di attuatori rotanti. Gli apparecchi confrontano il segnale proveniente dall'unità regolante con l'angolo di rotazione dello stelo inviando un segnale amplificato che agisce sulle camere dell'attuatore.

1 – DESCRIPTION

PPR and EPR are simple or double acting positioners with input signal 3-15 psi and 4 – 20 mA for proportional control of pneumatic rotary actuators. The positioners operate by comparision of the signal, coming from the control unit, with the angular rotation of the stem, and conveys a positioning amplified pressure to the valve actuator.

2- DATI TECNICI tipo PPR :

Produzione	Waterproof IP 66
Segnale di Ingresso	3 - 15 psi … 0.2 – 1.0 bar
Split range	Disponibile
Alimentazione Aria	1.4 … 7 bar (20 … 100 psi)
Corsa Nominale	0 … 100 ° Unica molla
Connessioni Pneumatiche	1/4" NPT
Temperatura Ambiente	-20 ° … +80 °C
Linearità	Entro +/- 1.5 % fondo scala
Sensibilità	Entro 0.5 % fondo scala
Isteresi	Entro 1.0 % fondo scala
Ripetibilità	Entro +/- 0.5 % fondo scala
Consumo d'aria	5 LPM (supply 1.4 bar)
Capacità	80 LPM (supply 1.4 bar)
Peso	2.1 Kg

2- TECHINICAL DATA type PPR :

Protection	Waterproof IP 66
Input Signal	3 - 15 psi … 0.2 – 1.0 bar
Split range	Available
Supply Air Pressure	1.4 … 7 bar (20 … 100 psi)
Standard stroke	0 … 100 ° Unic spring
Connessioni pneumatiche	1/4" NPT
Ambient Temperature	-20 ° … +80 °C
Linearity	Within +/- 1.5 % F.S.
Sensitivity	Within 0.5 % F.S.
Hysteresis	Within 1.0 % F.S.
Repeatibility	Within +/- 0.5 % F.S.
Air consumption	5 LPM (supply 1.4 bar)
Flow capacity	80 LPM (supply 1.4 bar)
Weight	2.1 Kg

3 - DATI TECNICI tipo EPR :

Protezione standard Tipo EPR	CE Waterproof IP 66
Tipo EPR- IECEx	Ex II 2G Exia IIC T6 Ga -20/70°C
Tipo EPR -EXATEX	Ex II 2G Exia IIC T6 Ga c IIC T6 - Ta -20 °C / 70°C
Tipo EPR-EXD ATEX	Ex II 2G Ex d mb IIC T6 o T5 Ta T6 -40 ..+55°C T5 -20..+70°C
Segnale di Ingresso	4 – 20 mA
Impedenza entrata	235 +/- 15 Ω
Split range	Disponibile
Alimentazione Aria	1.4 … 7 bar (20 … 100 psi)
Corsa Nominale	0 … 100 % Unica molla
Connessioni Pneumatiche	¼" NPT
Connessioni Elettriche	PG16 su attacco ½" NPT
Temperatura Ambiente	-20 ° … +70 °C
Linearità	Entro +/- 1.5 % fondo scala
Sensibilità	Entro 0.5 % fondo scala
Isteresi	Entro 1.0 % fondo scala
Ripetibilità	Entro +/- 0.5 % fondo scala
Consumo d'aria	5 LPM (supply 1.4 bar)
Capacità	80 LPM (supply 1.4 bar)
Peso EPR / EPR-EXATEX	2.1 Kg
Peso EPR-EXD	2.9 Kg

3- TECHINICAL DATA type EPR :

Standard protection Type EPR	CE Waterproof IP 66
Type EPR - IECEx	Ex II 2G Exia IIC T6 Ga - 20/70°C
Type EPR - EXATEX	Ex II 2G Exia IIC T6 Ga c IIC T6 -Ta -20 °C / 70°C
Type EPR-EXD ATEX	Ex II 2G Ex d mb IIC T6 or T5 Ta T6 -40 ..+55°C T5 -20..+70°C
Input Signal	4 – 20 mA
Input resistance - impedance	235 +/- 15 Ω
Split range	Available
Supply Air Pressure	1.4 … 7 bar (20 … 100 psi)
Standard stroke	0 … 100 % Unic spring
Pneumatic connections	¼" NPT
Electric Connections	PG16 on connection ½" NPT
Ambient Temperature	-20 ° … +70 °C
Linearity	Within +/- 1.5 % F.S.
Sensitivity	Within 0.5 % F.S.
Hysteresis	Within 1.0 % F.S.
Repeatibility	Within +/- 0.5 % F.S.
Air consumption	5 LPM (supply 1.4 bar)
Flow capacity	80 LPM (supply 1.4 bar)
Weight EPR / EPR-EXATEX	2.1 Kg
Weight EPR-EXD	2.9 Kg

4 – INFORMAZIONI GENERALI DI SICUREZZA

Queste istruzioni di sicurezza hanno lo scopo di prevenire situazioni pericolose e / o danni alle apparecchiature. Queste istruzioni indicano il livello di potenziale pericolo con le etichette "ATTENZIONE" - "AVVERTENZA" - "PERICOLO"

ATTENZIONE indica un pericolo con un basso livello di rischio che, se non evitato, potrebbe causare lesioni di lieve o moderata entità.

AVVERTENZA indica un pericolo con un livello medio di rischio che, se non evitato, potrebbe provocare la morte o lesioni gravi.

PERICOLO indica un pericolo con un alto livello di rischio che, se non evitato, provocherà morte o lesioni gravi.

TRATTAMENTO DEL PRODOTTO

ATTENZIONE

1. Evitare vibrazioni eccessive o impatti sul corpo del posizionatore e qualsiasi forza eccessiva, in quanto queste azioni possono causare danni al prodotto. Maneggiare con cura durante il trasporto e l'installazione.
2. Se viene utilizzato in una installazione in cui si verificano vibrazioni, si consiglia di utilizzare una fascia di rilegatura dei cavi di collegamento per evitare la rottura dei fili.
3. Se esposti a possibili infiltrazioni di umidità, si prega di prendere le misure necessarie. Ad esempio, se il posizionatore viene lasciato in magazzino per un lungo periodo di tempo, evitare in ogni modo la penetrazione dell'acqua con adeguata protezione. Adottare misure per evitare la condensazione di rugiada all'interno del posizionatore se esposto ad alte temperature e umidità. Prendete opportune misure contro la condensa, specialmente quando vengono esportati.
4. Non esporre il prodotto a campi magnetici, poiché questi influenzano le sue caratteristiche.

ARIA DI ALIMENTAZIONE

ATTENZIONE

1. Utilizzare solo aria compressa pulita, deumidificata e pulita. Il filtro riduttore deve essere privo di lubrificatore. (Tipo AFR80 CONFLOW SpA).
2. Non utilizzare aria compressa contenente prodotti chimici, solventi organici, salinità o gas corrosivi, poiché ciò potrebbe causare malfunzionamenti.
3. Quando si opera sotto il punto di congelamento, proteggere il posizionatore dal congelamento.

AMBIENTE OPERATIVO

ATTENZIONE

1. Non operare in luoghi con atmosfera di gas corrosivi, prodotti chimici, acqua di mare o dove tali sostanze possono aderire all'apparecchio.
2. Non operare al di fuori dell'intervallo di temperatura di funzionamento indicato poiché ciò che potrebbe danneggiare le parti elettroniche e il deterioramento dei materiali della guarnizioni.
3. Se l'apparecchio viene installato alla luce solare diretta si consiglia una copertura.

4 – GENERAL AND SAFETY INFORMATION

These safety instructions are intended to prevent hazardous situations and/or equipment damage.
These instruction indicate the level of potential hazard with labels **"CAUTION" – "WARINING" – "DANGER"**

CAUTION indicate a hazard with a low level of risk which, of not avoided, could result in minor or moderate injury.

WARNING indicate a hazard with a medium level of risk which, of not avoided, could result in death or serious injury.

DANGER indicate a hazard with a high level of risk which, of not avoided, will result in death or serious injury.

HANDLING

CAUTION

1. Avoid excessive vibration or impact to the positioner body and any excessive force to the armature, as these actions may cause damage to the product. Handle carefully while transporting and operating.
2. If being used in a place where vibrations occurs, using a binding band is recommended to prevent broken wires because of vibration.
3. When exposed to possible moisture invasion, please take the necessary measures. For example if the positioner is left onsite for a long periods, a plug should be put in the piping port and a body cover unit fitted to avoid water penetration. Take measures to avoid dew condensation inside the positioner if exposed to high temperature and humidity. Take enough measures against condensation especially when packing for export.
4. Keep magnetic field off the positioners, as this affects its characteristics.

AIR SUPPLY

CAUTION

1. Use only dehumidified and dust extracted clean compressed air. The Air filter regulator must be without lubricator. (Type AFR80 CONFLOW SpA)
2. Do not use compressed air containing chemicals, organic solvents, salinity or corrosive gases, as this may cause malfunction.
3. When operating below freezing point, protect the positioner from freezing.

OPERATING ENVIRONMENT

CAUTION

1. Do not operate in locations with atmosphere of corrosive gases, chemicals, sea water or where these substances will adhere to the regulator.
2. Do not operate out of the indicated operation temperature range as this may cause damage to electronic parts and seal materials to deteriorate.
3. If the body cover is being installed in a place where the body cover is exposed to direct sunlight, a coverage is recommended.

4 – INFORMAZIONI GENERALI DI SICUREZZA

ATTENZIONE

4. Prima di installare gli apparecchi rimuovere le protezioni di plastica poste a copertura delle connessioni.

AVVERTENZA

5. Durante l'esercizio non toccare lo stelo perché è in movimento, potrebbe intrappolare le dita o i vestiti.

Durante la MANUTENZIONE

WARNING

1. Prima di iniziare eventuali operazioni di manutenzione assicurarsi che il posizionatore non sia in pressione. Dopo l'installazione, la riparazione o lo smontaggio, collegare l'aria compressa e condurre i test per confermare la funzione e le perdite appropriate.
Non utilizzare il posizionatore quando il rumore proveniente dallo spurgo è più forte rispetto allo stato iniziale o quando non funziona normalmente. Se si verifica questo aspetto, controllare immediatamente se gli apparecchi sono stati assemblati e montati correttamente.
Non modificare mai la costruzione elettrica per mantenere la costruzione a prova di esplosione.

WARNING–Potential electrostatic charging hazard

1. Le parti non metalliche incorporate nella custodia di questa apparecchiatura possono generare un livello di carica elettrostatica di accensione.
2. Pertanto, in particolare quando si utilizzano applicazioni che richiedono specificamente apparecchiature IIC di gruppo e EPL Ga, l'apparecchiatura non deve essere installata in un luogo in cui le condizioni esterne siano conduttive per l'accumulo di cariche elettrostatiche su tali superfici. Inoltre, l'apparecchiatura deve essere pulita solo con un panno umido.
3. L'involucro contiene alluminio ed è considerato un potenziale rischio di innesco per impatto o attrito. Prestare attenzione durante l'installazione e l'uso per evitare urti o attriti. In particolare, non deve essere utilizzato per applicazioni che richiedono specificamente apparecchiature EPL Ga.

AVVERTENZA

1. L'isolamento tra un circuito a sicurezza intrinseca e il telaio dell'apparecchiatura non è in grado di sostenere una prova di rigidità dielettrica da 500 V come definito in Cl.6.3.12 dalla norma EN 60079-11: 2007. Questo deve essere preso in considerazione durante l'installazione.
2. La messa a terra della custodia è necessaria per mantenere la sicurezza intrinseca poiché l'isolamento tra un circuito a sicurezza intrinseca e un telaio dell'apparecchiatura non è in grado di sostenere un test di rigidità dielettrica da 500 V. Ci sono due punti di messa a terra dell'apparecchiatura, uno è fornito come punto di messa a terra interno al coperchio dell'apparecchiatura per il fissaggio di uno schermo del cavo, l'altro è fornito come punto di messa a terra esterno sul lato sinistro del corpo, la sezione dei cavi deve essere in grado di sopportare la corrente massima possibile dell'apparecchiatura (generalmente si consiglia un cavo isolato con una sezione trasversale di almeno 4 mm²). Il cavo deve essere dotato di una rondella di sicurezza ad anello per il fissaggio di conduttori di sezioni fino a 4 mm²

4 – GENERAL AND SAFETY INFORMATION

CAUTION

4. Before installing positioners, remove plastic covers placed on connection ends.

WARNING

5. During exercise do not touch the stem because it is moving, it may trap fingers or clothes.

During MAINTENANCE

WARNING

1. Before starting maintenance be sure that the positioner is not pressurized. After installation, repair or disassembly, connect compressed air and conduct tests to confirm appropriate function and leakage.
Do not use the positioner when noise from the bleeder sounds louder compared with the initial state, or when it does not operate normally. If these occur, check immediately if assembled and mounted correctly.
Never modify electrical construction to maintain explosion-proof construction.

WARNING–Potential electrostatic charging hazard

3. The non metallic parts incorporated in the enclosure of this equipment may generate an ignition capable level of electrostatic charge.
4. Therefore particularly when it used fo applications that specifically require Group IIC, EPL Ga equipment, the equipment shall not be installed in a location where the external conditions are conductive to the build-up of electrostatic charge on such surfaces. Additionally, the equipment shall only be cleaned with a damp cloth.
5. The enclosure contains aluminium and is considered to present a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact or friction. Particulary, it must not be used for applications that specifically require EPL Ga equipment.

CAUTION

1. The insulation between an intrinsically safe circuit and frame of equipment is not capable of withstanding a 500 V dielectric strenght test as defined in Cl.6.3.12 of en 60079-11:2007. This shall be taken into account during installation.
2. The earthing of enclosure is necessary to maintain Intrinsic Safety because the insulation between an intrinsically safe circuit and a frame of the equipment is not capable of withstanding a 500 V dielectric strength test. There are two earthing points of equipment, one is provided as an internal earthing point inside rear cover of the equipment for attaching of a cable screen, the other is provided as an external earthing point on the left side of the enclosure, their cross-sectional areas should be capable of caring the maximum possible current of the equipment (generally an insulated wire having a cross-sectional area of at least 4 mm² is recommended).The cable should be fitted with a split ring lock washer to minimize the risk of self-loosening and is of suitable construction for securing of conductors of cross sections up to 4 mm²

5 - ACCOPPIAMENTO POSIZIONATORE ATTUATORE

5.1 FUNZIONAMENTO AD AZIONE ROVESCIA

Tutti i posizionatori vengono forniti per il funzionamento in azione rovescia a semplice effetto (OUT 2 chiuso).

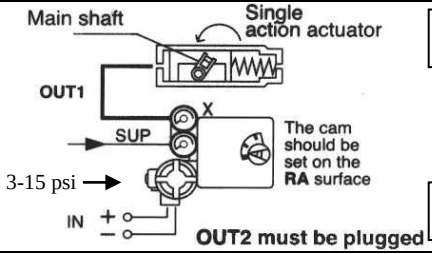
5- POSITIONER – ACTUATOR COUPLING

5.1 REVERSE ACTING OPERATION

All positioners are normally supplied for single acting operation with reverse action action (OUT 2 closed).

All'aumentare del segnale in ingresso lo stelo valvola ruota in senso antiorario

Attuatore semplice effetto
Connessione : **Out 1**



3 psi / 4 mA

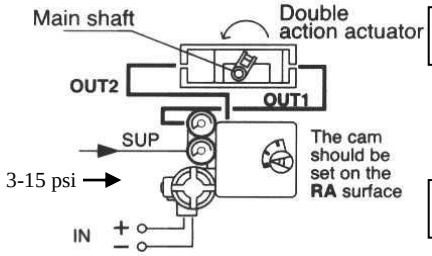
15 psi / 20 mA

As the input signal increases valve stem rotates counter clockwise

Single action actuator
Connection : **Out 1**

All'aumentare del segnale in ingresso lo stelo valvola ruota in senso antiorario

Attuatore doppio effetto
Connessione : **Out 1 e Out 2**



3 psi / 4 mA

15 psi / 20 mA

As the input signal increases valve stem rotates counter clockwise

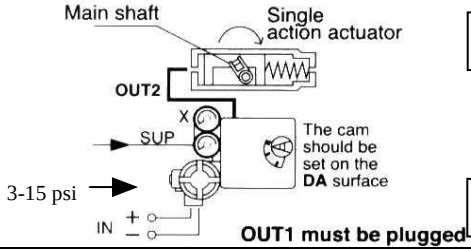
Double effect actuator
Connections : **Out1 and Out2**

5.2 FUNZIONAMENTO AD AZIONE DIRETTA

5.2 DIRECT ACTING OPERATION

All'aumentare del segnale in ingresso lo stelo valvola ruota in senso orario

Attuatore semplice effetto
Connessione : **Out 2**



15 psi / 20 mA

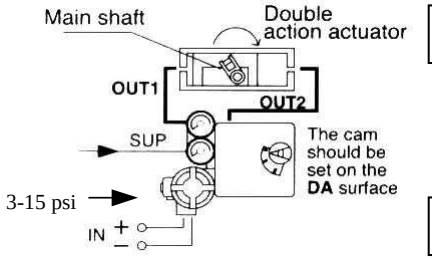
3 psi / 4 mA

As the input signal increases valve stem rotates clockwise

Simple effect actuator
Connection : **Out 2**

All'aumentare del segnale in ingresso lo stelo valvola ruota in senso orario

Attuatore doppio effetto
Connessione : **Out 1 e Out 2**



15 psi / 20 mA

3 psi / 4 mA

As the input signal increases valve stem rotates clockwise

Double effect actuator
Connection : **Out1 and Out2**

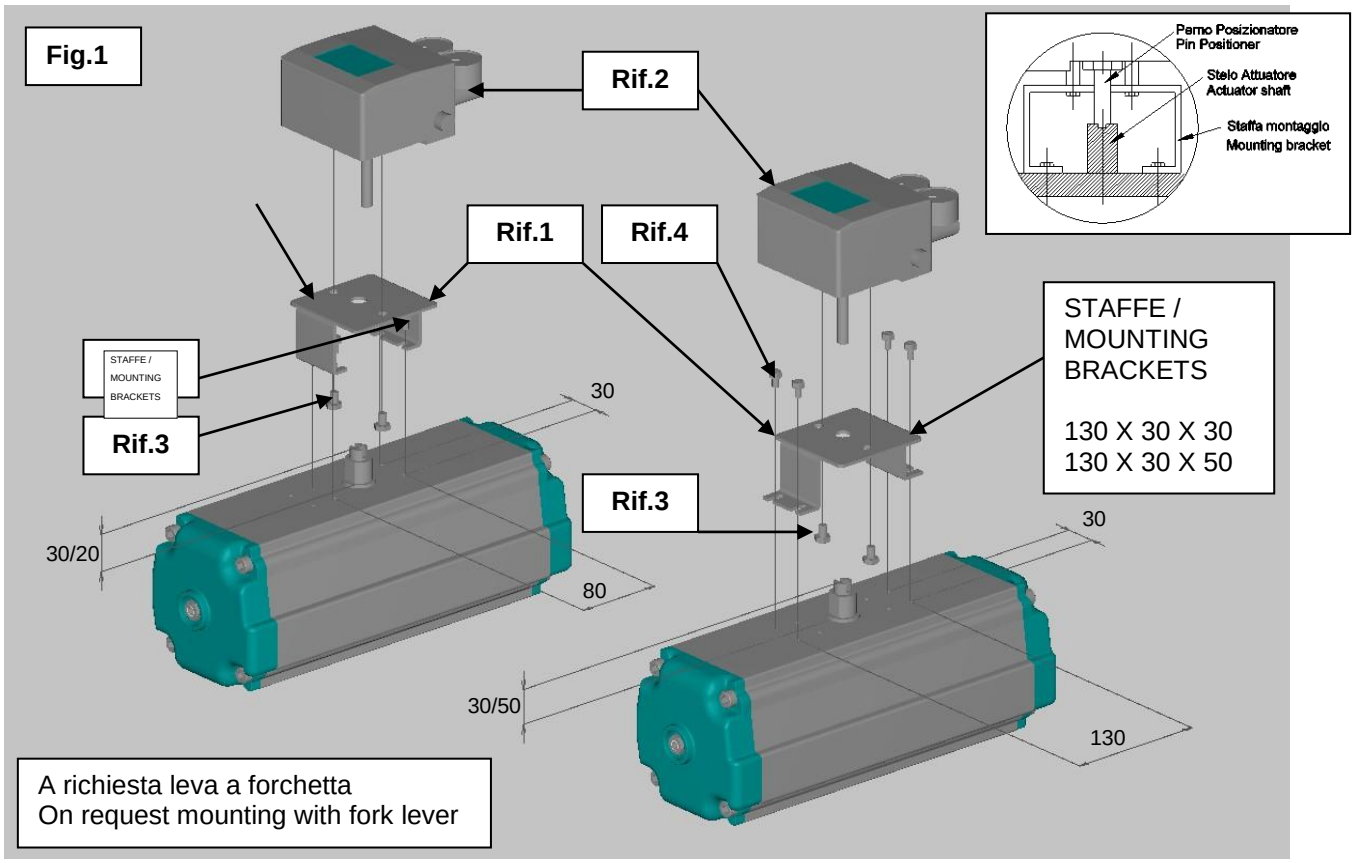
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6 - INSTALLAZIONE SU PISTONE

Montare il posizionatore come indicato nella fig. 1
Il posizionatore può essere anche montato ruotato di 180°.

6- INSTALLATION ON PISTON

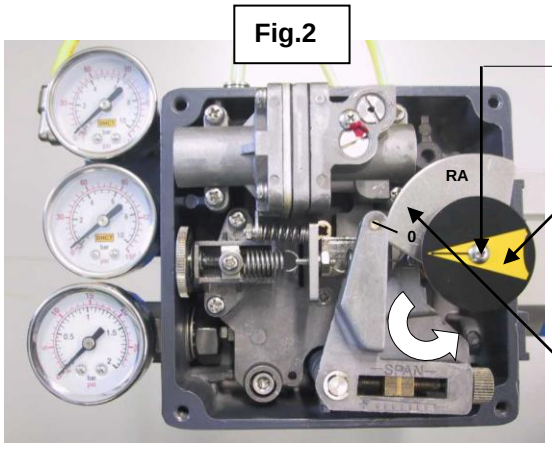
Mount the positioner as showed on fig.1.
The positioner can be rotated by 180° angle.



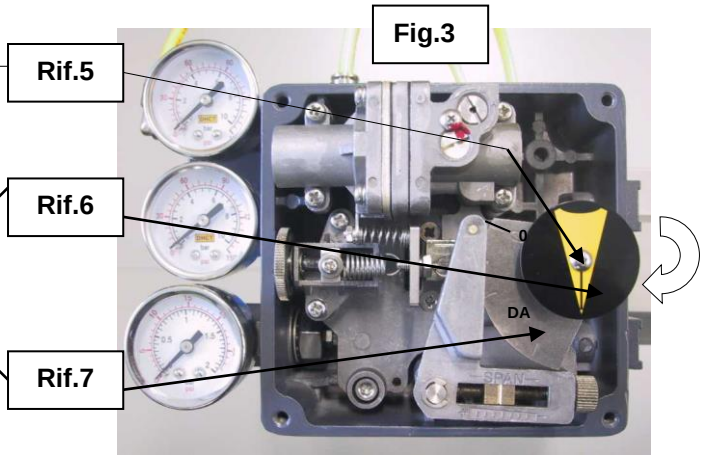
Fissare la staffa Rif.1 al posizionatore Rif.2 per mezzo delle viti in dotazione Rif.3.
Fissare il complesso staffa-posizionatore al pistone per mezzo delle viti in dotazione Rif.4

Place the mounting bracket Ref.1 to the positioner Ref.2 with the included locknuts Ref.3.
Place the bracket and the positioner to the piston with the included locknuts Ref.4.

AZIONE ROVESCIA / REVERSE ACTION



AZIONE DIRETTA / DIRECT ACTION



6.1 SETTAGGIO DELLA CAMMA E DEL DISCO INDICATORE

Tutti i posizionatori vengono forniti per il funzionamento ad azione rovescia “RA” con rotazione della camma Rif.7 in senso antiorario (vedi Fig.2).
Per il funzionamento ad azione diretta (Fig.3) svitare la vite Rif.5, togliere il disco indicatore Rif.6 e la camma Rif.7. Rovesciare la camma Rif.7 e rimontarla come indicato in Fig.3. Nell’azione diretta “DA” il senso di rotazione è orario.

6.1 CAM AND INDICATOR ADJUSTMENT

All the positioners are supplied as “RA” reverse action setting, with the cam rotation (Ref.7) counter clockwise (see Fig.2).
For a direct action (Fig.3) loosen the locknut Ref.5, remove the indicator disc Ref.6 and the cam Ref.7. Reverse the cam Ref.7 and place it as shown on Fig.3. With “DA” direct action the disc rotates clockwise.

7 - CONNESSIONI PNEUMATICHE ED ELETTRICHE

Tutti i collegamenti pneumatici sono facilmente accessibili vedi Fig.4. Per le connessioni elettriche serie EPR inserire i due fili nel passacavo e collegarli alla morsettiera interna contrassegnata con "+" e "-" vedi Fig. 5.

ATTENZIONE I posizionatori EPR-EX (sicurezza intrinseca – flameproof) devono essere alimentati da costruzioni elettriche associate, certificate in conformità alle norme EN 50.014 ed EN 50.020 che rispettino i limiti delle caratteristiche elettriche indicate nel punto 3.

7- PNEUMATIC AND ELECTRIC CONNECTIONS

All pneumatic connections are easily accessible, see Fig.4.
For the electric connections EPR type, put the two cables into the cable gland and plug them to the internal terminal board marked by "+" and "-", see fig. 5.

WARNING The positioners type EPR-EX (intrinsic safety – flameproof) must be feed by electric devices certified in conformity with EN 50.014 and EN 50.020 standards. The devices must comply the electric features mentioned on technical specification, see point 3.

Fig.4 **TIPO/TYPE PPR**

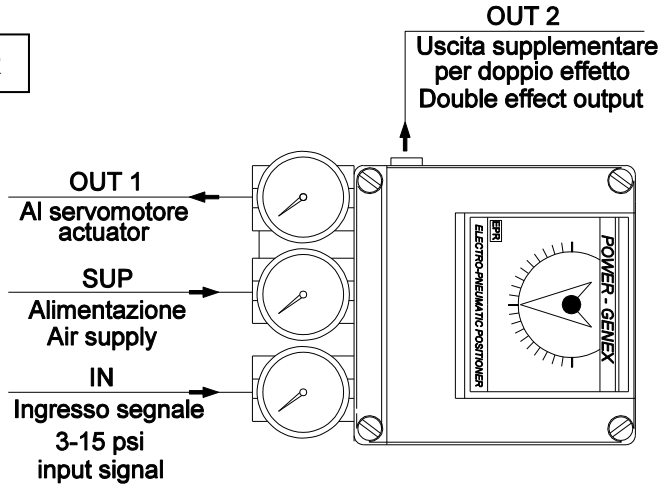
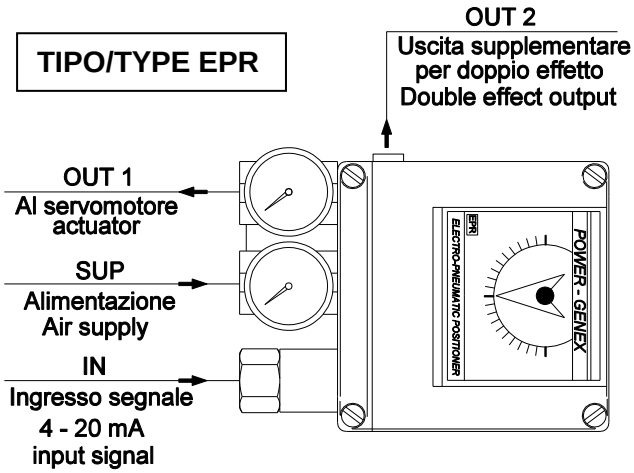
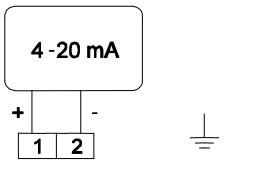


Fig.5 **TIPO/TYPE EPR**

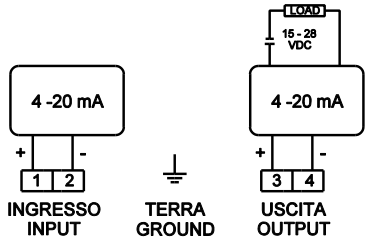


SCHEMA ELETTRICO
WIRE DIAGRAM



Standard
4 - 20 mA input
Tipo/Type EPR

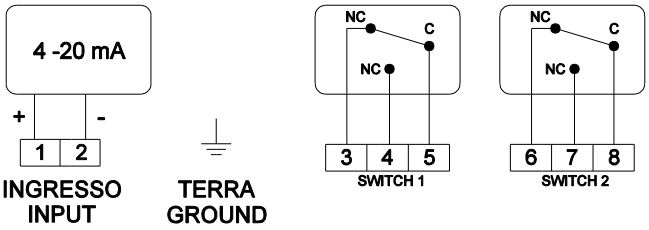
SCHEMA ELETTRICO **WIRE DIAGRAM**



CON TRASMETTITORE DI POSIZIONE /
WITH POSITION TRANSMITTER

4 - 20 mA input and output
Tipo/Type EPR - T

Aggiustaggio del trasmettitore di posizione attraverso i due TRIM di zero e SPAN nel terminal box
Adjustment zero and span in terminal box



CON FINE CORSA / WITH LIMIT SWITCHES
SPDT
TIPO / TYPE EPR-F

8 - CONNESSIONI ELETTRICHE PER ESECUZIONE SICUREZZA INTRINSECA Ex ia IIC T6

Le serie EPR a sicurezza intrinseca è stata progettata per gli standard di sicurezza intrinseca IEC / EN 60079-0, IEC / EN 60079-11, EN 13463-1, EN 16463-5. L'apparecchio può essere influenzato da un'energia elettrica o magnetica e da altri dispositivi elettronici.

ATTENZIONE
Non aprire quando c'è presenza di segnale

8- ELECTRIC CONNECTIONS FOR INTRINSIC SAFETY Ex ia IIC T6

The intrinsically safe EPR series are designed for the intrinsic safety standards of IEC/EN 60079-0, IEC/EN 60079-11, EN 13463-1, EN 16463-5. Note that it can be influenced by an electrical or magnetic energy from other electronic devices.

CAUTION
Do not open when it is energized

FIG.6

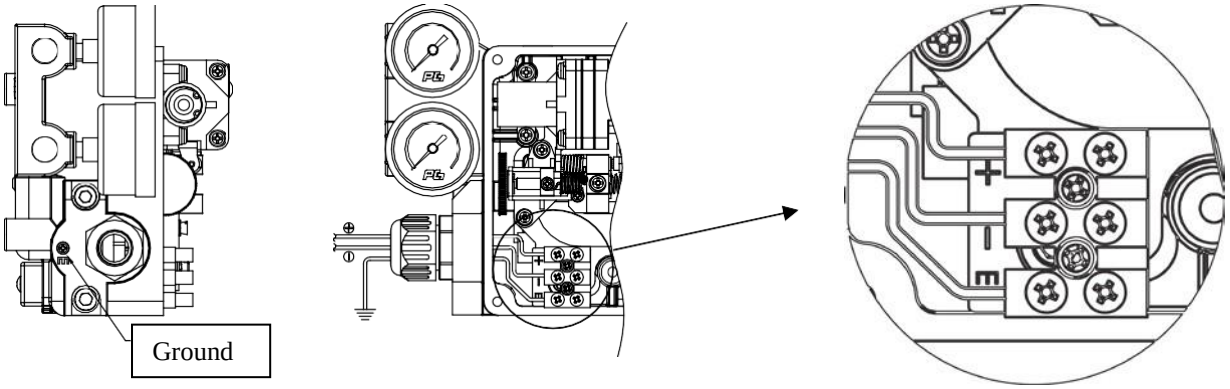
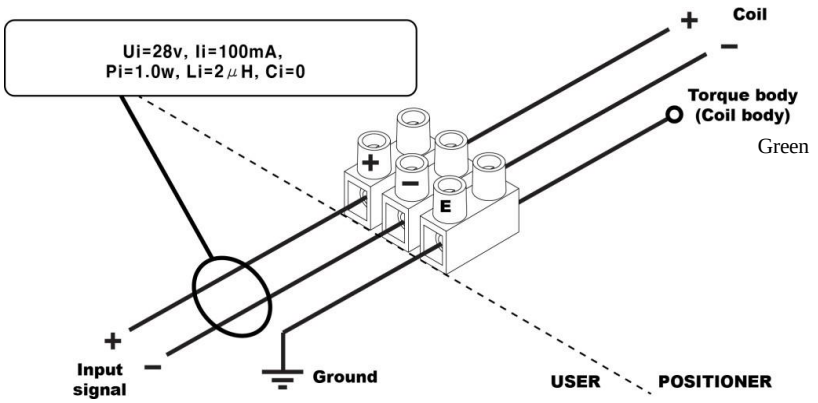


FIG.7



ATTENZIONE

Selezionare una barriera di sicurezza adeguata in grado di soddisfare i parametri del posizionatore EPR a sicurezza intrinseca.
Considerare anche "Li" e "Ci" in base alla lunghezza del cavo.
Assicurarsi di collegare un alimentatore prima di collegare i cavi ai terminali e confermare i polo + e - .
Stringere le viti di fissaggio in modo che il cavo non possa essere estratto o rilasciato.
Proteggere i cavi da un danno esterno.
Mettere a terra il dispositivo di posizionamento EPR a sicurezza intrinseca.

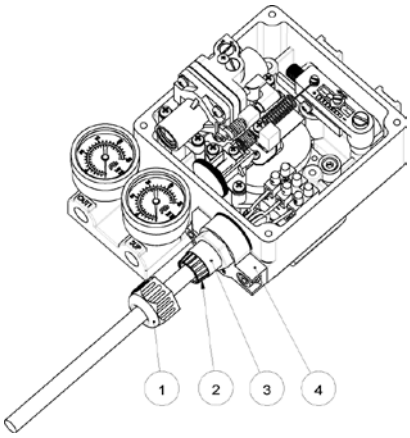
CAUTION

Select a proper safety barrier that can meet parameters of the intrinsically safe EPR positioner. Also consider "Li" and "Ci" according to a cable lenght.
Be sure to disconnect a power supply before connecting wires to terminalsand confirm + - clearly when connecting wires.
Tighten a fixing screws so that a cable cannot be pulled out or left away.
Protect cables from an external damage.
Ground the intrinsically safe the EPR positioner.

8 - CONNESSIONI ELETTRICHE PER ESECUZIONE SICUREZZA INTRINSECA Ex ia IIC T6

Connessioni al pressacavo

FIG.8



1.Ghiera del Pressacavo – Cable gland cover
2.Tenuta del Pressacavo – Cable gland sealing
3.Corpo del Pressacavo - Cable gland body
4.Giunzione – Junction body

8- ELECTRIC CONNECTIONS FOR INTRINSIC SAFETY Ex ia IIC T6

Connection to Cable Gland

9 - CONNESSIONI ELETTRICHE PER FLAMEPROOF Ex dmb IIC T6/T5, Ex dmb IIB T6, Eex md IIB T5

ATTENZIONE

La serie EPR certificata per ATEX Eex md IIB T5 deve essere collegata a un fusibile con i seguenti valori nominali:
Max 125 mA, capacità di interruzione 35A
Devono essere utilizzati pressacavi e tappi EEx d certificati 1/2 "PF.

Assicurarsi di utilizzare cavi e pressacavi approvati antideflagranti nell'area gas o nell'area potenzialmente esplosiva. Utilizzare i cavi adatti al diametro della guarnizione NBR quando si utilizzano pressacavi approvati flameproof.

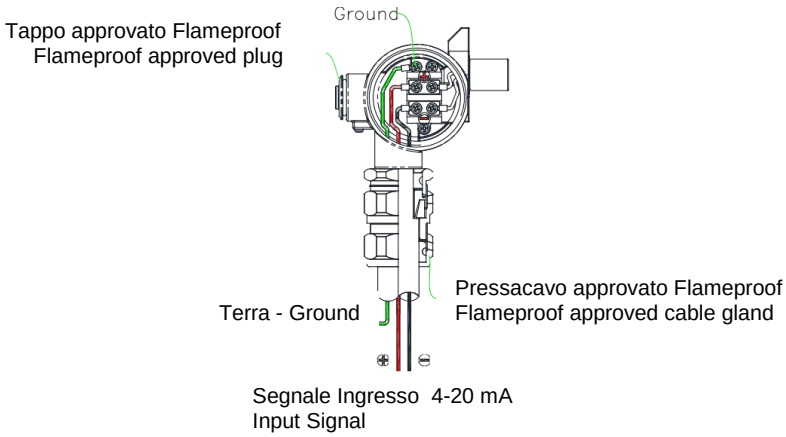
9 - ELECTRIC CONNECTIONS FOR FLAMEPROOF Ex dmb IIC T6/T5, Ex dmb IIB T6, Eex md IIB T5

CAUTION

The EPR series certified to ATEX Eex md IIB T5 must be connected to a fuse with the following ratings:
Max 125 mA, breaking capacity 35A
Suitable 1/2" PF threaded certified EEx d cable glands and plugs must be used.

Be sure to use the flameproof-approved wires and cable glands in the gas area or in the potentially explosive area. Use the cables suitable for the diameter of the NBR packing when using the flameproof approved cable glands.

FIG.9

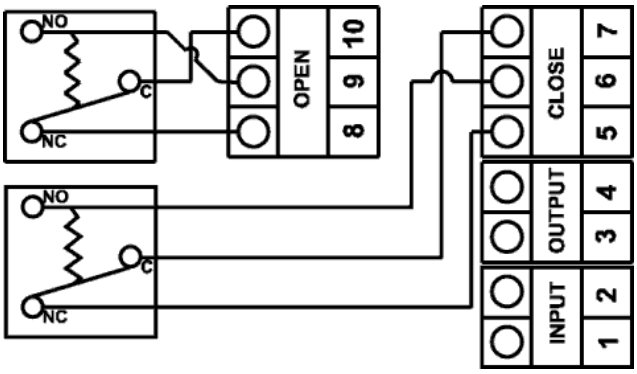


Aprire il coperchio della morsettiera allentando il bullone di fissaggio sul coperchio della morsettiera.
Installare i pressacavi omologati a prova di fiamma e inserire un cavo nella morsettiera, utilizzare e fissare saldamente la guarnizione NBR in modo che l'interno della morsettiera possa essere sigillato.
Connetti esterno + interno + esterno - interno -.
Fissare saldamente i bulloni terminali.
Chiudere il coperchio della morsettiera e girare completamente il bullone di fissaggio.

Open the terminal box cover by loosening the fixing bolt on the terminal box cover.
Install the flameproof approved cable glands tightly and insert a wire into the terminal box, use and fix the NBR packing tightly so that the inside of the terminal box can be sealed up.
Connect external + to internal + and external – to internal -.
Fix the terminal bolts tightly.
Close the terminal box cover and turn the fixing bolt completely.

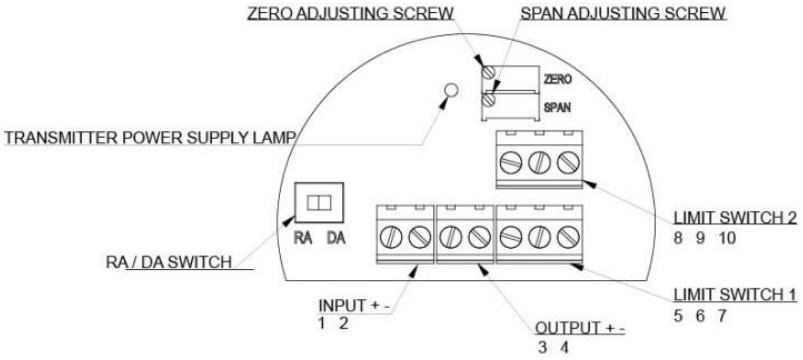
10 - CONNESSIONI ELETTRICHE PER TRASMETTITORE DI POSIZIONE E FINE CORSA

10 - ELECTRIC CONNECTIONS FOR POSITION TRANSMITTER AND LIMIT SWITCHES



10.1 Vista a bordo

10.1 Board view



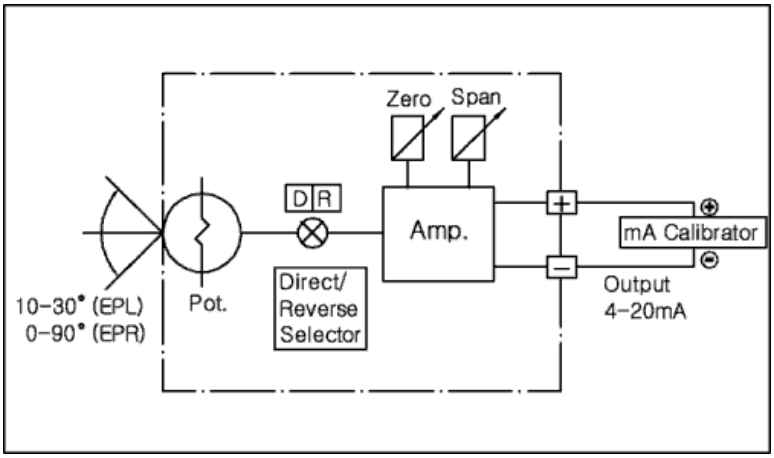
10.2 Specifica

10.2 Specification

Alimentazione	Power supply rating	5.5~30 V DC
Alimentazione raccomandata	Recommended power supply	24 VDC
Segnale uscita	Output signal	4-20 mA
Temperatura operativa	Operating Temperature	-20°C +70 °C
Impedenza	Load Impedance	0~600 Ohms
Massima uscita	Max. output	30 mA DC
Linearità	Linearity	+/- 1.0 %
Isteresi	Hysteresis	1.0 % della scala totale / of full scale
Ripetibilità	Repeatability	+/- 0.5% della scala totale / of full scale
Aggiustamento - set	Adjustment	Zero e span nel/in terminal box

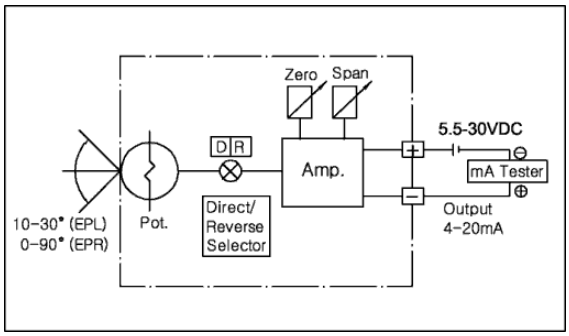
10.3 Schema con calibratore mA

10.3 Scheme with mA loop calibrator



10.4 Schema con multi-tester

10.4 Scheme with multi-meter tester



1. Selezionare RA o DA sul terminal box RA è un'impostazione di fabbrica standard.
2. Fornire un segnale di ingresso da 4 mA e ruotare la vite di regolazione dello zero sulla scheda in senso orario o antiorario finché il segnale di uscita diventa 4 mA
3. Fornire un segnale di ingresso da 20 mA e ruotare la vite di regolazione dello span a bordo in senso orario o antiorario finché il segnale in uscita diventa 20 mA
4. Ripetere il processo punto 2 e 3 finché il segnale di uscita si avvicina al segnale di ingresso

1. Select RA or DA on board in the termial box, RA is a standard factory setting.
2. Supply 4 mA input signal and turn the zero adjusting screw on board clockwise or counter clockwise until output signal becomes 4mA
3. Supply 20mA input signal and turn the span adjusting screw on board clockwise or counter clockwise until output signal becomes 20 mA
4. Repeat the process of 2 and 3 until output signal approaches input signal

ATTENZIONE

5. Accertarsi che Span e Zero del posizionatore EPR siano impostati esattamente prima di impostare Span e Zero del trasmettitore di posizione
6. Assicurarsi che sia fornita una tensione di alimentazione di 5,5~30 V in caso di utilizzo del tester mA (tester multimetro)
7. Controllare se la spia di alimentazione del trasmettitore è accesa

CAUTION

5. Be sure that the Span and Zero of the EPR positioner should be exactly set before setting Span and Zero of the position transmitter.
6. Be sure that 5.5~30 V DC should be supplied in case of using the mA tester (multimeter tester)
7. Check if the transmitter power supply lamp is on

10.5 Fine corsa meccanici SPDT

10.5 SPDT Mechanical Limit switches

Contatti	Contacts	SPDT form C
AC Rating	AC Rating	16A 1/2HP 125/250 VAC
DC Rating	DC Rating	0.6° 125VDC / 0.3° 250VDC
Aggiustamento	Adjustment	Camme con viti di fermo (chiave a L inclusa per l'impostazione) Cams with set screws (L-wrench included for setting)

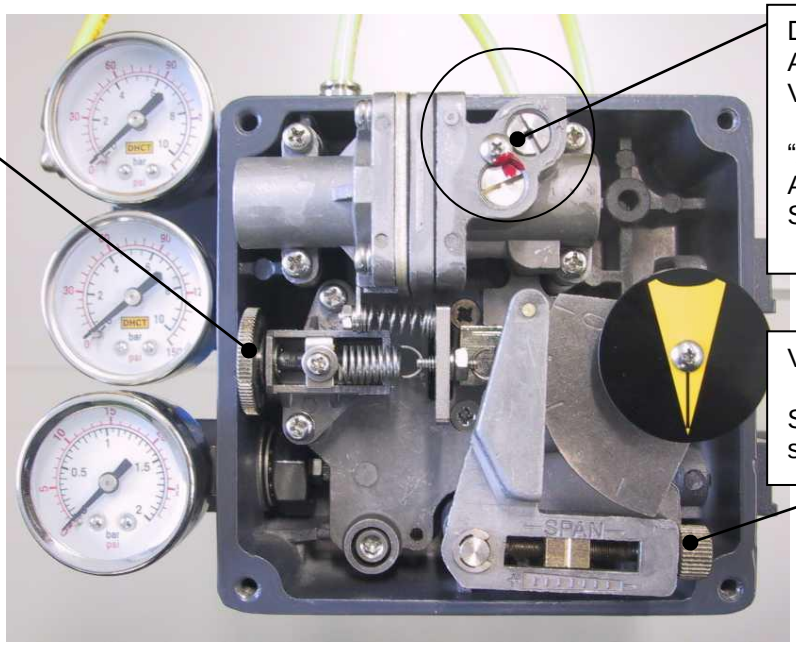
11- AVVIAMENTO

- Controllare che tutti i collegamenti siano corretti e che il posizionatore sia montato secondo la funzione richiesta (vedi sez. 5)
- Fornire l'alimentazione al posizionatore :
  1,4….7 bar in accordo al pistone da comandare
- Fornire il segnale di comando 3 psi o 4 mA. Girare la rotella dello zero in senso orario o antiorario fino ad ottenere la partenza vedi Fig.6.
- Controllare la rotazione fornendo il segnale max di 15 psi o 20 mA. Se la corsa non raggiunge il 100 % svitare o avvitare la vite del trimmer SPAN fino a raggiungere il 100% vedi Fig.6.
- Controllare nuovamente lo zero

11 - START-UP

- Check that all pneumatic and electrical connections are correct and the positioner is mounted according to the function required (refer to section 5)
- Supply air to the positioner :
  1,4….7 bar according to the piston to control
- Supply the input signal 3 psi or 4 mA. Turn the zero adjusting screw clockwise or counter clockwise to set the zero position see Fig.6.
- Check the stroke of the control valve by setting input signal 15 psi or 20 mA. If the stroke does not meet 100%, turn the span adjusting screw clockwise or counter clockwise until 100% is reached., the same operation is necessary if the positioner reached the 100% before with max signal see fig.6.
- Check again the zero position

Fig. 10

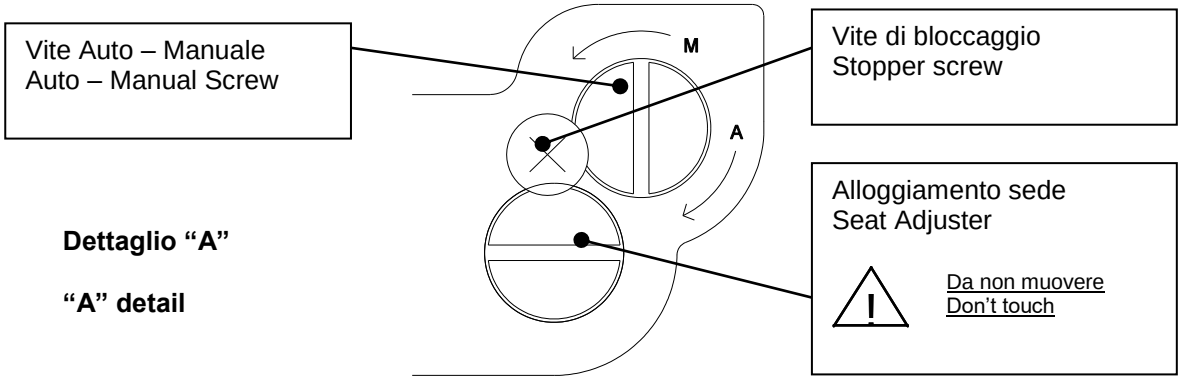


12 - OPERAZIONE AUTO - MANUALE

Per operare manualmente usare un filtro riduttore e posizionare la vite Auto – Manuale presente nel pilota in posizione M. (vedi dettaglio "A" sotto). Questa operazione permette di bypassare il segnale di ingresso 3-15 psi.

12 – AUTO – MANUAL OPERATION

For manual operation using an external air regulator, set the Auto / Manual switch located on the pilot valve to M (see detail "A" below). This will bypass the 3-15 psi input signal.



13 - REGOLAZIONE VELOCITA' VALVOLA PILOTA

ATTENZIONE Prima di rimuovere il pilota, assicurarsi di avere scollegato segnale ed alimentazione

Nel caso il posizionatore risulti troppo veloce, viene fornito, insieme al posizionatore, un kit di orifizi a passaggio ridotto. Per installarlo, occorre rimuovere dal posizionatore il pilota:

- Svitare le quattro viti "A" (Vedi Fig. 7) di fissaggio
- Togliere la molla di compensazione "B" (vedi Fig.7)
- Una volta rimosso il pilota, ruotarlo sottosopra (vedi Fig.8)
- Rimuovere gli O-rings dalle porte Out1 e Out2 (vedi Fig 8)
- Posizionare i piattelli degli orifizi nelle rispettive sedi e porre sopra di essi i nuovi O-rings, quindi rimontare la valvola pilota

13.1 MANUTENZIONE VALVOLA PILOTA

Nel caso sia necessario sostituire la valvola pilota a seguito di usura, operare come sopra.

13 – OPTIONAL RESTRICTED PILOT VALVE ORIFICES

WARNING Before removing pilot valve, be sure to disconnect positioner from the signal and supply air.

In case the positioner is too fast, is included with the positioner a restricted pilot valve orifice kit. To install it, the pilot valve must be removed from the positioner:

- Remove the four screws " A" (see Fig.7) holding the pilot to the positioner body.
- Remove the compensation spring "B" (see Fig.7)
- When the pilot is removed, reverse it as showed on Fig.8
- Remove the o-rings from Out 1 and Out 2 ports as showed on Fig.8
- Place the orifices plates in their places with the new o-rings above them and re-install the pilot valve

13.1 PILOT VALVE MAINTENANCE

In case of a replacement of the pilot valve due to wear, follow the istructions above.

Fig.11

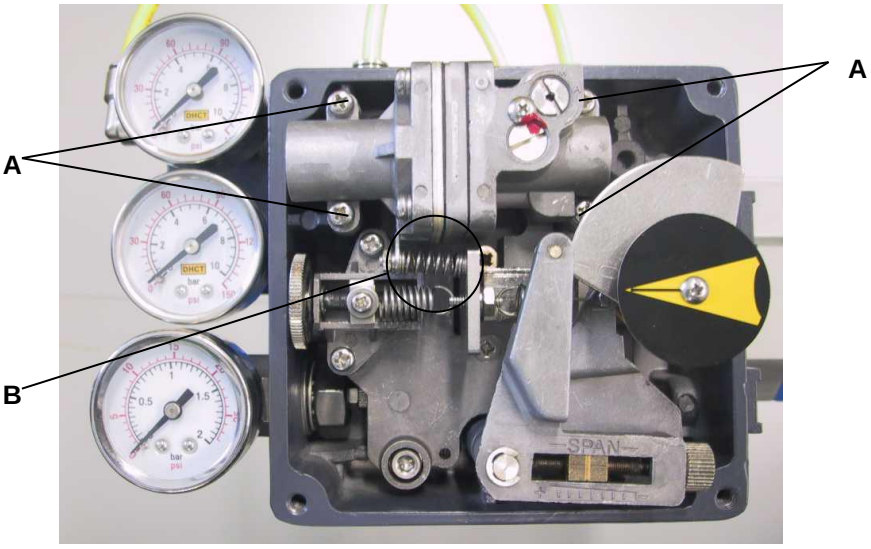
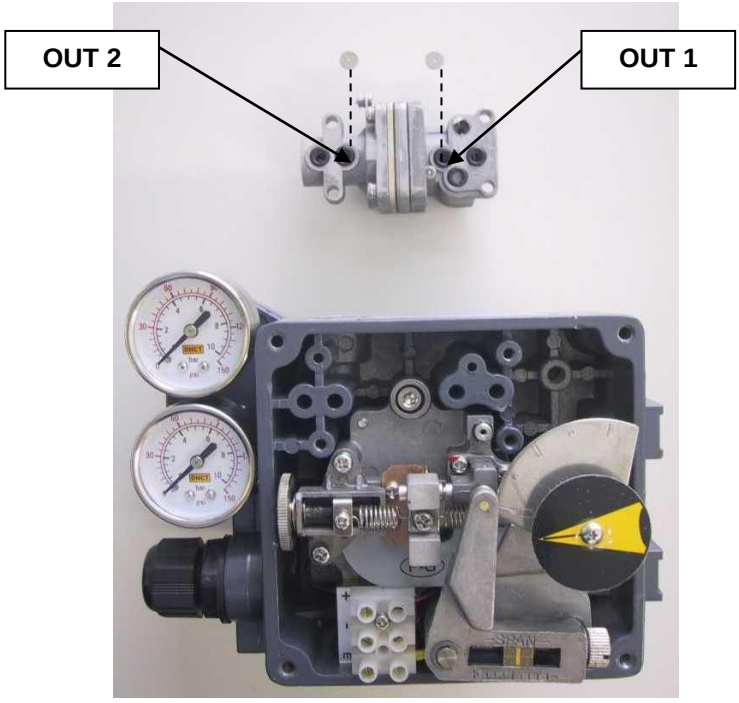


Fig. 12



14 - ANOMALIE DI FUNZIONAMENTO

Riportiamo qui di seguito alcuni inconvenienti che si possono verificare durante il funzionamento :

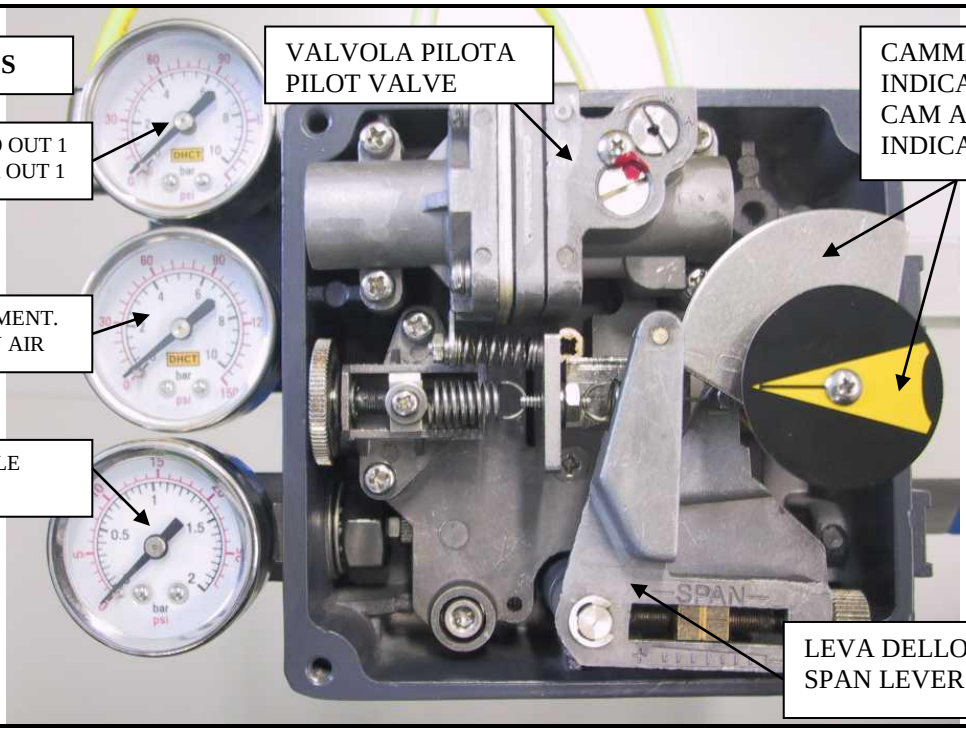
INCONVENIENTI RISCONTRATI	*CAUSA*	*PROVVEDIMENTO*
L'attuatore pendola e non si stabilizza	*Velocità troppo elevata*	*Diminuire la velocità vedi punto 10*
Il posizionatore non regola correttamente apertura e chiusura dell'attuatore	*Connessioni pneumatiche non corrette*	*Vedi punto 7 fig. 4*
	Accoppiamento tra posizionatore e attuatore errato	*Vedi punto 5*
	Collegamenti elettrici errati	*Vedi punto 7 fig.5*
	Mancanza del segnale di alimentazione	*Controllare e sistemare*
	Mancanza del segnale di comando	*Controllare e sistemare*
L'attuatore non compie il campo desiderato	*Regolazione del campo errata*	*Vedi punto 8*
L'attuatore non parte dalla posizione desiderata	*Regolazione dello zero errata*	*Vedi punto 8*

14 - TROUBLES SHOOTING

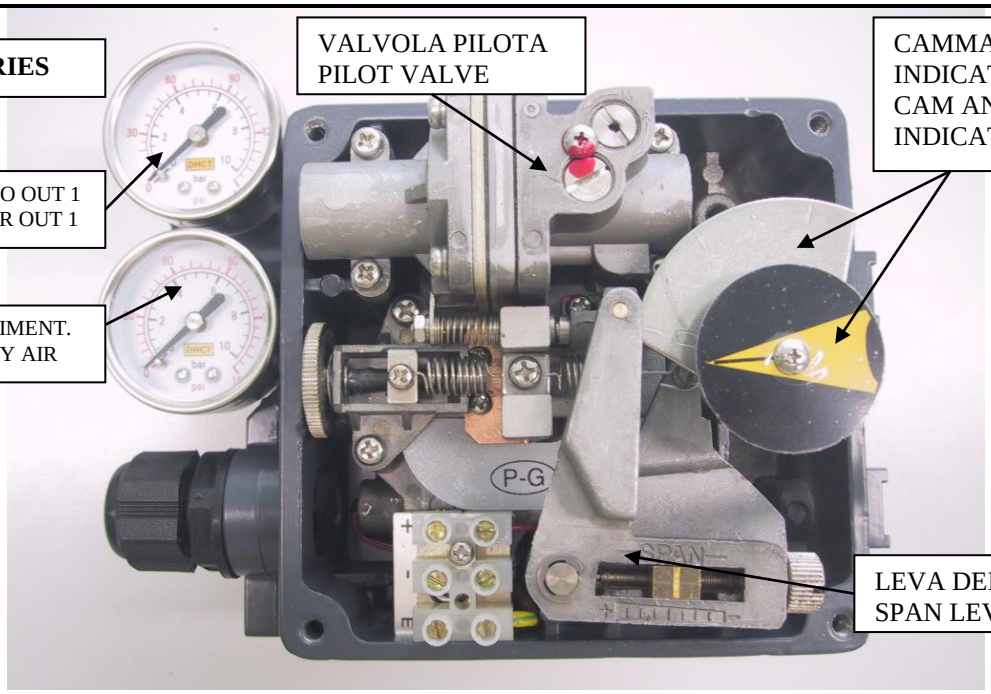
Herebelow some of the possible causes giving troubles during normal working conditions :

SYMPTOMS	*POSSIBLE CAUSE*	*REMEDY*
Actuator hunting	*Opening/Closing speed too high*	*Reduce the speed see chapter 10*
Positioner with wrong control action	*Wrong pneumatic connections*	*See chapter 7 fig. 4*
	Actuator and positioner coupling is not correct	*See chapter 5*
	Wrong electric connections	*See chapter 7 fig.5*
	Supply air missing	*Check and adjust*
	Control signal missing	*Check and adjust*
Actuator span inadeguate	*Span adjustment is wrong*	*See chapter 8*
Actuator start point shifted	*Zero adjustment is wrong*	*See chapter 8*

PPR SERIES



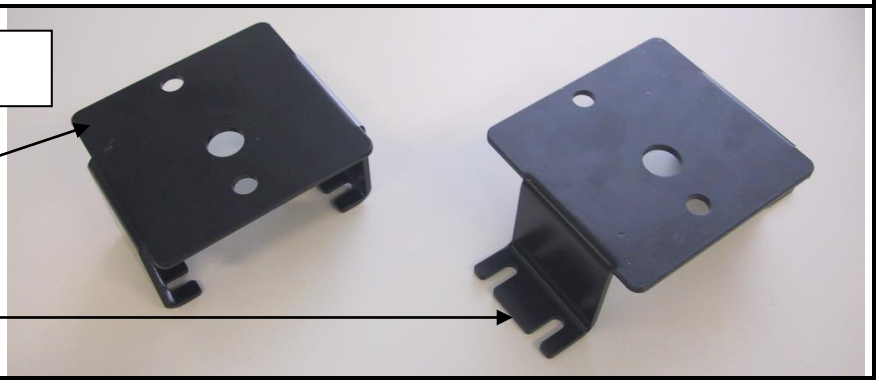
EPR SERIES



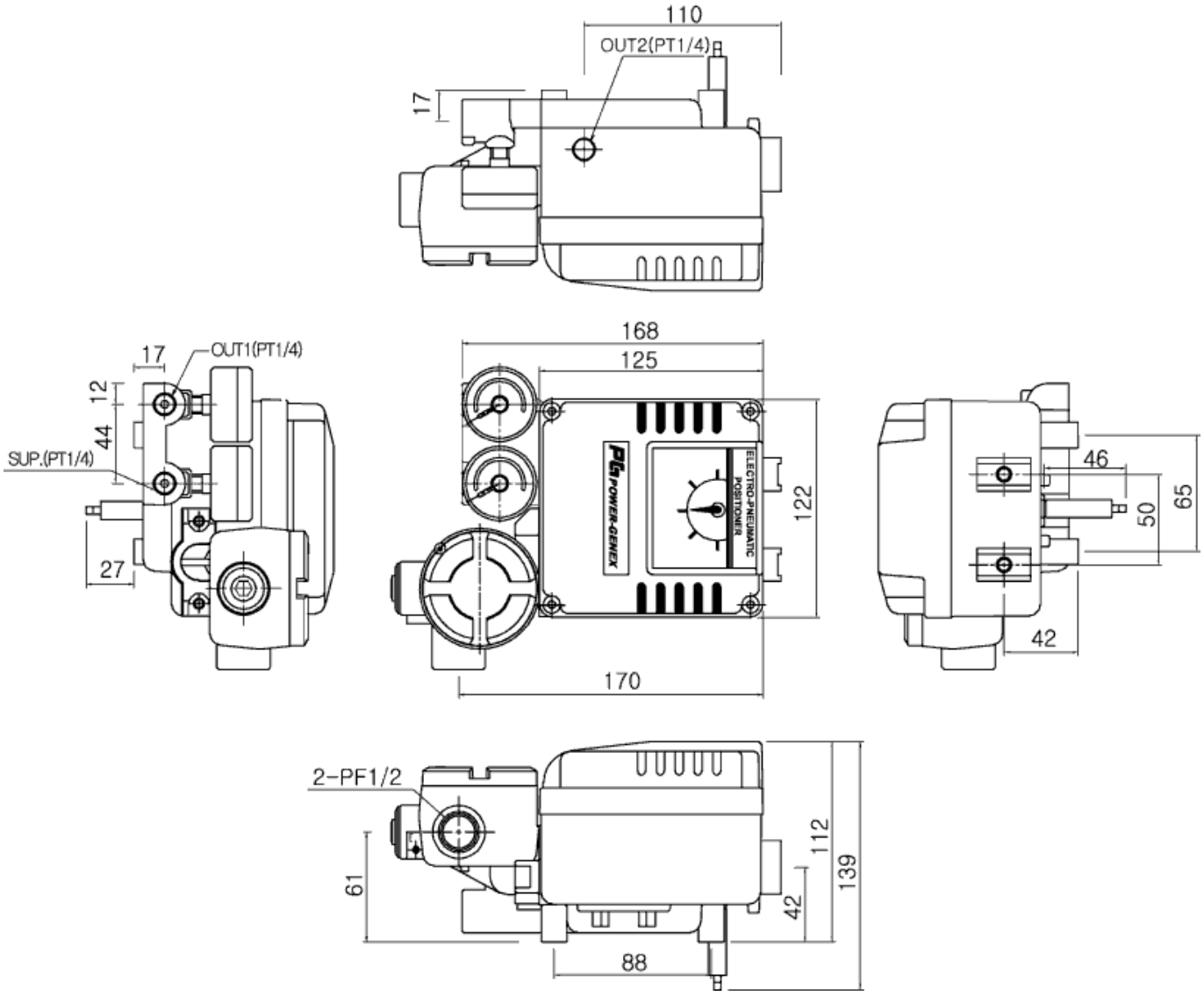
STAFFA E VITI DI SERRAGGIO
BRACKET WITH SCREWS

STAFFA 0 TIPO 80 X 30 X 20
STAFFA 1 TIPO 80 X 30 X 30

STAFFA 2 TIPO 130 X 30 X 30
STAFFA 21 TIPO 130 X 30 X 50



16 - DIMENSIONI **16 – DIMENSIONS**



POWER-GENEX®

EU Declaration of Conformity

We herewith declare , **Power-Genex Ltd.**
99, Eunbong-ro, Namdong-gu,
Incheon 21639 Korea

declare that the DoC is issued under our sole responsibility and belongs to the following product:

Product Name	**:**	**Electro-Pneumatic Positioner**
Product Model	**:**	**EPL, EPR Series**

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

EMC Directive 2004/108/EC(until 19th April, 2016) and
EMC Directive 2014/30/EU(from 20th April, 2016)

ATEX Directive 94/9/EC(until 19th April, 2016) and
ATEX Directive 2014/34/EU(from 20th April, 2016)

The following harmonised standards and technical specifications have been applied:

EN 61000-6-1 : 2007 / EN 61000-6-2 : 2005 / EN61000-6-3 : 2007 / EN 61000-6-4 : 2007
EN 60079-0 : 2009 / EN 60079-11 : 2007 / EN 13463-1 : 2009 / EN 13463-5 : 2010

EC-Type Examination Certificate : INERIS 12ATEX0030X

Conformity with the requirements of these Directives is proven by complete adherence to the following standards.

- Date : Apr 20, 2016

Koh Sung-won, Head of R&D

Lee Soon-hyuk, Head of Quality Management

This declaration certifies the conformity to the specified directives but contains no assurance of properties.

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres Directive 94/9/EC**

(1) # EC-TYPE EXAMINATION CERTIFICATE

(3) Number of the EC type examination certificate: **INERIS 12ATEX0030X**

(4) Equipment or protective system:

ELECTRO-PNEUMATIC POSTIONER TYPE EPL/EPR...

(5) Manufacturer: **POWER-GENEX Ltd.**

(6) Address: 44B9L, 434-9, Nonhyun-Dong, Namdong-Gui
Incheon, 405-848 KOREA

(7) This equipment or protective system and any other acceptable alternative of this one are described in the annex of this certificate and the descriptive documents quoted in this annex.

(8) INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/EC of the 23rd March 1994, certifies that this equipment or protective system fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, described in annex II of the Directive.

The examinations and the tests are consigned in report No 026098/12.

(9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:

EN 60079-0	:	2009
EN 60079-11	:	2007
EN 13463-1	:	2009
EN 13463-5	:	2010

- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

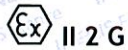
Only the entire document including annexes may be reprinted. IM1337AC

Parc Technologique Alata BP 2 F-60550 Verneuil-en-Halatte
tél + 33(0)3 44 55 66 77 fax + 33(0)3 44 55 66 99 internet www.ineris.fr
Institut national de l'environnement industriel et des risques
Etablissement public à caractère industriel et commercial - RCS Senlis B 381 984 921 - Siret 381 984 921 00019 - APE 7120B

(10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protective system is subjected to the special conditions for safe use, mentioned in the annex of this certificate.

(11) This EC type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system, these are not covered by this certificate.

(12) The marking of the equipment or the protective system will have to contain:



Verneuil-en-Halatte, 2012.07.18



Director of the Certifying Body,
By delegation
T. HOUEIX
Certification Officer
Certification Division

(13) # ANNEX

(14) EC TYPE EXAMINATION CERTIFICATE N°INERIS 12ATEX0030X

(15) DESCRIPTION OF THE EQUIPMENT OR THE PROTECTIVE SYSTEM

Electro-Pneumatic Positioner is a valve control device made in Aluminum and protected by intrinsic security "Ex i" and constructional safety "c" for the mechanical part.

The equipment comprises the following major parts:

- Torque motor with 4-20 mA input signal
- Pilot Valve
- Gauge
- Dome indicator (only for EPR)

The equipment gets the protection degrees IP66 according to EN 60529.

PARAMETERS RELATING TO THE SAFETY

Ui : 28V
Ii : 100mA
Pi : 1W
Ci = 0
Li = 2µH

MARKING

Marking has to be readable and indelible; it has to include the following indications:

POWER-GENEX Ltd.
Incheon, 405-848 KOREA
EPL/EPR...(*)
INERIS 12ATEX0030X
(Serial number)
(Year of construction)

II 2 G
Ex ia IIC T6 Ga
c IIC T6
T.Amb : -20°C to + 70°C

WARNING : POTENTIAL ELECROSTATIC CHARGING HAZARD - SEE INTRUCTIONS

WARNING : POTENTIAL ELECROSTATIC CHARGING HAZARD - SEE INTRUCTIONS

(*) The dots are replaced by a codification according to the manufacturing variations. The different types are indicated in the descriptive documents.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

None.

(16) DESCRIPTIVE DOCUMENTS

The descriptive document quoted hereafter constitutes the technical documentation of the equipment, subject of this certificate.

- Certification file EPL/EPR dated and signed on 2011.08.30

(17) SPECIAL CONDITIONS FOR SAFE USE

For the risk of electrostatic discharge, the user will have to read the instructions.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is ensured by:

- Conformity to the standards quoted in clause (9).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx KTL 11.0012X issue No.:0	Certificate history:
Status:	**Current**	
Date of Issue:	**2011-09-30**	Page 1 of 3
Applicant:	**Power-Genex Ltd.** 44B9L, 434-9, Nonhyun-Dong, Namdong-Gu, Incheon, 405-849 **Korea, Republic of**	
Electrical Apparatus: *Optional accessory:*	**Model EPL/EPR Electro-Pneumatic Positioner**	
Type of Protection:	**Intrinsic safety "i"**	
Marking:	**Ex ia IIC T6 Ga** **Ambient Temperature Range : -20℃ to +70℃** **Ui = 28V, Ii = 100mA, Pi = 1.0W, Ci = 0, Li = 2μH** **IECEx KTL 11.0012X**	
Approved for issue on behalf of the IECEx Certification Body:	Hee-Soo Kim	
Position:	Managing director	
Signature: *(for printed version)*		
Date:		

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

Korea Testing Laboratory
222-13, Guro-Dong, Guro-Gu
Seoul, 152-718
Korea, Republic of

IECEx Certificate of Conformity

Certificate No.: IECEx KTL 11.0012X

Date of Issue: **2011-09-30** Issue No.: **0**

Manufacturer: **Power-Genex Ltd.**
44B9L, 434-9, Nonhyun-Dong, Namdong-Gu, Incheon, 405-849
Korea, Republic of

Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2007-10 Edition: 5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
KR/KTL/ExTR11.0012/00

Quality Assessment Report:

KR/KTL/QAR11.0002/00

IECEx Certificate of Conformity

Certificate No.: IECEx KTL 11.0012X

Date of Issue: **2011-09-30** Issue No.: **0**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The Model EPL/EPR Electro-Pneumatic Positioner is intrinsically safe equipment, which is designed to be operated by a torque motor with 4~20mA electrical signal for control of valve position. The equipment comprises a pilot valve, a lever, dial gauges, a torque motor assembly and so on. They are housed in an aluminium or stainless steel enclosure. 24V DC power supply shall be transmitted to the equipment through an intrinsically safe barrier.
EPa-bcdefghij
a=Actuator Action : L-Linear type, R-Rotary type
b=Ex-Protection Type : I-Intrinsic safety(Ex ia IIC T6)
c=Feedback Shaft : A, B, C, A, N
d=Gauge : 1, 2
e=Pilot Valve Orifice : S, M
f =Position Feedback : N-None
g=Connection Threads : 3, 4, 5
h=Dome Indicator : N, D
i=High Temperature : T-70℃(std)
j=Mounting Bracket : N, L, R, F

For the detailed information, refer to the manual.

CONDITIONS OF CERTIFICATION: YES as shown below:

WARNING-POTENTIAL ELECTROSTATIC CHARGING HAZARD-SEE INSTRUCTIONS.
1. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition capable level of electrostatic charge. Therefore particularly when it used for applications that specifically require Group IIC, EPL Ga equipment, the equipment shall not be installed in a location where the external conditions are conductive to the build-up of electrostatic charge on such surfaces. Additionally, the equipment shall only be cleaned with a damp cloth.
2. The encolsure contains aluminum and is considered to present a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact or friction.

POWER-GENEX®

EU Declaration of Conformity

We herewith declare , **Power-Genex Ltd.**
99, Eunbong-ro, Namdong-gu,
Incheon 21639 Korea

declare that the DoC is issued under our sole responsibility and belongs to the following product:

Product Name	**:**	**Electro-Pneumatic Positioner**
Product Model	**:**	**EPL, EPR Series**

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

EMC Directive 2004/108/EC(until 19th April, 2016) and
EMC Directive 2014/30/EU(from 20th April, 2016)

ATEX Directive 94/9/EC(until 19th April, 2016) and
ATEX Directive 2014/34/EU(from 20th April, 2016)

The following harmonised standards and technical specifications have been applied:
EN 61000-6-1 : 2007 / EN 61000-6-2 : 2005 / EN61000-6-3 : 2007 / EN 61000-6-4 : 2007
EN 60079-0 : 2012/A11 : 2013 / EN 60079-1 : 2007 / EN 60079-18 : 2009

EC-Type Examination Certificate : INERIS 14ATEX0062X

Conformity with the requirements of these Directives is proven by complete adherence to the following standards.

- Date : Apr 20, 2016

Koh Sung-won, Head of R&D

Lee Soon-hyuk, Head of Quality Management

This declaration certifies the conformity to the specified directives but contains no assurance of properties.

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres Directive 94/9/EC**

(1) # EC-TYPE EXAMINATION CERTIFICATE

(3) Number of the EC type examination certificate: **INERIS 14ATEX0062X**

(4) Equipment or protective system:

ELECTRO-PNEUMATIC POSITIONER TYPE EPL-D...N.T. and EPR-D...N.T.

(5) Manufacturer: **POWER-GENEX Ltd.**

(6) Address: 44B9L, 434-9, Nonhyun-Dong, Namdong-Gu
Incheon, 405-848 KOREA

(7) This equipment or protective system and any other acceptable alternative of this one are described in the annex of this certificate and the descriptive documents quoted in this annex.

(8) INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/EC of the 23rd March 1994, and accredited by COFRAC under number 5-0045 for certification of products and services (scope of accreditation available on the website www.cofrac.fr) certifies that this equipment or protective system fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, described in annex II of the Directive.

The examinations and the tests are consigned in report No 029195/14.

The rules of certification are available on the website www.ineris.fr.

(9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:

EN 60079-0	:	2012/A11 : 2013
EN 60079-1	:	2007
EN 60079-18	:	2009

- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

Parc Technologique Alata BP 2 F-60550 Verneuil-en-Halatte
tél + 33(0)3 44 55 66 77 **fax** + 33(0)3 44 55 66 99 **internet** www.ineris.fr
Institut national de l'environnement industriel et des risques
Etablissement public à caractère industriel et commercial - RCS Senlis B 381 984 921 - Siret 381 984 921 00019 - APE 7120B

(10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protective system is subjected to the special conditions for safe use, mentioned in the annex of this certificate.

(11) This EC type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system, these are not covered by this certificate.

(12) The marking of the equipment or the protective system will have to contain:

Ex II 2 G

Verneuil-en-Halatte, 2015.01.16

The Chief Executive Officer of INERIS
By delegation
T. HOUEIX
Ex Certification Officer

ATMOSPHERES EXPLOSIVES ORGANISME NOTIFIE INERIS NOTIFIED BODY EXPLOSIVE ATMOSPHERES

(13) # ANNEX

(14) EC TYPE EXAMINATION CERTIFICATE N°INERIS 14ATEX0062X

(15) DESCRIPTION OF THE EQUIPMENT OR THE PROTECTIVE SYSTEM

The Model EPL/EPR electro-pneumatic positioner is an Ex d mb type equipment that is applied in hazardous area, which is used for control of linear and rotary valve position.

PARAMETERS RELATING TO THE SAFETY

Input signal	:	4-20 mA signal
Air supply max	:	7 bar

MARKING

Marking has to be readable and indelible; it has to include the following indications:

POWER-GENEX Ltd.
Incheon, 405-848 KOREA
EPL-D...N.T. and EPR-D...N.T. (*)
INERIS 14ATEX0062X
(Serial number)
(Year of construction)
Ⓔx II 2 G
Ex d mb IIC T6 or T5 Gb
Tamb : -40°C...+55°C or -40°C...+70°C

WARNING : DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

(*) The dots are replaced by a codification according to the manufacturing variations. The different types are indicated in the descriptive documents.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

In accordance with clause 16.2 of the EN 60079-1 standard, the equipment defined above is exempted of routine test in owing to the fact that it has undergone a static type test at 4 times the reference pressure under 28.15 bar.

(16) DESCRIPTIVE DOCUMENTS

The descriptive documents quoted hereafter constitute the technical documentation of the equipment, subject of this certificate.

- Certification file dated and signed on 2013.05.07

(17) SPECIAL CONDITIONS FOR SAFE USE

- The gap of flameproof joints is less than the values specified in tables of the EN 60079-1 standard.
- The width of the different flameproof joints is superior to the values specified in tables of the EN 60079-1 standard.

The other conditions are stipulated in the instructions.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is ensured by:

- Conformity to the standards quoted in clause (9).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

ТАМОЖЕННЫЙ СОЮЗ

СЕРТИФИКАТ СООТВЕТСТВИЯ

EAC

№ ТС RU C-KR.ГБ08.В.00646

Серия RU № 0239683

ОРГАН ПО СЕРТИФИКАЦИИ ВЗРЫВОЗАЩИЩЕННОГО ОБОРУДОВАНИЯ ЗАО ИСПЫТАТЕЛЬНОГО ЦЕНТРА ТЕХНИЧЕСКИХ ИЗМЕРЕНИЙ, БЕЗОПАСНОСТИ И РАЗРАБОТОК (ОС ВО ЗАО ТИБР), аттестат аккредитации № РОСС RU.0001.11ГБ08, срок действия с 15.06.2011 г. по 15.06.2016 г., выдан Федеральным Агентством по техническому регулированию и метрологии. Адрес: 105082, г. Москва, ул. Фридриха Энгельса, д. 75, стр.11, офис 204, Россия (юридический адрес); 301760, Тульская обл., г. Донской, ул. Горноспасательная, д. 1, стр. А, Россия (фактический адрес). Тел./факс: (48746) 5-59-53, e-mail: pmv@tiber.ru, http://www.tiber.ru

ЗАЯВИТЕЛЬ

ООО «Диалкон Технолоджи», ОГРН 1085047010839
Адрес: 141400, Московская область, г. Химки, ул. Рабочая, дом 2 А, корпус 22 А, офис 306, Россия
Телефон:+74957413972, факс: +74957413972

ИЗГОТОВИТЕЛЬ POWER-GENEX Ltd.
Адрес: 44B9L, 434-9, NonHyun-Dong, Namdong-Gui Incheon, 405-848, Республика Корея
Телефон: +82-10-5474-0945, факс: +82-32-812-6645

ПРОДУКЦИЯ

Позиционеры и датчики положения серии EPR/EPL, SS2L/SS2R, SS3L/SS3R, LSB-7xxx, LSB-3xxx
Серийный выпуск.

КОД ТН ВЭД ТС 9032 89 000 9

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ Технического регламента Таможенного союза «О безопасности оборудования для работы во взрывоопасных средах» (ТР ТС 012/2011); ГОСТ Р МЭК 60079-0-2011, ГОСТ IEC 60079-1-2011, ГОСТ Р МЭК 60079-11-2010, ГОСТ Р МЭК 60079-18-2012

СЕРТИФИКАТ ВЫДАН НА ОСНОВАНИИ Протокол испытаний № 611/447-Ex от 13.10.2014 г., ИЛ ВО ЗАО ТИБР, рег. № РОСС RU.0001.21ГБ08 от 15.06.2011 г. Адрес: 301760, Тульская обл., г. Донской, ул. Горноспасательная, д. 1, стр. А, Россия, акт анализа состояния производства изготовителя № 447/АСП от 16.06.2014 г.

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Схема оценки (подтверждения) соответствия 1с
Сертификат действителен только с приложением (бланк № 0156374, 0156375, 0156376)

СРОК ДЕЙСТВИЯ С 19.11.2014 **ПО** 18.11.2019 **ВКЛЮЧИТЕЛЬНО**

М.П.

Руководитель (уполномоченное лицо) органа по сертификации (подпись) Д.С. Подсевалов (инициалы, фамилия)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) (подпись) М.В. Пономарев (инициалы, фамилия)

Бланк изготовлен ЗАО "ОПЦИОН", www.opcion.ru (лицензия № 05-05-09/003 ФНС РФ), тел. (495) 726 4742, Москва, 2013

ТАМОЖЕННЫЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ТС RU C-KR.ГБ08.В.00646

Серия RU № 0156374

1. Назначение и область применения.

Позиционеры серий EPR/EPL, SS2L/SS2R, SS3L/SS3R предназначены для преобразования управляющего сигнала (электрического или пневматического) в угол поворота исполнительного механизма.

Датчик положения LSB-3xxx, LSB-7xxx предназначены для регистрации состояния положения.

Позиционеры и датчики предназначены для применения во взрывоопасных зонах в соответствии с присвоенной маркировкой взрывозащиты.

2. Описание конструкции и средств обеспечения взрывозащиты.

Позиционеры серий EPR/EPL представляют собой алюминиевый корпус с антикоррозионным покрытием, внутри которого помещены электрические и механические части. На корпусе имеется блок индикаторов-манометров, визуальный индикатор положения (только для EPR/EPL), ЖК экран (только для SS2L/SS2R, SS3L/SS3R).

Датчик положения LSB-3xxx, LSB-7xxx представляет алюминиевый корпус с антикоррозионным покрытием, внутри которого помещены электрические части.

3. Специальные условия применения.

3.1. Позиционеры серий EPR/EPL, SS2L/SS2R, SS3L/SS3R, имеют риска разряда статического электричества, протирать только влажной тканью и обеспечить возможность стекания статического электричества.

3.2. У позиционеров серий EPR/EPL, SS2L/SS2R изоляция между искробезопасными цепями и корпусом не способны выдержать испытания 500 В на электрическую прочность. Это должно быть принято во внимание во время установки.

3.3. Позиционеры серий EPR/EPL, SS3L/SS3R запрещено открывать при возможности присутствии взрывоопасных газов или при существовании опасности воспламенения горючей пыли.

3.4. Позиционеры серий EPR/EPL, SS3L/SS3R и датчик положения LSB-7xxx имеют зазор меньше, чем максимально допустимый зазор, установленный ГОСТ IEC 60079-1-2011. Ответственность за недопущение превышения максимально допустимого зазора между корпусом и крышкой, возлагается на потребителя данного оборудования.

3.5. Датчик положения LSB-7xxx, LSB-3xxx имеют риски разряда статического электричества, протирать только влажной тканью и обеспечить возможность стекания статического электричества. Запрещено открывать при возможности присутствии взрывоопасных газов или при существовании опасности воспламенения горючей пыли.

4. Маркировка.

Маркировка, наносимая на оборудование должна включать следующие данные:

1) наименование изготовителя или его зарегистрированный товарный знак;
2) обозначение типа оборудования;
3) заводской номер;
4) номер сертификата соответствия;
5) маркировку взрывозащиты

Позиционеры серий EPR и EPL - **0 Ex ia IIC T6 Ga X/II Gb c T6 X**
1 Ex d mb IIC «T6/T5» Gb X/II Gb c T6/T5 X

Позиционеры серий SS2L/SS2R - **0 Ex ia IIC «T6-T5» Ga X/II Gb c T6-T5 X**

Позиционеры серий SS3L/SS3R – **1 Ex d IIC T6 Gb X/II Gb c T6**

Датчик положения LSB-7xxx - **1 Ex d IIB+H2 T6 Gb X**

Датчик положения LSB-3xxx - **1 Ex d IIC «T6/T5/T4 Gb» X**

6) изображение специального знака взрывобезопасности установлено в ТР ТС 012/2011 (приложение 2)

М.П.

Руководитель (уполномоченное лицо) органа по сертификации (подпись) Д.С.Подсевалов (инициалы, фамилия)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) (подпись) М.В. Пономарев (инициалы, фамилия)

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ТАМОЖЕННЫЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ТС RU C-KR.ГБ08.В.00646

Серия RU № 0156375

5. Основные технические данные.

5.1. Позиционеры серий EPR/EPL (0 Ex ia IIC T6 Ga X/II Gb c T6 X)

5.1.1. Искробезопасные параметры

Ui, В 28

Ii, мА 100

Pi, мВт 1

Ci ..... пренебрежимо мало

Li, мкГц 2

5.1.2. Входной/выходной сигнал, мА ..... 4 – 20

5.1.3. Температура окружающей среды, ^{0}C ..... от минус 20 до +70

5.2. Позиционеры серий EPR/EPL (1 Ex d mb IIC «T6/T5» Gb X/II Gb c T6/T5 X)

5.2.1. Температура окружающей среды, ^{0}C ..... от минус 40 до +55 (для T6), до +70 (для T5)

5.2.2. Входной/выходной сигнал, мА ..... 4 – 20

5.2.3. Входной сигнал, В (DC) 24

5.2.4. Входной/выходной сигнал, В (AC) 125/250

5.2.5. Входной/выходной сигнал, В (DC) 125/250

5.2.6. Степень защиты оболочки по ГОСТ 14254-96 ..... IP66

5.3. Позиционеры серий SS2L/SS2R (0 Ex ia IIC «T6-T5» Ga X/II Gb c T6-T5 X)

5.3.1. Искробезопасные параметры

(Port 1)

Ui, В 28

Ii, мА 93

Pi, мВт 651

Ci, нФ 23

Li, мкГц ..... пренебрежимо мало

(Port 2)

Ui, В 28

Ii, мА 93

Pi, мВт 651

Ci, нФ 22

Li, мкГц ..... пренебрежимо мало

(Port 4-1)

Ui, В 28

Ii, мА 93

Pi, мВт 651

Ci, нФ ..... пренебрежимо мало

Li, мкГц ..... пренебрежимо мало

5.3.2. Входной/выходной сигнал, мА ..... 4 – 20

5.3.3. Температура окружающей среды, ^{0}C ..... от минус 40 до +40 (для T6), до +80 (для T5)

М.П.

Руководитель (уполномоченное лицо) органа по сертификации — (подпись) — Д.С.Подсевалов (инициалы, фамилия)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) — (подпись) — М.В. Пономарев (инициалы, фамилия)

Бланк изготовлен ЗАО "ОПЦИОН", www.opcion.ru (лицензия № 05-05-09/003 ФНС РФ), тел. (495) 726 4742, Москва, 2013

ТАМОЖЕННЫЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ТС RU C-KR.ГБ08.В.00646

Серия RU № 0156376

5.4. Позиционеры серий SS3L/SS3R – (1 Ex d IIC T6 Gb X/II Gb c T6)
5.4.1. Входной/выходной сигнал, мА ..... 4 – 20
5.4.2. Входной сигнал, В (DC) 24
5.4.3. Входной/выходной сигнал, В (AC) 250
5.4.4. Входной сигнал, В (DC) ..... 9 – 32
5.4.5. Max/min токи, мА 3,6/50
5.4.6. Степень защиты оболочки по ГОСТ 14254-96 ..... IP66
5.4.7. Температура окружающей среды, ^{0}C ..... от -30 до +75
5.5. Датчик положения LSB-7xxx – (1 Ex d IIB+H2 T6 Gb X)
5.5.1. Напряжение, В ..... 220 (AC)/110(AC)/24 (DC)/48(DC)
5.5.2. Степень защиты оболочки по ГОСТ 14254-96 ..... IP67
5.5.3. Входной/выходной сигнал, мА ..... 4 – 20
5.5.4. Входной/выходной сигнал, В ..... 8(DC)/8.2(DC)/24(DC)/30(DC)/120(AC)/125(AC)/240(AC)/250(AC)
5.5.5. Температура окружающей среды, ^{0}C ..... от минус 30 до +75
5.6. Датчик положения LSB-3xxx – (1 Ex d IIC «T6/T5/T4 Gb» X)
5.6.1. Напряжение. В ..... 220 (AC)/110(AC)/24 (DC) /48(DC)
5.6.2. Степень защиты оболочки по ГОСТ 14254-96 ..... IP67
5.6.3. Входной/выходной сигнал, В ..... 8(DC)/8.2(DC)/24(DC)/30(DC)/120(AC)/125(AC)/240(AC)/250(AC)
5.6.4. Температура окружающей среды, ^{0}C .от минус 40 до +75(для T6), до +80 (для T5), до +125 (для T4)

При внесении изготовителем в конструкцию и (или) техническую документацию, подтверждающую соответствие оборудования и (или) Ex-компонента требованиям ТР ТС 012/2011, изменений, влияющих на показатели взрывобезопасности оборудования, он должен предоставить в ОС ВО ЗАО ТИБР, описание изменений, техническую документацию (чертежи средств обеспечения взрывозащиты) с внесенными изменениями и образец для проведения дополнительных испытаний, если ОС ВО ЗАО ТИБР посчитает недостаточным проведение только экспертизы технической документации с внесенными изменениями для принятия решения о соответствии оборудования и (или) Ex-компонента ТР ТС 012/2011 с внесенными изменениями.

М.П.

Руководитель (уполномоченное лицо) органа по сертификации (подпись) Д.С.Подсевалов (инициалы, фамилия)

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Бланк изготовлен ЗАО "ОПЦИОН", www.opcion.ru (лицензия № 05-05-09/003 ФНС РФ), тел. (495) 726 4742, Москва, 2013

CONFLOW s.p.a.
Via Lecco 69/71
20041 AGRATE BRIANZA (MI) - ITALY

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV ISO 9001

CE

DICHIARAZIONE DI CONFORMITA'
AI SENSI DELLA DIRETTIVA EUROPEA "ATEX" N° 94/9/CE (allegato X punto B.)
Declaration of conformity according to
ATEX DIRECTIVE N° 94/9/CE (Annex X point B.)

A. **Descrizione / Description : Posizionatoe Pneumatico Pilota Tipo :**
Pneumatic Pilot Positioner Type :

PPL – EX (Tipo Lineare – Linear Type)
PPR – EX (Tipo Rotante – Rotary Type)

B. **CLASSIFICAZIONE secondo Allegato I : Gruppo 2 Categoria 2 G / D c IIC X**
CLASSIFICATION according ANNEX I : Group 2 Category 2 G / D c IIC X

CE II 2GD c IIC X Ex

TEMPERATURA AMBIENTE : -20°C ≤ Ta ≤ +70°C
AMBIENT ACTUATOR TEMPERATURE

C. **Procedure di valutazione di conformità utilizzata :**
Capitolo II, Articolo 8, lettera b), lettera ii) ALLEGATO VIII – Modulo A+

Conformity Assessment procedures followed :
Chapter II, Article 8, section b), section ii) ANNEX VIII – Modul A+

D. **Nome e Numero dell'ente che detiene il fascicolo tecnico N° PPLEXPPREX/ATEX/2006 :**
Name and Number of Notified Body where is manteined the technical documentation N° PPLEXPPREX/ATEX/2006 :

CE **0496 – DNV** MODULO UNO S.c.a.r.l. – Via Cuorgnè, 21 10156 TORINO

Per quanto esposto si dichiara che gli apparecchi descritti al punto A, classificati secondo il punto B e valutati in accordo al punto C, soddisfano i requisiti essenziali di sicurezza previsti nell'allegato II della Direttiva 94/9/CE e ad essa applicabili.

We declare that the equipments mentioned on above point A, classificated according to point B, valuated according to point C, are conformed to the most essential safety requirements as required by Directive 94/9/CE annex II.

CONFLOW s.p.a.
Firma del Costruttore / Manufacturer Signature

Data di rilascio 08/05/07
Date of Issue

CONFLOW s.p.a.

FLOW CONTROL SOLUTIONS

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