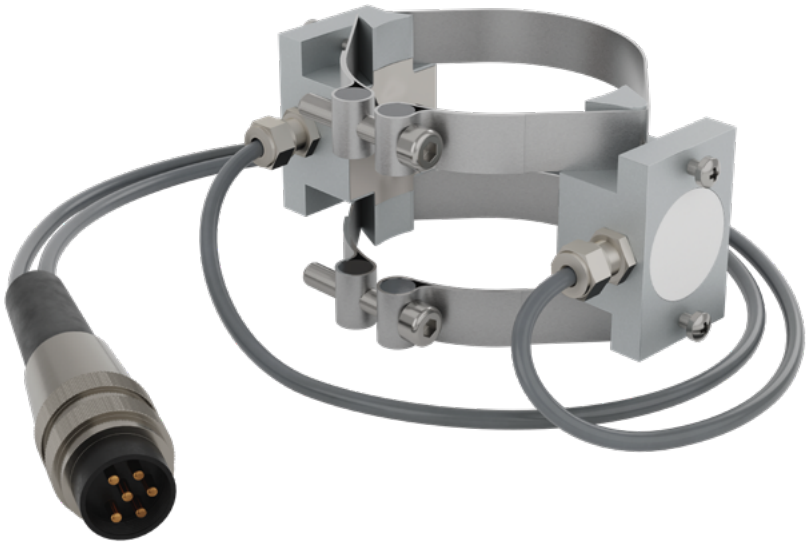
GEFRAN

GE1029

TIE-BAR STRAIN SENSOR

Operating Manual



C.0117_v1.0

WEEE Information

IT

“Attuazione della direttiva 2012/19/UE sui rifiuti di apparecchiature elettriche ed elettroniche (RAEE)”

Il simbolo del cassonetto barrato riportato sull’apparecchiatura o sulla sua confezione indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti.

La raccolta differenziata della presente apparecchiatura giunta a fine vita è organizzata e gestita dal produttore.

L’utente che desideri disfarsi dell’apparecchiatura dovrà quindi contattare il produttore per ricevere indicazioni sul sistema da quest’ultimo adottato per consentire la raccolta separata dell’apparecchiatura giunta a fine vita.

L’adeguata raccolta differenziata per l’avvio successivo dell’apparecchiatura dismessa al riciclaggio, al trattamento e allo smaltimento ambientalmente compatibile contribuisce ad evitare possibili effetti negativi sull’ambiente e sulla salute e favorisce il reimpiego e/o riciclo dei materiali di cui è composta l’apparecchiatura.

EN

“Implementation of Directive 2012/19/EU on waste electrical and electronic equipment (WEEE)”

The symbol showing a crossed-out wheeled bin

on equipment or its packaging indicates that the product must be collected separately from other waste at the end of its useful life.

The manufacturer is responsible for organising and managing the separate collection of this piece of equipment at the end of its useful life.

Users wishing to dispose of the equipment must therefore contact the manufacturer to obtain instructions from the same on how to have the equipment collected separately at the end of its useful life.

By collecting the disused equipment separately, it can be recycled, treated or disposed of in an environmentally friendly manner, thus helping to prevent the environment and public health from being affected negatively and enabling reuse and/or recycling of the materials forming the same equipment.

DE

„Umsetzung der Richtlinie 2012/19/EU über Elektro- und Elektronik-Altgeräte (EEA)“

Das Symbol der durchgekreuzten Mülltonne auf dem Gerät oder der Geräteverpackung weist darauf hin, dass Sie das Produkt am Ende seines Lebenszyklus separat entsorgen müssen.

Die Getrenntsammlung dieses Geräts an seinem Lebenszyklusende wird vom Hersteller organisiert und besorgt.

Der Nutzer, der das Gerät entsorgen möchte, muss sich daher an den Hersteller wenden, um Auskunft über seine Vorgehensweise zur Getrenntsammlung des Geräts an dessen Lebenszyklusende zu erhalten.

Die entsprechende Getrenntsammlung für die anschließende Zuführung des Altgeräts zum Recycling, zur Wiederaufbereitung und zur umweltverträglichen Entsorgung trägt dazu bei, negative Auswirkungen auf die Umwelt und die Gesundheit zu unterbinden und begünstigt die Wiederverwendung und/oder das Recycling von Werkstoffen, aus denen das Gerät besteht.

FR

“Transposition de la Directive 2012/19/UE relative aux déchets d’équipements électriques et électroniques (RAEE)”

Le pictogramme de la poubelle barrée, figurant sur l’équipement ou sur son emballage, indique que le produit en fin de vie doit être traité séparément des autres déchets.

Le ramassage sélectif de cet équipement en fin de vie est organisé et géré par le constructeur.

Tout utilisateur qui souhaiterait se débarrasser de l’équipement devra donc contacter le constructeur pour obtenir des informations concernant la méthode adoptée pour permettre le ramassage sélectif de l’équipement en fin de vie.

Un ramassage sélectif correct, en vue de l’acheminement de l’équipement vers des opérations de recyclage, de traitement et de mise au rebut respectueuses de l’environne-ment, contribue à réduire les impacts poten-tiellement néfastes sur l’environnement et la santé, outre à favoriser la réutilisation des matériaux/composants dont l’équipement est constitué.

GE1029
TIE-BAR STRAIN SENSOR

Main features:

- Direct measurement of surface strain
- Quick and easy non-destructive assembly
- High accuracy and linearity in tension and pressure (like bonded strain gauges)
- Ideal for use on presses, injection-moulding and die-casting machines
- One system for many different tie bar diameters (25…400mm)
- Dynamic applications
- Without amplifier (passive)
- Ideal for online monitoring of clamping force
- Ideal for self-made load cells

Product description

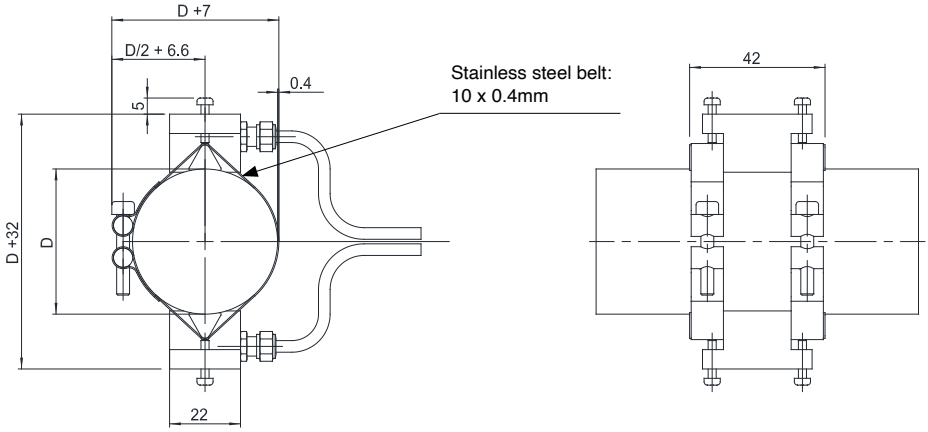
The strain gauge sensor GE1029 measure the surface-strain directly at the mounting location in the same quality as bonded strain gages. The press-on technology, developed by Gefran Schweiz AG, presses the strain gauges under the stainless protective film so strongly against the surface to be measured that frictional contact occurs.

The sensor does not have to be recalibrated between remove and re-installation. The sensor is mounted using stainless steel straps, is non-destructive, very fast and simple. For each tie-bar diameter outside tolerance of ± 2.5mm a different pair of steel straps is required. The sensor can not be overloaded. The GE1029 sensors require a cyclic reset.

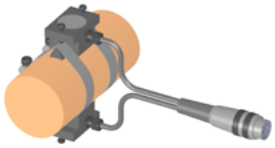
Technical Data	
Strain gauge type	Foil (GF = 2.0)
Bridge resistance	350Ω
Measuring range	± 1000 με
Sensitivity tolerance	± 0.2%
Transverse sensitivity	0.9 ± 0.2 %
Accuracy	<± 0,5% FS
Linearity	<± 0,5% FS
Hysteresis	<± 0,2% FS
Repeatability	< 0,1% FS
Supply voltage	5VDC (max. 8VDC)
Supply current	< 15mA
Operating temperature range	-20...+70°C
Storage temperature range	-20...+70°C
Overload capabilitiy	indefinite (offset occurs)
Protection class	IP64
Case material	Anodised aluminium
Weight, including cable	200g

Dimensions

Installation requirements	
Press-on torque (M4 screws)	**2.0 Nm**
Surface installation spot	**N7**



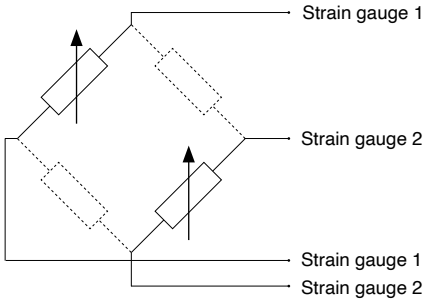
Application: Self-made load-cell



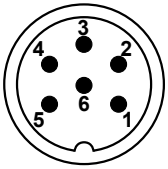
Dimensions in mm

Electrical Connection

2/4 Bridge

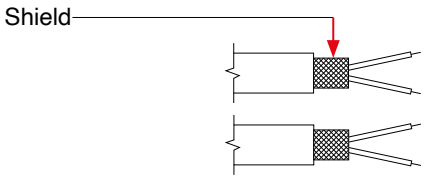


Option C: cable with connector



Option C Connector Pin	Option O open leads	Function
1	red	Strain gauge1
2	red	Strain gauge1
3	-	n.a.
4	yellow	Strain gauge 2
5	yellow	Strain gauge 2
6	-	n.a.

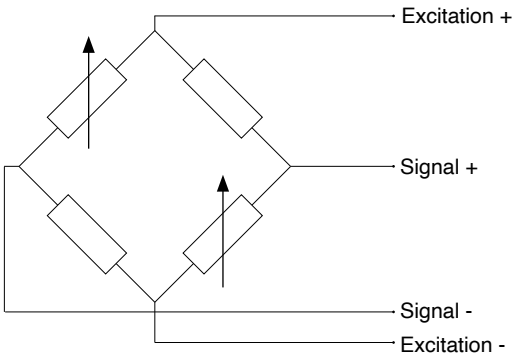
Option O: cable with open leads



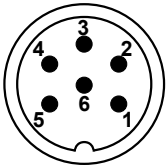
2x PVC screened cable (standard); 2 x 0.14 mm§; Ø 3.5mm

Electrical Connection

4/4 Bridge



Option C: cable with connector



Option C Connector Pin	Function
1	Excitation +
2	Excitation +
3	Excitation -
4	Signal +
5	Signal -
6	Excitation -

Assembly

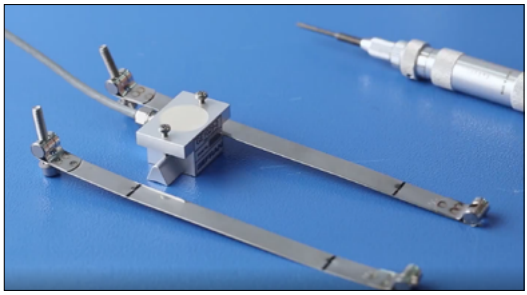
These sensors are precision instruments. The devices must be handled with the appropriate care. These instructions must be read and understood by every user.

Preparation

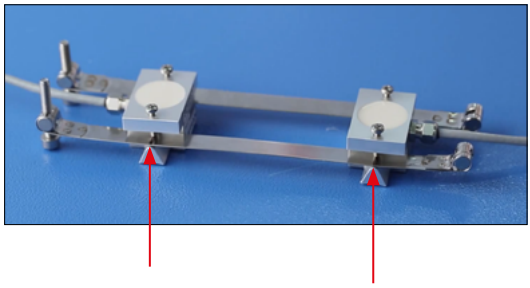
- Oil and other surface impurities as well as paint must be removed from the place of installation.
- The surface roughness of the place of installation has not to be rougher than N7.
- Check the foil of the sensor GE1029 for damage.
- The foil of the sensor GE1029 must be absolutely clean.

Assembly procedure

1.
There are markings on the stainless steel bands.
(The distance between these markings depends on the diameter of the object to be measured)



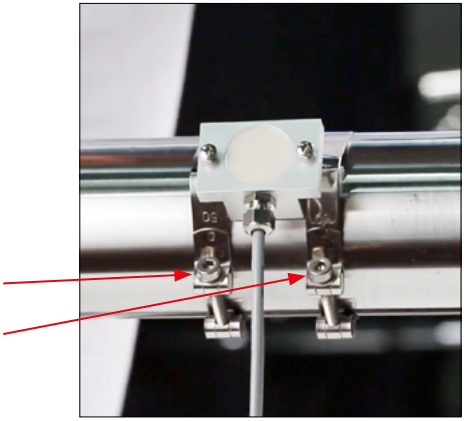
2.
The stainless steel strips are fixed at the marked position with the individual measuring modules.



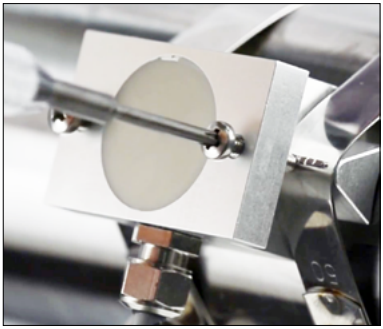
3.
Place the sensor around the object to be measured and screw it on carefully.

Do not tighten with final torque yet!

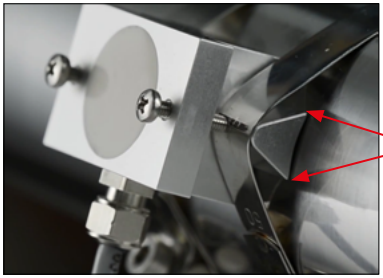
Cables must not be jammed.



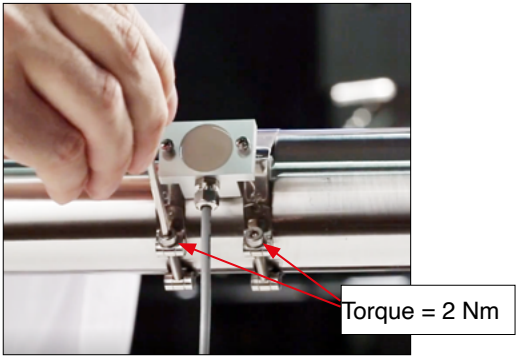
4.
Slightly loosen the fixing so that the individual measuring modules can rest perfectly on the circumference of the measuring object.



5.
The contact points must lie exactly in the axial direction on the surface to be measured.



6.
Screw the sensors hand-tight.
Torque = 2 Nm
The two measuring modules must be exactly opposite each other.



The system is now ready to measure.

Attention:
It is important that the screws are checked with the above torque after the machine has warmed up or after two days of operation at the latest.

Maintenance

4.1 Inspection

To prevent damage to the film, it should always be checked before using the sensor. Remove any impurities immediately.

4.2 Maintenance

The sensor GE1029 should be checked every 12 months. For maintenance the sensor must be sent to Gefran Schweiz AG.

GEFRAN

GEFRAN spa
via Sebina, 74 - 25050 Provaglio d'Iseo
(BS) - ITALIEN
Tel.: +39 030 9888.1 - Fax: +39 030 9839063
Internet: www.gefran.com

Gefran Schweiz AG
Steigweg 8, - CH-8355 Aadorf, Schweiz
Tel.: +41 52 523 25 00
Fax: +41(0)52-3661884
Internet: www.gefran.com

06-2025