



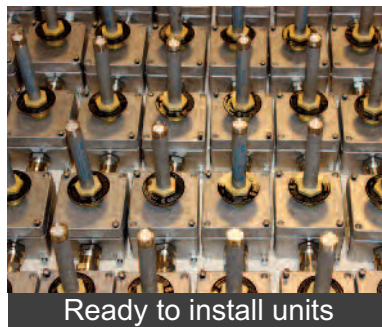
LICO[®]



LICO Heat Detector & Prevent a Fire Catalog 2015

Detect Heat and prevent Overheat, Fire, Explosion
with custom made Industrial Heat & Fire Detectors from 60 °C - until 510 °C

Version 2.4 - 03.2015



LICO develops and manufactures in the EU

LICO Electronics GmbH
Klederinger Str. 31, A-2320 Kledering, Austria
Tel: +43 1 706 43 000 Email: office@lico.at

LICO Hungaria Kft
Raba u.4, H-2030 Erd, Hungary
Tel: +36 23 520 113 Email:sales@lico.hu

HDL 1-7 Heat Detector LICO - Ex e, Ex d OverHeat- Heat & Fire-Detectors



HDL-2



HDL-3



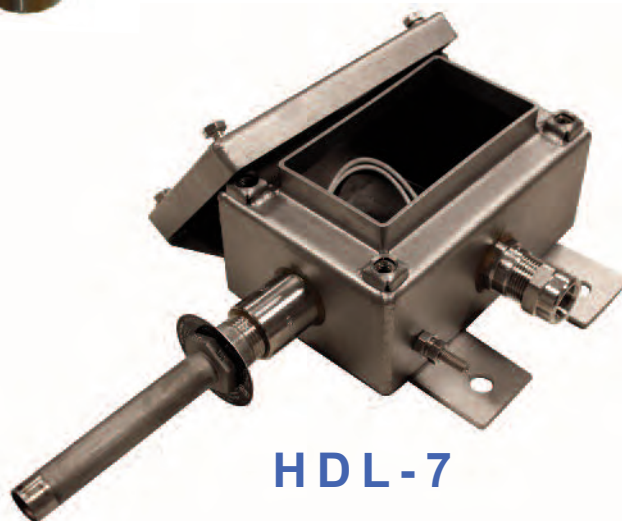
**HDL-5-
28000**



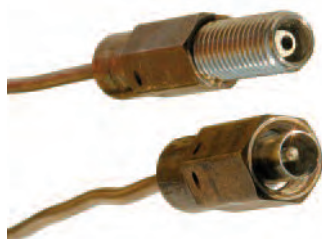
HDL-5



HDL-6



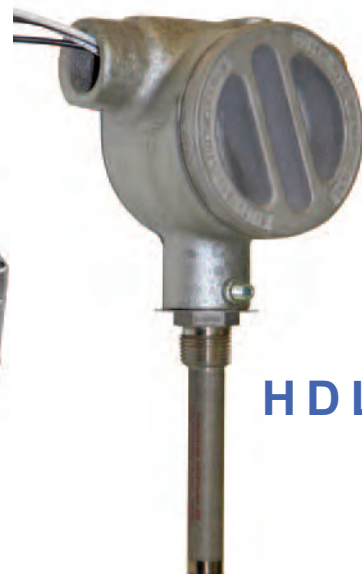
HDL-7



**CFD-
Inconelwire**



HDL-3-XL



HDL-4



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HDL-2



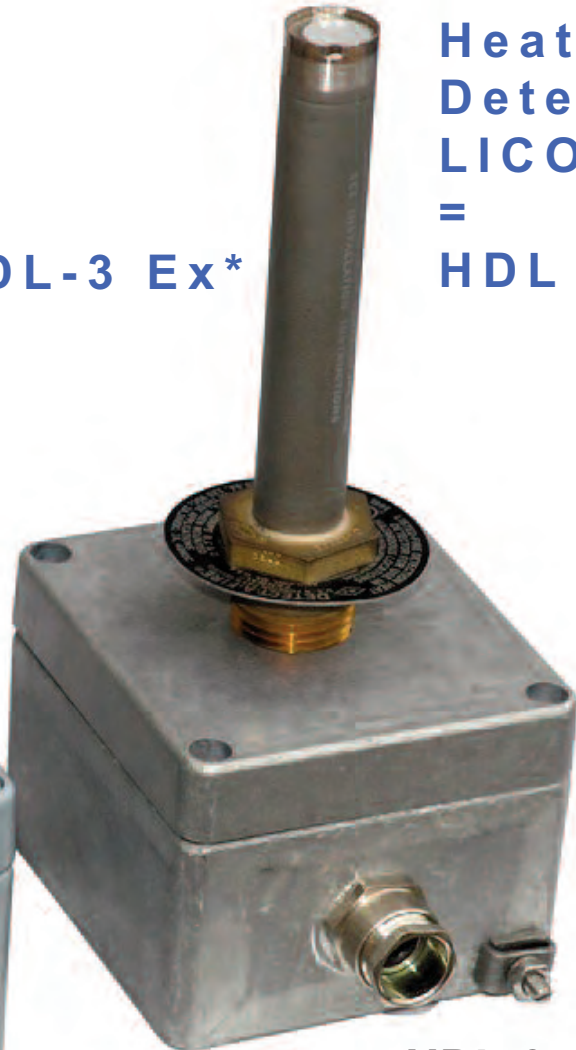
HDL-2

IP65/IP66 – CE

– 30 / + 80°C with Neoprene seal

– 30 / +130°C with Silicone seal, IP67

HDL-3 Ex*



Heat
Detector
LICO
=
HDL

HDL-3 – Ex*,

IP66/67 – CE

IP68 - on request

Ex until 135°C

– 70 / +220°C with special Silicone seal, IP66/IP67

•*Mounted in Ex-cert. Box with

Ex.cert. cable gland, Ex-cert wiring block,

• also available as HDL3 without Ex

Information for all HDL: (HDL = Heat Detector LICO)

Heat detector for special applications

Automatic Reset after cooling

Switching contacts hermetically sealed (IP67)

Resistant against Dust and Humidity

Heat Detector for Fire Alarm Systems

Shock-Humidity-& Temperature resistant

Different Alarm temperatures

from 60°C to 385°C

HDL-2 & HDL-3 Heat Detector LICO with Ex certified Components

HDL-2 Designed and made in EU

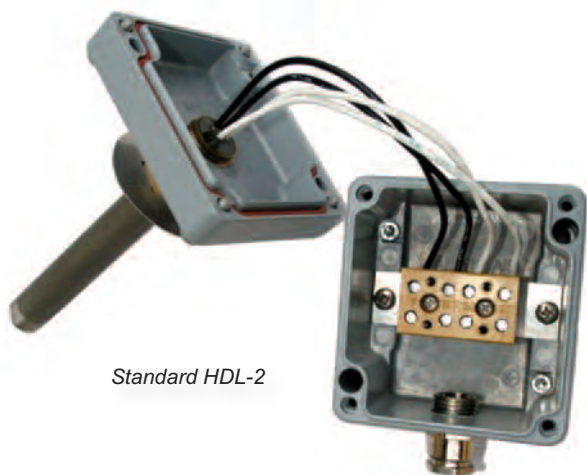
Fenwal DAF mounted in Industrial-Alu Box,
Fully assembled according to IEC standards.

Complete and ready to install Heat Detector with Box,
Cable gland and wiring block assembly.

- Precision Cast AISI12 (LM24) Aluminium Alloy painted epoxy polyester grey (RAL7001)
- Sealing: Neoprene, Silicone (on request)
- up to 80°C/130°C
- 2 Ground terminals inside
- 1 or 2 Cable glands. Metal housing
- Dimensions Housing:
80x75x57 mm (l/w/h), weight: 290 g
- recessed Screws
- Removable lid
- IP66/67, IP68 on request

Options:

- oil-resistant mounting of Heat Detector and Cable gland
- 2. Cable gland (Option KD)
- Series und EOL – End of Line Resistors



Standard HDL-2

HDL-2 Enclosures fulfill the requirement of:

Ingress Protection - IP67,
and any normal/low temperature industrial and commercial use

(for further info and actual certificate please contact LICO)

HDL-2 & HDL-3 Standard and XL Size junction box Dimensions:

HDL-2 & HDL-3	Outside L.	Outside W.	Inside L.	Inside W.	Height
Standard	75	80	63	52	57
XL	125	80	113	52	57

HDL-3 – Ex*, Designed and made in EU

Fenwal DAF mounted in Ex certified Industrial-Alul Box,
Fully assembled according to IEC standards.

Complete and ready to install Heat Detector with Ex-certified
Box, Cable gland and wiring block assembly.
Fully assembled according to IEC standards.
Resistors available according to Ex.

- Fenwal-Switch free of Choice
 - Precision Cast AISI12 (LM24) Aluminium Alloy housing
 - High Temperature-Silicone-seal
 - T3 Ex certified box, up to 130°C,
Temp use up to 200°C + with Cer.block
 - 1 Ground terminal outside of box
 - 3 Ground terminals inside of box (2 body, 1 lid)
 - 1 or 2 Cable glands. Metal housing
 - Enclosure Dimensions: 80x75x57 mm (l/w/h), weight: 290 g
 - recessed Screws
 - Removable lid
- Cabling: up to 190°C:Teflon, over 190°C:TGGT

*Housing Ex-certified:

- Ex II 2 GD, Ex e/ib IIC Gb, Ex tb IIIC Db IP6X*
 - 40°C /+80°C with Neoprene seal,
 - 70°C/+130°C with Silicone-seal,
 - IP66/67, IP68 on request
- or an equal Version
Wiring Terminal: acc. Ex

Standard Cable gland variations: SEE ON PAGE 18

- 20 - + 80°C with Neoprene seal, IP66/68
- 40 - +100°C with EPDM-seal, IP66/68
- 70 - +220°C with Silicone-seal, IP66/68

Options:

- oil-resistant mounting of Heat Detector and Cable gland
- 2. Cable gland (Option KD)
- Series and EOL – End of Line Resistors

HDL-3 Enclosures Certified according to:



Ex II 2 G D, Ex e/ib IIC Gb, Ex tb IIIC Db IP6X *
Ex e II T* Gb or Ex ib IIC T* Gb

(for further info and actual certificate please contact LICO)

For bespoken, custom made boxes please contact LICO

HDL-4-Ex*, Designed and made in EU 

60 – 135 °C or 60 - 210/220 °C max
The TRUE High-Temp-Heat Detector

Complete and ready to install Heat Detector with Ex proofed Box, Cable gland and wiring block assembly.
 Fully assembled according to IEC standards.
 Free Choice of Fenwal Detect-A-Fire switches,
 Temperature range: 60 – 232°

Product description:

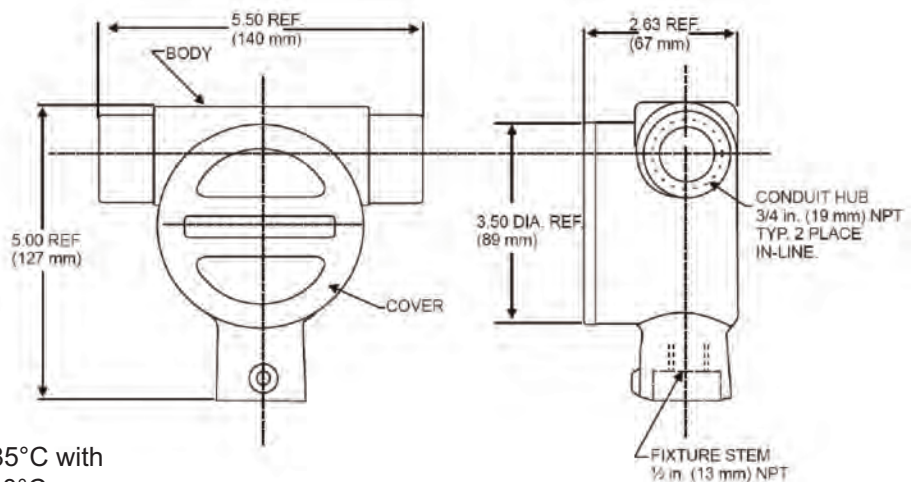
- Fenwal-Switch free of Choice
- Materials: Body - Feraloy Cover: Copper-free aluminium
- Enclosure Dimensions: ca 140 x 127 x 67 mm, weight: ca. 950 g
- Finishes: Body - Electro-galvanize and aluminium acrylic paint: Natural
- Opening: Screw down Lid, fixing screw (imbus)
- Built in grounding terminal
- Entries: 2 x 3/4" NPT and 1 x 1/2" NPT
- 1 or 2 Cable Glands free of choice



Standard HDL-4

HDL-4 ,
 385/510°C-VHT,

the Very High-Temperature-solution based on Fenwal 116317/ Cooper Housing and Fenwal Detect-A-Fire-Sensors



HDL-4 with 250°C 3/4" NPT-Flextube or 385°C with solid 3/4" NPT-Iron-tube and even up to 510°C

For Details consult LICO 116317 Data-sheet.

T-max 510°C with iron-tube and extra long Heat-Detector cables or 200°C with Std-Ceramic wiring block or 385°C with Special V2A Wiring-Block or 510C with Fenwal Special Temperature switch



ATEX and IP-rated High-temperature - tubes on request



HDL-4 enclosures comply with NEC Class 1, Group A, B, C, D

- Class II, Group E,F, G
- Class III,
- UL, Standard 886

HDL-5-Ex*, 60 – 135 °C or 60 - 210/220 °C max The TRUE High-Temp-Heat Detector

Designed and made in EU



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Complete and ready to install Heat Detector with Ex-certified Box, Cable gland and wiring block assembly.

Fully assembled according to IEC standards.

Free Choice of Fenwal Detect-A-Fire switches,
Temperature range: 60 – 232°

Product description:

- Fenwal-Switch free of Choice
- Precision Cast AISI12 (LM24) Aluminium Alloy housing,
- Enclosure Dimensions: 120 x 122 x 80 mm, weight: 940 g
- High Temperature-Silicone-seal,
- 1 Ground terminal outside of box
- 3 Ground terminals inside of box (2 body, 1 lid)
- 1, 2 or more Cable Glands
- Ceramic wiring Block with only stainless parts Ex.until 130-210°C
- IP66/67, IP68 on request

Ex-until 210°C / 220°C max Surface-temperature
Max. Surface short Peak temperature: 220-230°C

Ex-Certified:

Housing, Cable Gland, Cermaic Wiring block
Fenwal Sensor: FM or ATEX certified

Standard Cable gland variations: **SEE ON PAGE 18**

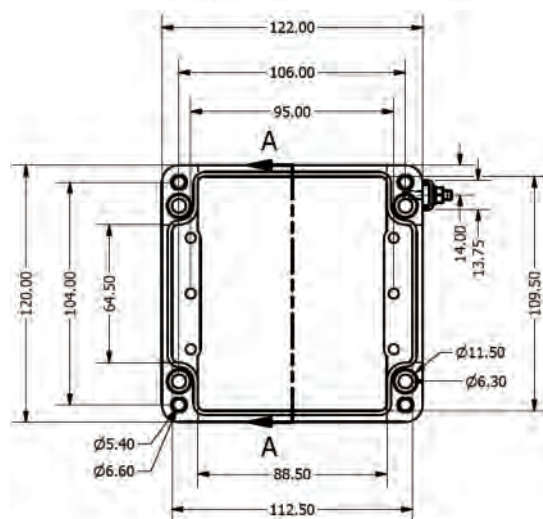
- 20 - + 80°C with Neoprene seal, IP66/68
- 40 - +100°C with EPDM-seal, IP66/68
- 70 - +220°C with Silicone-seal, IP66/68

Options:

- oil-resistant mounting of Heat Detector and Cable gland
- 2. Cable gland (Option KD)
- Series and EOL – End of Line Resistors



Standard HDL-5



Dimensions in mm

HDL-5 Enclosures Certified according to:



Ex II 2 G D, Ex e/ib IIC Gb, Ex tb IIIC Db IP6X *
Ex e II T* Gb or Ex ib IIC T* Gb

(for further info and actual certificate please contact LICO)

Bespoken Custom-made:

Free Choice of Fenwal Detect-a-Fire Sensor
1 or 2 Cable Glands,
1,2,3,4 or 5 Ceramic Wiring blocks,
EOL and/or Series Resistors



Standard HDL-5



HDL-5 for through-mount,
Serie 28000

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HDL-6-Ex* , Designed and made in EU



*Free Choice of Fenwal Detect-A-Fire switches,
Temperature range: 60 – 232°C
Mounted in Ex-cert. Box with Ex.cert. cable gland,
Ex-cert wiring block

For use in areas made potentially hazardous by the presence of flammable liquids, gases, vapours and dusts (Zones 1,2, 21 and Zone 22).
Certified for group IIC locations.

Product description:

Aluminium housing: 165 x 125 x 120 mm,
Material (Body & cover): Aluminium alloy EN AC-42000 (LM25) to BS EN 1706:1998 with less than 0.2% copper content,
Ingress protection: IP66
(Ex until 60 °C)
Weight: ca. 1,9 kg

Paint:

Chromate primed and polyester powder coated for added protection against corrosion

Ex-Certified:

Housing, Cable Gland, Cermaic Wiring block
Fenwal Sensor: FM or ATEX certified

Standard Cable gland variations: **SEE ON PAGE 18**

- 20 - + 80°C with Neoprene seal, IP66/68
- 40 - +100°C with EPDM-seal, IP66/68
- 70 - +220°C with Silicone-seal, IP66/68

Options:

- oil-resistant mounting of Heat Detector and Cable gland
- 2. Cable gland (Option KD)
- Series and EOL – End of Line Resistors

HDL-6 Enclosures Certified according to:



Ex II 2 G Ex d IIC Gb Ta = -40 to + 60 °C*
II 2 D Ex tb IIIC Db*

(*for further info and actual certificate please contact LICO)

Bespoken/Custom-made:

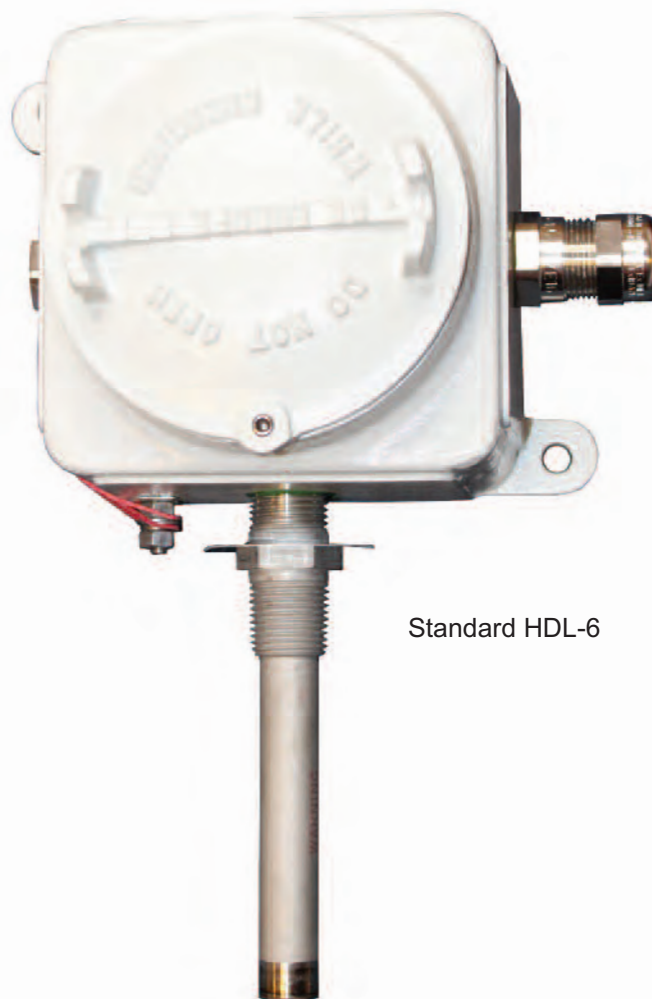
Fenwal-Switch of free Choice
1 or 2 Special-Stainless steel or Ni-brass Cable Glands
Ceramic wiring Block with only stainless parts for 130-220°C
Internal and external ground-terminal
Optional: Series or EOL-Resistors

Applications:

- Ex "d" flameproof Applications
- Gasturbine houses and applications
- Marine applications

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Standard HDL-6

Protection:

When fitted with a gasket - IP66
Without gasket - IP54
Application of a non hardening grease to flamepaths and entries is recommended.

Earthing:

All enclosures are supplied with a 6mm stainless steel (18/8) internal and external earth stud as standard.
Larger internal earth terminals can be fitted on request.

Dimensions & Material:

Aluminium housing: 165 x 125 x 120 mm,
Material (Body & cover):
Aluminium alloy EN AC-42000 (LM25) to BS EN 1706:1998 with less than 0.2% copper content
Locking Screw: Stainless steel (18/8)

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HDL-7-EX*, Designed and made in EU 

210/220°C max

Free Choice of Fenwal Detect-A-Fire switches, Temperature range: 60 – 232°C

*Mounted in Ex-cert. Box with Ex.cert. cable gland, Ex-cert wiring block

Product description:

Stainless steel: 316 (1.4404) or Mild steel

Fenwal-Switch of free Choice

1 or 2 Special-Stainless steel

Ceramic wiring Block with only stainless parts for 130-220°C ATEX.

Internal and external ground-terminal

Optional: Series or EOL-Resistors

Cable glands for wire or wire & hose

Ex with Special Silicone sealing 210°C / 220°C max Surface-temperature

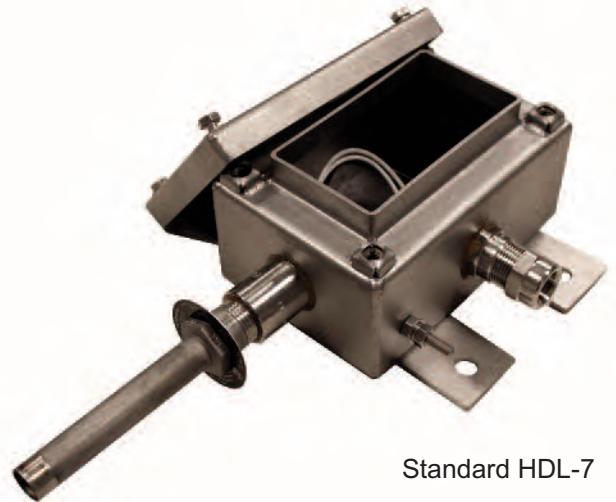
Max. Surface short Peak temperature: 220-230°C

Food Safe HDL-7 units can be made only with a special food safe glue from LICO

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HDL-7 Housing: Standard



Standard HDL-7

Look inside our FAT BOY HDL-7 Heat Detector:



HDL-7-"FAT BOY" Housing: XL

Dimensions: l/w/h:

152 mm, 152 mm, 126 mm

High Temperature-Silicone-sealing,

Appropriate stainless steel box

Weight: 2200 g

IP66 or IP67

Material: 316(1.4404) or Mild steel

Applications:

- Special areas where aggressive gases and moistures can corrode aluminum or other type of metals
- Food applications and
- Marine Applications



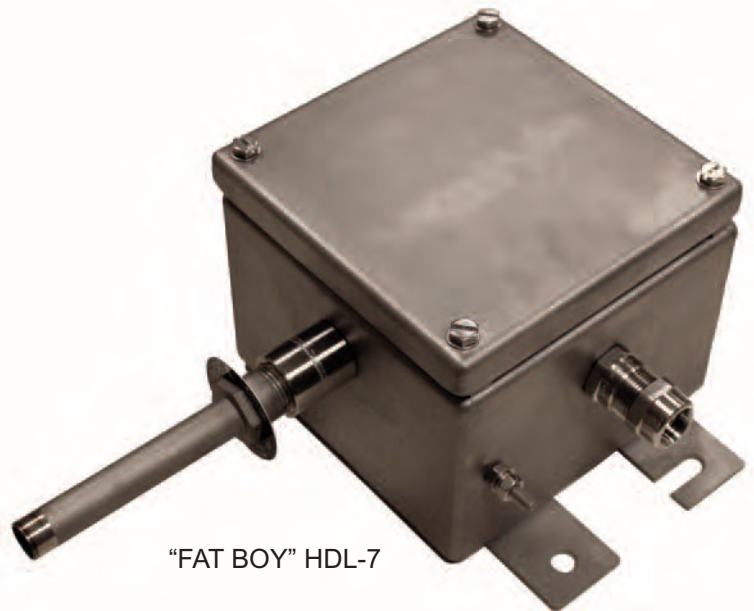
Dimensions: l/w/h:

152 mm, 102 mm, 126 mm

High Temperature-Silicone-sealing,

Appropriate stainless steel box,Weight: 1500 g

IP66 or IP67, Material: 316(1.4404) or Mild steel



"FAT BOY" HDL-7

HDL-7 Enclosures Certified according to:



Ex II 2 G D, Ex e/ib IIC Gb, Ex tb IIIC Db IP6X *
(for further info and actual certificate please contact LICO)

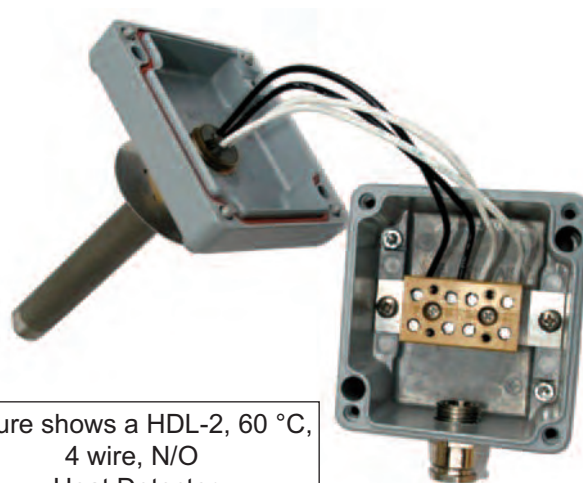
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Every Piece a Master-piece.

Easy installation!
 Solide Construction!
 2 Grounding Terminals are Standard
 VA-mounting screws

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Picture shows a HDL-2, 60 °C,
 4 wire, N/O
 Heat Detector

How to Order / How to create your own Heat Detector LICO:

Modell	Heat Detector +Temperature	Size of Housing	Cable gland + Cable diameter	IP	Optional
HDL -	2712x-0xx-xxx	S	1 - 6-8	IPxx	
-2 -3 -3 XL -4 -5 -6 -7	See Chart on Page 12	S: Standard or CM: custom	1. Number of Cable Glands 2. Cable diameter in mm	65 66 67 68	See Chart below

Optional:

- L : Lid grounded, special silicone covered grounding device
- OIL : Oil-resistant mounting of temperature-switch and cable gland
- S : Serie Line Resistors supplied or built in
- EOL : (End (End of Line)-Resistor, Value in Ohms
- A : Thread adapter built between the Sensor and the choosen junction box, used in very high temp applications
- WD : LICO Stainless steel Weld in Pod supplied or built in
- SC : LICO Stainless steel Screw in Pod supplied or built in
- HO: High Temperature O-ring
- C: Choosen CelsiStrip fixed in/on the wished junction box, see on page

Example for Ordering:

HDL-3-27121-000-140-S-1-4-8-IP66,
 HDL-7-28021-005-325-S-2-6-8-IP67-A

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Some information about the Application / Environment:

Example: - Place of use:
Owens, Driers, Air filter / Exhaust systems, Power plant, Factory lines, Marine, Chemical plants, Saunas, Windmills, Gasturbines, industrial etc.

Temperature under normal operation:

Wished Alarm Temperature:

HDL Part number:

Quantity (pcs):



LICO HDL Units are designed and assembled according to strict IEC standards:

- MSZ EN 60079-0:2013 (according to IEC 60079-0:2011 modified),
- MSZ EN 60079-0/A11:2014 (MSZ EN 60079-0:2013 modified)
- MSZ EN 60079-10-1:2009 (according to IEC 60079-10-1:2008)
- MSZ EN 60079-10-2:2010 (according to IEC 60079-10-2:2009)
- MSZ EN 60079-1:2008 (according to IEC 60079-1:2007)
- MSZ EN 60079-7:2007 (according to IEC 60079-7:2006)
- MSZ EN 60079-11:2012 (according to IEC 60079-11:2011)

We use these standards to make our Heat Detector units better and better for every individual application. Every LICO Heat Detector unit (HDL unit) is CE marked and checked in every detail.



This includes Equipment- and protection systems for dedicated and proper use in explosion-hazardous areas (94/9EG), as far as this regulation is applicable.

LICO Heat Detector Manufacturing and sales are ISO:9001 certified.

Made and designed in Hungary-EU

LICO Heat Detectors and Prevent-a-Fire Systems are mainly bespoke- custom made products. Everytime we plan and design our systems according to customers detailed specifications. To our experience there is no standard solution in Fire Prevention.

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Available Standard Part numbers for DAF-switches:

Single Thread units:

Brass & Stainless Steel or
Fully Stainless steel
N/C (2 wire) Opens at temperature rise or
N/C (4-wire) Closes at temperature rise



2-wire unit		4-wire unit		Nominal Switching temperature
N/C, Opens at Rise		N/O, Closes at Rise		
Sensor Housing Stainless Steel		Sensor Housing Stainless Steel		
Body Brass	Body Stainless	Body Brass	Body Stainless	
27120-000-140	27120-022-140	27121-000-140	27121-020-140	60°C / 140°F
27120-000-160	27120-022-160	27121-000-160	27121-020-160	71°C / 160°F
27120-000-190	27120-022-190	27121-000-190	27121-020-190	88°C / 190°F
27120-000-210	27120-022-210	27121-000-210	27121-020-210	99°C / 210°F
27120-000-225	27120-022-225	27121-000-225	27121-020-225	107°C / 225°F
27120-000-275	27120-022-275	27121-000-275	27121-020-275	135°C / 275°F
27120-000-325	27120-022-325	27121-000-325	27121-020-325	165°C / 325°F
27120-000-360	27120-022-360	27121-000-360	27121-020-360	187°C / 360°F
27120-000-450	27120-022-450	27121-000-450	27121-020-450	232°C / 450°F
		27121-000-500	27121-000-500	260°C / 500°F
		27121-000-600	27121-020-600	315°C / 600°F
		27121-000-725	27121-020-725	385°C / 725°F

Double Thread (Coumpling Head) units:

Fully Stainless steel
N/C (2 wire) Opens at temperature rise or
N/C (4-wire) Closes at temperature rise



Class 1, Group A requires fully Stainless-steel Fenwal DAF-versions !

2-wire unit		4-wire unit		Nominal Switching temperature
N/C, Opens at Rise		N/O, Closes at Rise		
Sensor Housing Stainless Steel		Sensor Housing Stainless Steel		
Body Brass	Body Stainless	Body Brass	Body Stainless	
	28020-003-140		28021-005-140	60°C / 140°F
	28020-003-160		28021-005-160	71°C / 160°F
	28020-003-190		28021-005-190	88°C / 190°F
	28020-003-210		28021-005-210	99°C / 210°F
	28020-003-225		28021-005-225	107°C / 225°F
	28020-003-275		28021-005-275	135°C / 275°F
	28020-003-325		28021-005-325	165°C / 325°F
	28020-003-360		28021-005-360	187°C / 360°F
	28020-003-450		28021-005-450	232°C / 450°F
			28021-005-500	260°C / 500°F
			28021-005-600	315°C / 600°F
			28021-005-725	385°C / 725°F



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Description of Rate Compensated Thermoswitches:

These highly reliable devices have been a standard of the industry for over 50 years. Many thousands of these units are now in use controlling the release of extinguishants such as clean agents, CO₂, water, or dry chemicals. In some systems the device is used as an ALARM device, to sense overheat or fire, and alert personnel. In other systems, it is used as a RELEASE device, to sense fire and actuate fire attack systems.

DETECT-A-FIRE units have met with wide acceptance because they are designed with RATE COMPENSATION. This provides a unique advantage over both fixed temperature and rate-of-rise types of detectors because only the DETECT-A-FIRE unit accurately senses the surrounding air temperature regardless of the fire growth rate. At precisely the predetermined danger point, the system is activated.

Fixed temperature detectors must be completely heated to alarm temperature and therefore a disastrous lag in time may occur with a fast rate fire. Rate compensated / Rate-of-rise devices, on the other hand, are triggered by the rate of increase in ambient temperature and could be subject to false alarms caused by harmless, transient thermal gradients such as the rush of warm air from process ovens.

Vertical Detect a Fire Units for Concealed and Exposed Wiring:

Vertical detectors are designed for use in both "ordinary" or "hazardous" locations. For "ordinary" use, they may be mounted to any appropriate tight metal junction box (preferred: solid Alu) with 7/8" diameter opening by using 1/2-14 NPT mounting nuts or into a 1/2"-14NPT thread. The device may be wired in or out of conduit, depending on local preference and codes. Four lead-wires are provided on normally open vertical units (that close on temperature rise), per UL requirement, to facilitate supervision of system wiring. Instruments are Underwriters Laboratory and Underwriters Laboratory of Canada listed and Factory Mutual approved for hazardous locations, when mounted in a suitable fitting.

Important Information:

The Detect A Fire Thermo Switch is a Sensible and Precise Electromechanical Safety Switch.

Do NOT paint and Do NOT let cover the Sensor with dirt or any material! In this case the Sensor must be cleaned on a regular basis. If the circumstances do not allow regular cleaning, **LICO Weld in Pod** or **Screw in Pod** spare parts are recommended.

Do NOT hit and Do NOT flood the Sensor and the HDL Unit. Any of these can change the switching effect of the Sensor. The Sensor and the HDL Unit shall be mounted only there where the Unit and the Sensor does NOT experience strong and/or continuously mechanical and chemical effects!

Normally Detect a Fire Switches can be Normally Open or Normally Closed. Normally Open switches are used in release function, Normally Closed switches are used in alarm function.

Normally Closed switches do NOT meet the requirements of NFPA-72 for use as a releasing device.

Test Information:

The Fenwal DETECT-A-FIRE heat detector models are 100% factory tested and temperature calibrated. The units must actuate within the tolerances of the standard temperature settings listed before passing final QA acceptance. The units are calibrated and verified by controlling temperature in heat blocks. The units cycle for a minimum of 15 minutes and a minimum of 15 consecutive cycles of stable operation are recorded within specification before the unit is deemed accepted.

Warnings:

DO NOT overshoot the set point of the unit by more than 100°F = 55°C, this could result in a shift of the set point temperature.

DO NOT contact the sensing shell with heating device such as soldering iron or blowtorch as this will damage the unit and cause in a shift of the set point temperature.

While the DETECT-A-FIRE is a repeatable device, replacement is recommended should the unit be subjected to the intense heat of a fire.

17343-124 -xxx,

Temperatures: (100F), 140F - 725F, 60°C - 385°C
 Make in full stainless-steel
 Contacts N/O, close with increase of temperature
 Rating, 28VDC, 0,5A, 125VDC, 0,5A
 Mounting: ¾"-14 NPT

CE/ATEX Approved for Group II,
 Category 3 Gas, Type of protection: "nC"
 Unit is hermetically sealed.
 Datasheet on request



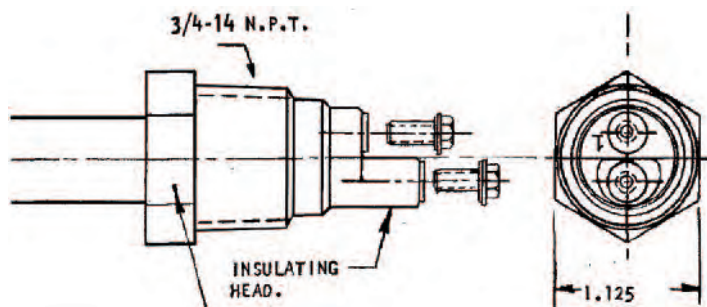
17343-124 140F, 60°C
 17343-124 325F, 165°C
 17343-124 425F, 218°C
 17343-124 600F, 315°C
 17343-124 725F, 385°C



17343-113 -600, 17343-113 -950

2 Temperatures: 600F, 950F = 315°C, 510°C
 Flamesafe bis 2000°F/1082 °C for short periods

600°F UL Listed for
 Class I Group A,B,C,D
 Class II, Groups E,F,G,
 For use in hazardous locations



CSA certified 600 + 950F,
 overheat Detector in
 hazardous locations.

Datasheet on request

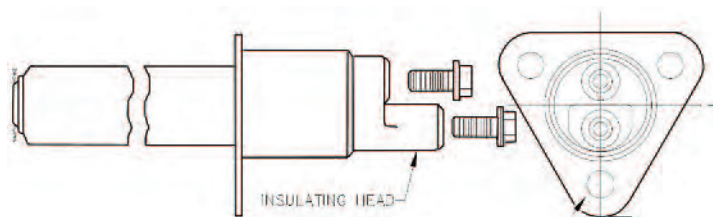
Rating, 125VDC, 1A
 Mounting: ¾"-14 NPT

Make in full stainless-steel
 Contacts N/O, close with increase of temperature

17343-78-500, -725, -900

3 Temperatures: 600F - 950F = 315°C, 385°C, 482°C. Flame safe until 2000°F/1082 °C for short periods
 17343-78 500F, 315°C
 17343-78 725F, 385°C
 17343-78 900F, 482°C

Make in full stainless-steel
 Contacts N/O, close with increase of temperature
 Rating: 28VDC, 3 A; 125VDC, 1A; 115VAC, 3A
 Temperature: Field adjustable, Mounting: plate
 Make in full stainless-steel
 Contacts N/O, close with increase of temperature





**HDL-3,
Main Data: T max: 135°C**

- Box: Alu or Stainless steel
- Dimension of Bx: 80x80x57mm or with
- XL-Box: 125x80x57mm für armoured Cable
- Cable Gland: 1 or 2 (optional)
- Ex-certified until 135°C: Cable Gland, Wiring Block, Box

HDL-5

For most simple mounting and installation with 1 or 2 Cable or Cable-hose Glands



*IP66 = Standard
Optional IP67/68,
Fenwal Sensor of Choice*

HDL-5-28000

The only HT, Hochtemperatur-HDL for Ex-CL1 with 1 or 2 Cable- or Cable-Hose-Glands



**All HDL Units
ARE UNIQUE,
CUSTOM BUILT !!**

**HDL-5,
Main Data: T max: 220°C**

- Box: Alu , 135°C ATEX, plus 220°C HT-Silikone-seal
- Dimension: 122x120x81mm
- ATEX-Cable-Cable-Hose Gland: ie Cable 5,5-8 mm or according request, ATEX 135°C or 220°C
- Wiring Block: Ceramic/Nickel/Stainless, ATEX
- Certifiable until 210°C: Wiring Block, T.max 500C

LICO optionally can mount Very High Temperature O-Rings of i.e. 220°C in lieu of the cert. O-Ring., Then the T.max of the unit can be i.e. 220°C, higher temperatures on request.



The fully mounted and in the Sytem installed Housing/unit mandatory has to be certified by an approved body to be in accordance with the existing ATEX-Norms, the simple Installation of an EX-certified Mounting Box does not stretch the ATEX approval of parts or units onto an entire system.

Option: Grounding Cable,

- L

Mounted inside the box to connect box and lid to avoid static charge during operation and opening.
High temperature-silicone Copper or Teflon- cable, massive constructions



CelsiStrip®

- C

Irreversible temperature recording labels.
Selfadhesive, easy applicable on any surface, extremely low cost temperature measurement for LICO HDL units.
Available from +40 °C (105 °F) to +260 °C (550 °F) and arranged in various combinations. Accuracy ±1,5 %.
Can be fixed easy inside or outside of the LICO Heat Detectors and junction boxes.

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
71	160	116	240	127	261	160	320	204	399	260	500
65	149	110	230	121	250	154	309	199	390	254	489
60	140	104	220	116	241	149	300	193	379	249	480
54	129	99	210	110	230	143	289	188	370	241	466
49	120	93	200	104	219	138	280	182	360	232	450
46	115	88	190	99	210	132	270	177	351	224	435
43	109	82	180	93	199	127	261	171	340	216	421
40	104	77	170	88	190	121	250	166	331	210	410
C1		C2		C3		C4		C5		C6	

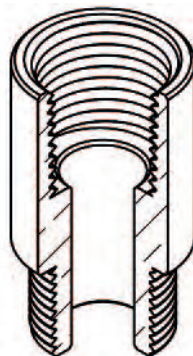
NPT-Elongation Adapter

- A

NPT-Elongation adapter to achieve a bigger distance between Sensor-switch and the HDL-box.
Box-mounting side is DIN thread with mounting nut
Mounting by special liquid thread lock,
Operation suitable up to 250°C

Designed and made in EU 

Sensing switch-side



Junction Box-side



www.prevent-a-fire.eu

Heat Detector Accessories: LICO Weld In Pod / Screw In Pod

A popular solution in gas, oil and chemical industry. Also widely used in hydraulics, frying and drying applications as well as in oven and heating controls.

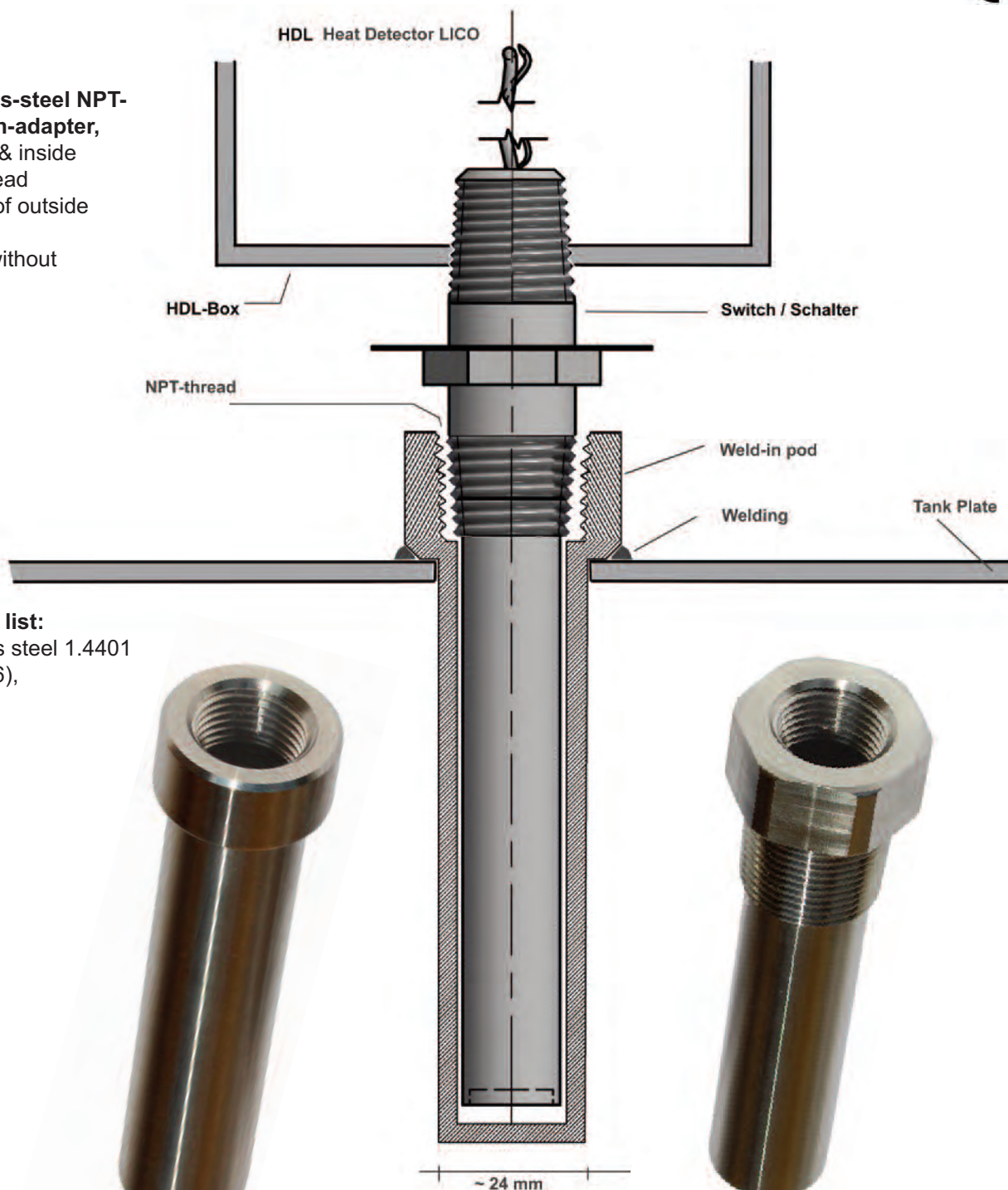
Easy installation!

Drilling the hole and welding in the weld-in pod allows easy installation and safe service without contact to the tank media.

Designed and made in EU



Option:
Stainless-steel NPT-
Screw-in-adapter,
Outside & inside
NPT-thread
instead of outside
weld-in.
with or without
hexagon



Material list:

Stainless steel 1.4401
(AISI 316),
or
S355

LICO Weld in POD

LICO Screw in POD

For ordering:

Please specify weld-in or screw-in type, material and shell thickness

www.prevent-a-fire.eu

A: Ex certified cable glands:

Basic-Standard: Brass-Ni-plated - BCG-Series,
Temperature: -20 °C until +80 °C
Sealing: Neoprene

LICO

www.prevent-a-fire.eu

Protection: IP66/68

Ex Zone: Ex II 2 GD, Ex e II, ex tD A21 IP66/68*

*(for further info & actual certificates please contact LICO)



Please find our standard marked in red

Material	Cable Gland Size	Sealing	Cable Diameter min-max in mm	Available Cylindrical Threads: ISO 262
Brass-Ni-plated	Size 1	Neoprene	3-6,5	M12x1,5
Brass-Ni-plated	Size 2	Neoprene	4-8	M16x1,5
Brass-Ni-plated	Size 3	Neoprene	6-12	M20x1,5
Brass-Ni-plated	Size 4	Neoprene	10-14	M25x1,5
Brass-Ni-plated	Size 5	Neoprene	13-18	M32x1,5
Brass-Ni-plated	Size 6	Neoprene	18-25	M40x1,5
Brass-Ni-plated	size 7	Neoprene	22-32	M50x1,5

B: ATEX & IECEx certified cable glands:

EXCG Series cable glands in **Brass-Ni-Plated, Stainless steel (AISI 316L),**
Aluminium or AVP steel

Temperatures:

EPDM Sealing: -40 °C until +100 °C

Silicone Sealing: -70 °C until +220 °C



Protection: IP66/68

ATEX: Ex II 2 GD/I M2, Ex d IIC/Ex e II ex d I/Ex e I, Ex tD A21 IP66 or IP66/68*

IECEx: Ex d I, Ex e I, Ex d IIC, Ex e II and Ex tD A21 IP66/68 or IP66*

*(for further info and actual certificates please contact LICO)



Armoured cables SHALL have Cable Glands specified for armoured cables to prevent the loss of the ATEX certificate for the entire installation.

Please find our standard marked in red

Material	Cable Gland Size	Sealing	Cable Diameter min-max in mm	Available Metric Threads: ISO 262	Available Conic Threads
Brass-Ni-plated, Stainless steel	Size 1	EPDM	4-7 / 7-10	M16x1,5	1/2" NPT
		High temp.Silicone	4-6 / 6-8 / 8-10	M16x1,5	1/2" NPT
Brass-Ni-plated, Stainless steel	Size 2	EPDM or High temp.Silicone	5,5-8 / 8-10,5 / 10,5-13	M16x1,5 / M20x1,5	1/2" NPT / 3/4" NPT
Brass-Ni-plated, Stainless steel	Size 3	EPDM or High temp.Silicone	13-15,5 / 15,5-18	M20x1,5	3/4" NPT / 1" NPT
Brass-Ni-plated, Stainless steel	Size 4	EPDM or High temp.Silicone	18-21 / 21-24	M20x1,5 / M32x1,5	1" NPT
Brass-Ni-plated, Stainless steel	Size 5	EPDM or High temp.Silicone	24-27 / 27-30 / 30-33	M40x1,5 / M50x1,5	1" 1/2 NPT

**Just send your Specs and wishes,
we quote the RIGHT SOLUTION!**

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Standard for Ex-versions ATEX & IECEx Certified Wiring Blocks,

Temperature: -50 / +130°C,

2, 3, 4 or 5 poles
Wiring: 0,5 - 4 mm² with screw connection
Material: : KrG, Flammability class UL 94: V-0
Max current: 28 A, Max voltage: 275 V
ATEX: Ex II 2GD EEx e II*
IECEX: Ex e II*
(* for further info & actual certificates please contact LICO)

Temperature: -50 / +210°C,

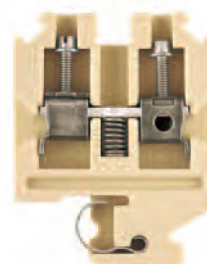
2-10 poles or more
Wiring: 0,5 - 4 mm² with screw connection
Material: Ceramic, Flammability class UL 94: V-0
Max current: 28 A, Max voltage: 275 V
ATEX: Ex II 2G D Ex e II*
IECEX: Ex e II*
(* for further info & actual certificates please contact LICO)

VDE-approved Wiring Blocks:

Porcellain C111 glazed or Steatik C220 unglazed
2, 3 or 4 poles
Wiring: 0,5-2,5 mm²/ 1,5-6 mm², 24A
T max:
350°C surface,
200°C brass-parts to avoid burn-out,

VDE-approved Wiring Blocks:

Option: 2-pole 500°C-Wiring-Block-Version:
All electrical parts are made entirely of V2A

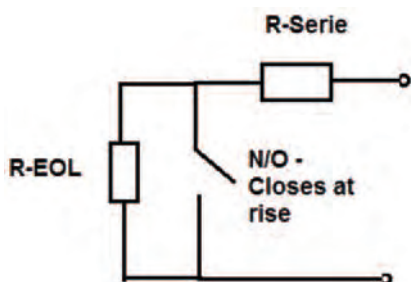


Elektrotechnik 5 W Former, Ex-conform- Resistors

Series or EOL (End of Line) Resistors for Ex e junction boxes,
T3 max 40 °C, T6 max 60 °C

(Ex-cert. expired, T max 125C, out-gasing may occur at higher Temperatures)

Available in: 470 Ohm, 680 Ohm, 1,8 kOhm, 3,3 kOhm



220°C “Ex-conform”-Resistors are in Design & Evaluation
We are glad to receive your inquiry!

Typical system wiring:

R-Serie and End Of Line resistors used mainly for cable break and shortcut control

HDL-5-CH-135
HDL-5-CH-220

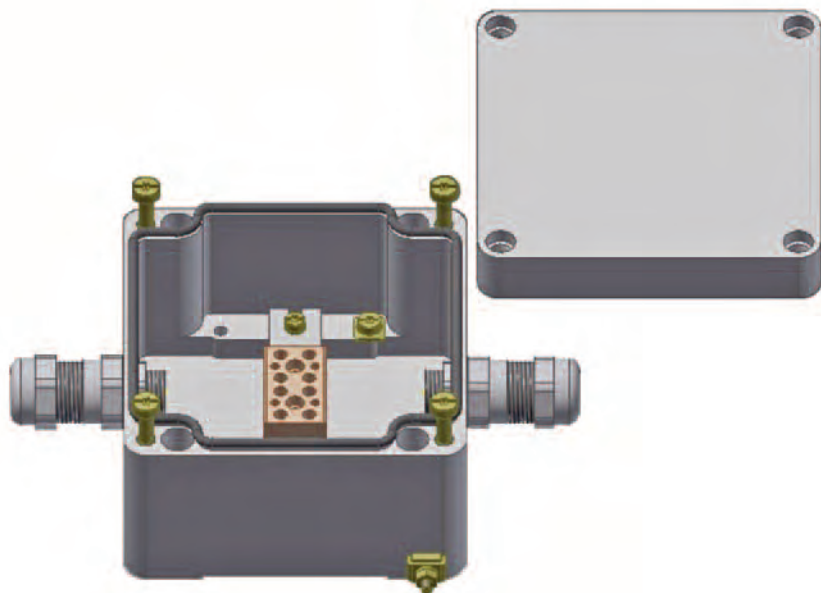
Designed and made in EU 



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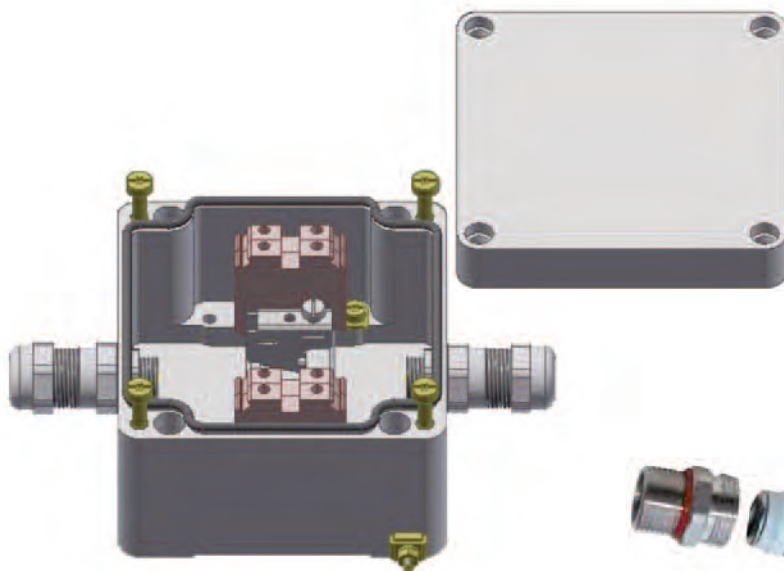
Highly Reliable Connection Boxes

Can be used also as Resistor box (R-box) to install Series and EOL resistors



HDL5-CH-135
2, 4, 6 or 8 positions,
T-Max 135 °C
All and only ATEX and/or IECEx certified parts

Cable gland of Choice
for cable diameter of choice



HDL5-CH-220
2, 3, 4, 5, 6 or 8 positions
T-Max standard: 135°C
All and only ATEX-certified parts

T-Max with special High-temperature O-Ring: **220°C**

Cable Gland of Choice
for cable diameter of choice



HDL5-CH - series is very popular for cable-hose assemblies.
Application: mounting at pumps, generators, drives, motors, gears, ignitors, injectors and many more.

Standard Box is EEx-e, EEx-d (HDL6) on request

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Every piece a Master-piece

Easy installation!

Junction Box may stay at the cooler part of the installation

Detect-A-Fire-Sensor with Coupling Head – double thread allows unique installation possibilities, use with Sensor 28020-003 or 28021-005



HDL5 for through wall mounting with i.e. cable/hose-gland



Option:
NPT-Elongation adapter to achieve a bigger distance between Sensor-switch and the HDL-box.



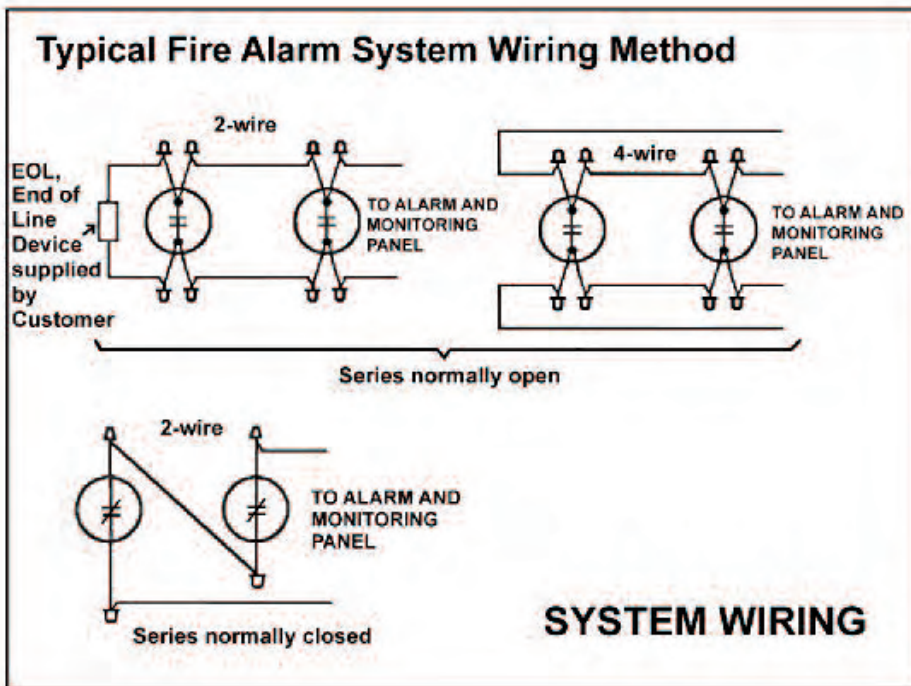
For Details see:
LICO-116317-Brochure

Example for ordering:

Box and Version of choice, Fenwal-Sensor: Series 28020-003 or 28021-005

Connections

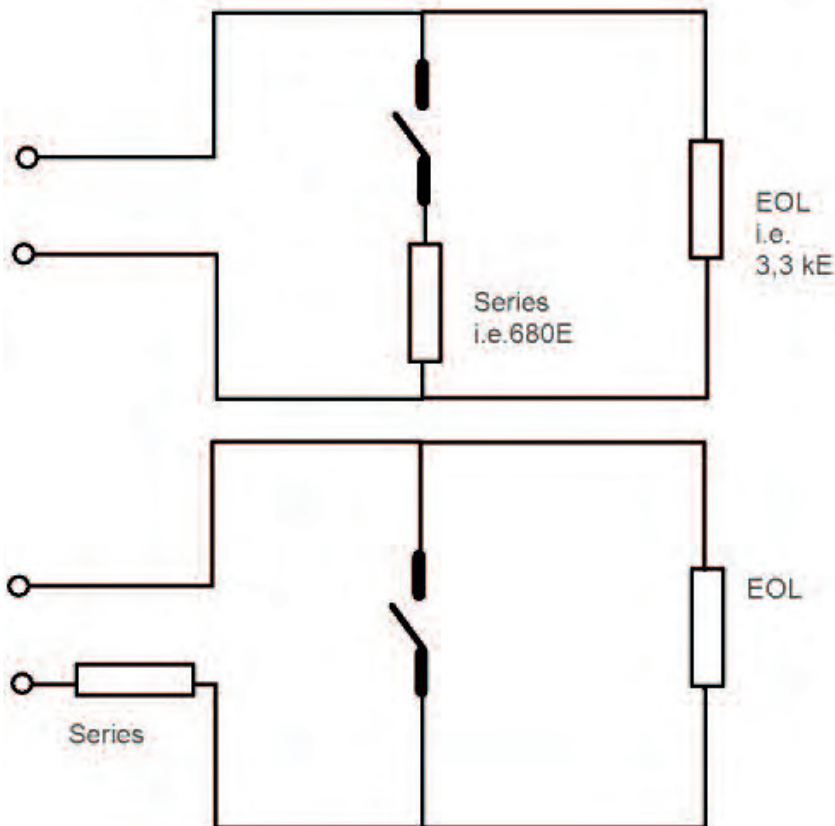
V1 / V2



V3

V4

V5



National Pipe Thread Tapered Thread

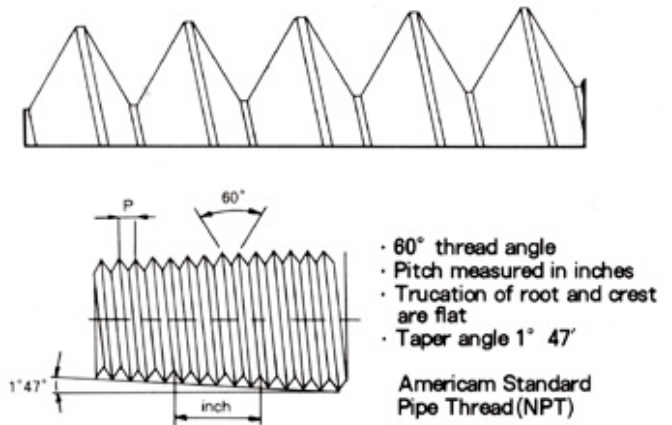
(NPT) is a U.S. standard for tapered threads used on threaded pipes and fittings.

Joining threads: These are pipe threads where pressure-tightness is made through the mating of two threads together. Additional seal tapes or thread sealant compounds might be necessary for both NPT & BSP-joints.

MIP: stands for Male Iron Pipe, or Male International Pipe, or MPT Male Pipe Thread. It is a term for pipe fittings.

FIP: stands for Female Iron Pipe, or Female International Pipe, or FPT. It is a term for pipe fittings that MIP fittings fit into.

Mating of NPT and BSP is not possible due to different cone angle, threads per inch, depth and pitch.



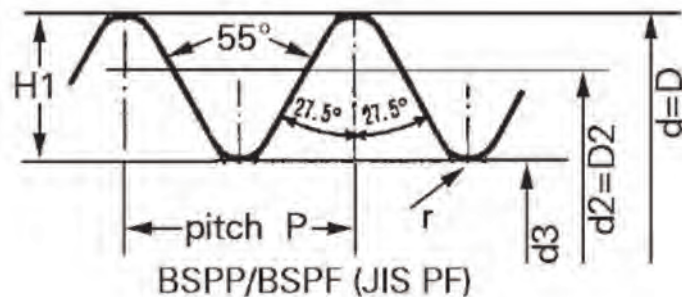
Das National Pipe Thread (*NPT-Gewinde, NPT-Rohrgewinde*) nach ASME/ANSI

B1.20.1 ist eine US-amerikanische Gewindenorm für selbstdichtende Rohrverschraubungen entsprechend der europäischen Anschauung..

Die Dichtung wird dadurch erreicht, dass die Gewinde kegelig angeordnet werden. Bei Zusammenschrauben konventioneller Rohrgewinde wird zusätzlich ein Dichtmittel (z. B. Teflonband, Hanf) zwischen die Gewinde gelegt. Im Gegensatz dazu benötigt das National Pipe Thread - Dryseal Form (NPTF-Gewinde, NPTF-Rohrgewinde) nach ASME/ANSI B1.20.3 primär kein Dichtmittel. Häufig werden jedoch flüssige Schraubendichtmittel oder Hanf oder Teflon zur Sicherung eingesetzt. Gelegentlich werden NPT-Gewinde auch als MPT (Male Pipe Thread) oder FPT (Female Pipe Thread) und auch als MIP (Male iron pipe) and FIP (Female iron pipe) bezeichnet.

BSP is a British Pipe thread (see also Whitworth-threads)

Gegenüber dem Withworth-Gewinde, welches auch als British Standard Pipe (BSP) bekannt ist, sind die Durchmesser, Gangzahl (Steigung in Gängen pro Zoll, threads per inch) als auch Kegelwinkel leicht unterschiedlich, so dass die beiden Gewinde nicht miteinander verschraubbar sind.



Typical Ignition Temperatures in C of Dusts		
Dust type	Cloud	Layer
Coal dust	380 °C	225 °C
Aluminium	590 °C	>450 °C
Fluor	490 °C	340°C
Grain dust	510°C	300 °C
Methyl cellulose	420°C	320°C
Phenolic resin	530°C	>450°C
Polythene	420°C	(melts) °C
PVC	700°C	>450 °C
Soot	810°C	570 °C
Sugar	490 °C	460°C

Classification of Zones and Divisions			
Type of Area	NEC	ATEX and IEC	Definition
Continuous hazard	Division 1	Zone 0 / Zone 20	Areas where explosive atmosphere is continually present
Intermittent hazard	Division 1	Zone 1 / Zone 21	Areas where explosive atmosphere is likely to occur in normal operation
Hazard under abnormal conditions	Division 2	Zone 2 / Zone 22	Areas where explosive atmosphere is unlikely to occur but if it does, will exist only for a short period

Equipment Categories / Protection ATEX & IECEx			
Equipment category	Cat.	Equipment Protection Level	Zone
Category 1	1G	Ga	Suitable for use in Zone 0, 1, 2
	1D	Da	Suitable for use in Zone 20, 21, 22
Category 2	2G	Gb	Suitable for use in Zone 1, 2
	2D	Db	Suitable for use in Zone 1, 2
Category 3	3G	Gc	Suitable for use in Zone 2
	3D	Dc	Suitable for use in Zone 22

Please consult the ATEX guidelines and requirements in your language.

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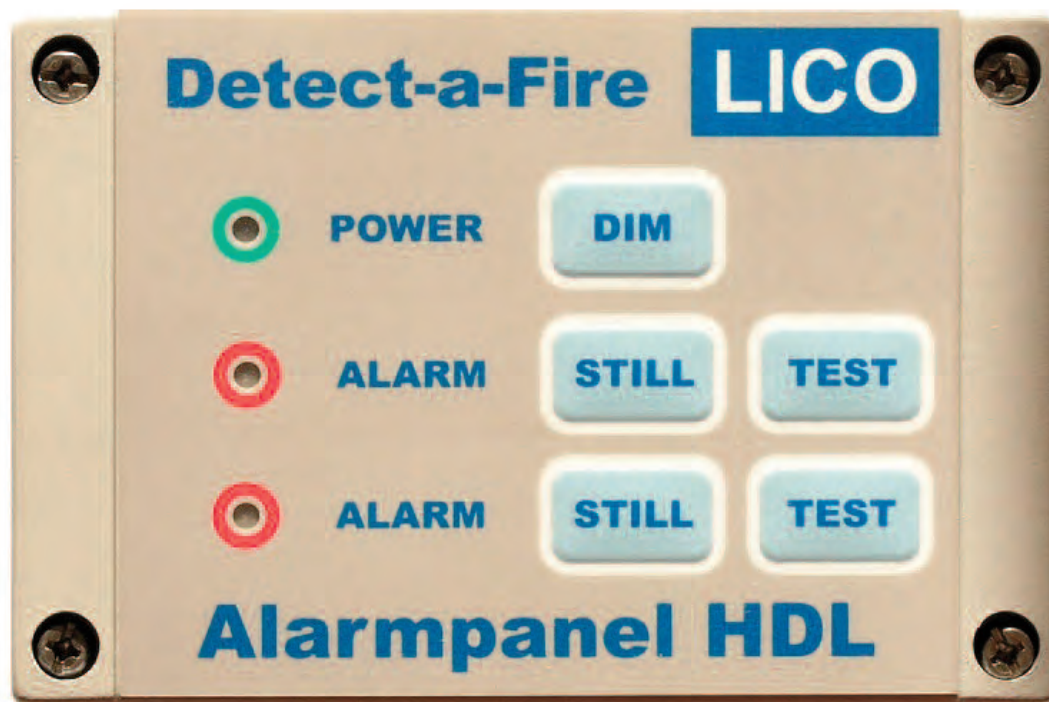
Ingress Protection Rating I		
First Digit: Solid Particle Protection		Effective Against
0	No Special Protection	No Special Protection
1	Objects > 50 mm diameter	Any large surface of the body, such as the back of a hand, but no protection against deliberate contact with a body part
2	Objects > 12 mm diameter	Fingers or similar objects
3	Objects > 2,5 mm diameter	Tools, thick wires, etc.
4	Objects > 1 mm diameter	Most wires, screws, etc.
5	Dust Protected	Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment; complete protection against contact (dust proof)
6	Dust Tight	No ingress of dust; complete protection against contact (dust tight)

Ingress Protection Rating II		
Second Digit: Liquids		Description
1	Dripping water	Dripping water (vertically falling drops) shall have no harmful effect. Test duration: 10 minutes Water equivalent to 1mm rainfall / minute
2	Dripping water when tilted up to 15°	Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle up to 15° from its normal position.
3	Spraying water	Water falling as a spray at any angle up to 60° from the vertical shall have no harmful effect.
4	Splashing water	Water splashing against the enclosure from any direction shall have no harmful effect.
5	Water jets	Water projected by a nozzle (6.3mm) against enclosure from any direction shall have no harmful effects.
6	Powerful water jets	Water projected in powerful jets (12.5mm nozzle) against the enclosure from any direction shall have no harmful effects.
7	Immersion up to 1 m	Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1 m of submersion).
8	Immersion beyond 1 m	The equipment is suitable for continuous immersion in water under Test duration: continuous immersion in water conditions which shall be specified by the manufacturer.

You sepcify your function, we deliver that.

LICO

www.prevent-a-fire.eu



You choose, we ship:

Massive Aluminumhousing with Membrane-keyboard, dedicated programmed μ Controller

- 1 oder 2 Inputs, N/O or N/C
- 9-30 VDC
- Individual Printing of Keyboard possible
- Integrated Wirebreak-control
- Opt: Housing with Cabelglands or Flushmount
- 0, 4, 15, 23 mA Functional Currents

Output:

- Alarm-LED
- 2 Outputs: 1 Output per Channel, switch only

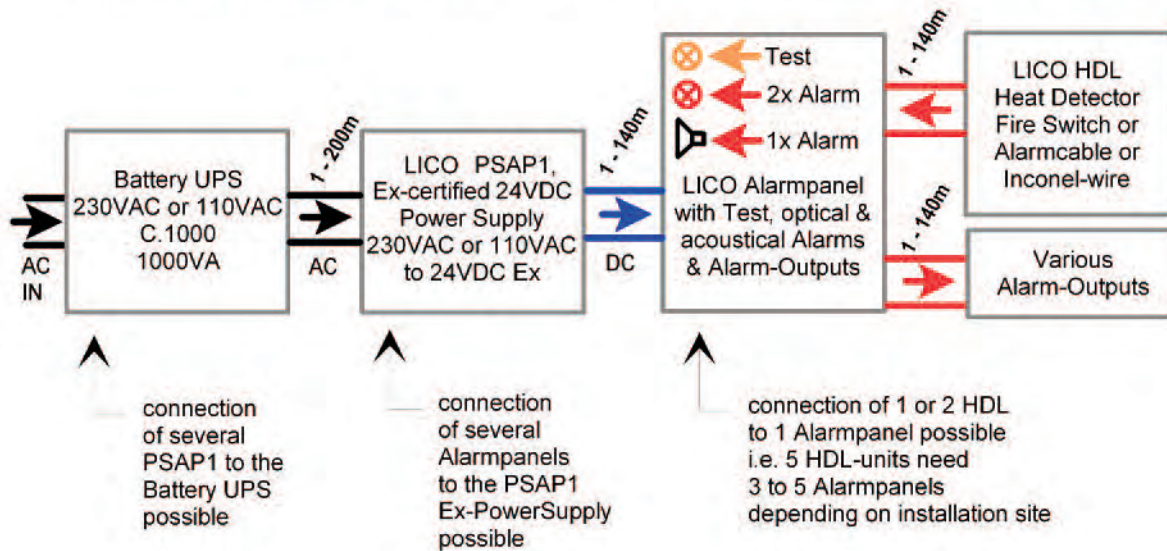
Ask for the Alarmpanel datasheet!

www.prevent-a-fire.eu

Schematics:

PAF - Prevent-a-Fire - Outline

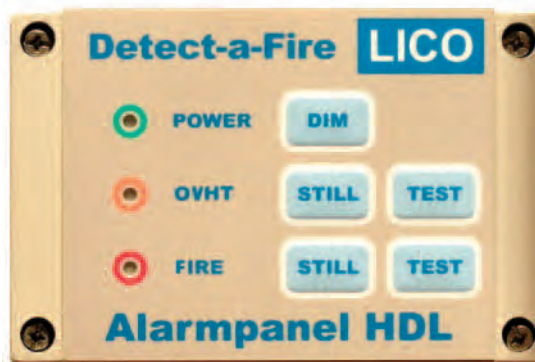
Detect and Control Overheat & Fire at the Source



Content:



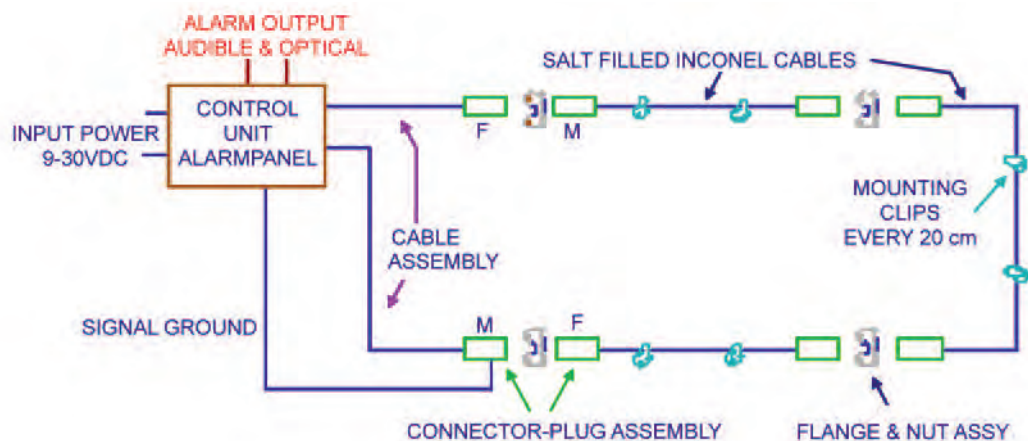
ATEX-Netzteil, Option Zenerbarriere



Control Unit: Alarmpanel, auch im Ex e oder Ex d Gehäuse lieferbar



Layout:



The LICO Alarmsystem:

Content:

1. (Industrial-Server-USV)
2. ATEX-certified 24VDC Power Supply
3. Safetybarriere



4. LICO Alarmpanel:

The Alarmpanel provides the supply and control for action, stand-by, cable break Alarm, short-cut and test

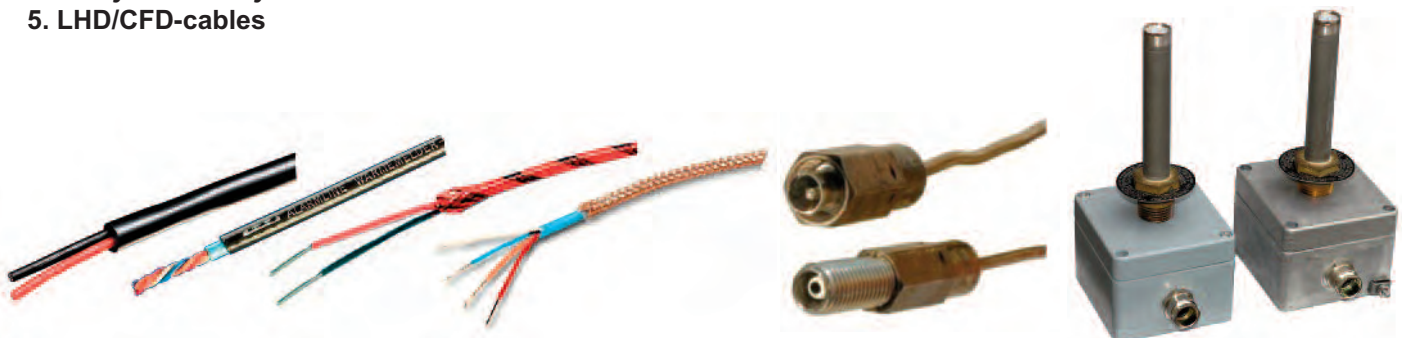
The Standardkonfiguration offers 2 Inputs. The Output is realized by 2 integrated optical and audible Alarms. . External Outputs are 2 each for Alarm 1 + 2, audible and optical Alarm (N(O & N/C –Outputs allow connection to practically ANY alarm-system on the market.)

Versions: Build in panel (with O-Ring or Stand-alone (wall-mount with cable glands)



The Layout usually is custom-made.

5. LHD/CFD-cables





ALARMLINE DIGITAL, LHS: - Not Recoverable

Comprises a twin-conductor "switching" cable with temperature-sensitive insulation protected by a special sheath. It operates by melting of the insulation between the conductors at a pre-determined temperature. This creates a short circuit which is detected by a simple electrical device, which in turn provides a fire alarm signal. Fault conditions are detected by continuous monitoring for an open circuit state. Cable control is permanent. A safety barrier may be used in Ex-areas.



LICO Alarmpanel

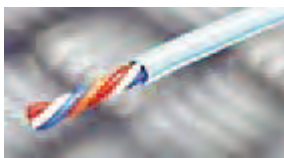
Main applications: Tank roofs, Dryers, Car Parks, Escalators, Floating roof tanks, Tunnels, Warehouse racking, Pumps, Silos, Transformers, Vehicle engines

Evaluation unit: LICO Alarmpanel

Fixed Temperatures: All cables are suitable for in-door & out-door applications
 68°C,
 85°C,
 105°C,
 174°C
 240°C



Minimum length: 100 m



ALARMLINE ANALOG: - *Recoverable

4-wire system: - Consists of a four-conductor cable surrounded by an outer sheath of PVC. A change in temperature produces a change in resistance, which is monitored by an Alarmline Control Unit, which in turn actuates an alarm signal at a predetermined level. The cable is continuously monitored for open and short circuit fault conditions. It detects either a localised hot spot or a lower level of temperature increase over the entire length. *It is recoverable after operation if the cable is not damaged or burned. Approvals: Vds and/or FM depends on type of cable



LWM-1 Control Unit

Main applications: Car parks, Garages, Cable trays, Shredders, Escalators, moving walkways, Building spaces, Melting operations, Tunnels
 A safety barrier may be used in Ex-areas.

Evaluation Unit: LWM-1 or LHD4 Control unit
 Switching cable Temperatures: up to max 150°C,

Versions:

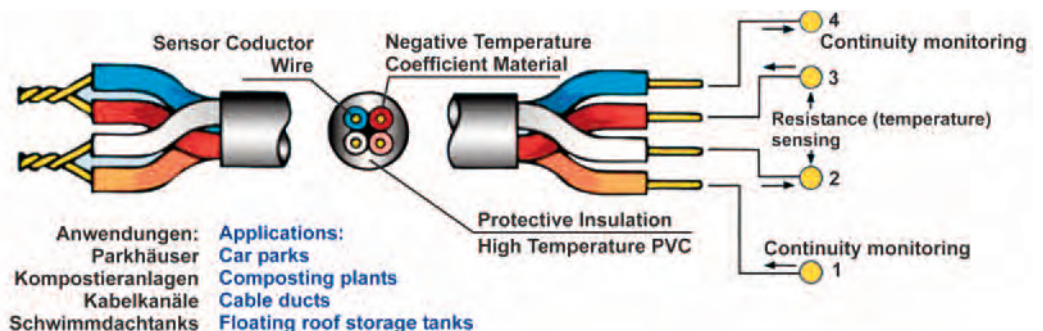
Standard Blue: Only for Indoor Applications: from clean and dry to moderate dust

Nylon coated - Black: Outdoor applications: Petrochemical, Cold storage etc.

Bronze braided: Recommended where a high risk of friction or mechanical damage

Stainless steel braid over Nylon: high level of chemical and mechanical damage is likely.

Optional: Connectors & blinds



The solution for Aircraft & Industry Overheat (OVHT) & Fire-alarm



Merkmale:

- Wiedereinschaltend sofern 1.100°C nicht überschritten wurden,
- wartungsfrei
- Solide & robust - widersteht Schock und Vibration
- vielseitig einsetzbar – verschiedene Schaltemperaturen, auch untereinander kombinierbar
- Dauerhaft –
 - Langlebige Inconel Konstruktion
- Wirtschaftlich –
 - Deckt auch große Flächen ab,
 - Sauber zu installieren
- Das Innenleben des Sensorkabels ist hermetisch in Inconel und Keramik isoliert
- Besonders Korrosionsbeständig
- Alterungsbeständig
- Extrem geringes Gewicht

REFERENCES:

Kidde Aerospace bzw Kidde Technologies Inc ist der Weltmarktführer im Bereich von Überhitzungsschutz und Brandverhütung im Bereich von zivilen und militärischen Fluggerät. Kidde Aerospace schafft den Schutz für jede gefährliche Triebwerks-Situation und ist laut Eigenangabe die einzige Quelle für entsprechenden Schutz vor Feuer in Fluggeräten.

Auf der Erde werden weltweit industrielle Prozesse und Anlagen vor Überhitzung, Feuer oder Gas- und Staub- Explosionen geschützt.

Auszug aus einem Gerichtsurteil:

Es entspricht der Lebenserfahrung, dass mit der Entstehung eines Brandes praktisch jederzeit gerechnet werden muss. Der Umstand, dass in vielen Gebäuden jahrzehntelang kein Brand ausbricht, beweist nicht, dass keine Gefahr besteht, sondern stellt für die Betroffenen einen Glücksfall dar, mit dessen Ende jederzeit gerechnet werden muss."

APPLICATION:

Schutz von

- Transformatoren und Schaltanlagen
- Superheizanlagen
- Nuclear engineering
- Sprühtrockner
- Gasturbinen
- Ventilations Filter Bänke
- Industrielle Wärme/Hitze-Trockner mit Transportsystem für Pulver, Fasern, Papier, Pulpe, Granulate, Schnitzel etc.
- Industrielle Trommeltrockner
- Marine Motorräume, Antriebe
- Große mechanische Antriebe
- Große Kompressorstationen
- Abgasanlagen/Abgassysteme
- Hochtemperatur-Wärmetauscher

Advantage:

- Sehr schneller «Schalter»
- Extrem zuverlässig
- Höchste MTBF
- Fehlalarm konstruktiv nicht möglich
- Geringstes Gewicht



DETECT HEAT & OVERHEAT AND PREVENT A FIRE

Entsprechend der Schutzart, der Fläche und des Schutzniveaus finden Sie bei LICO die richtige Lösung zur Vermeidung von Industriebrand.

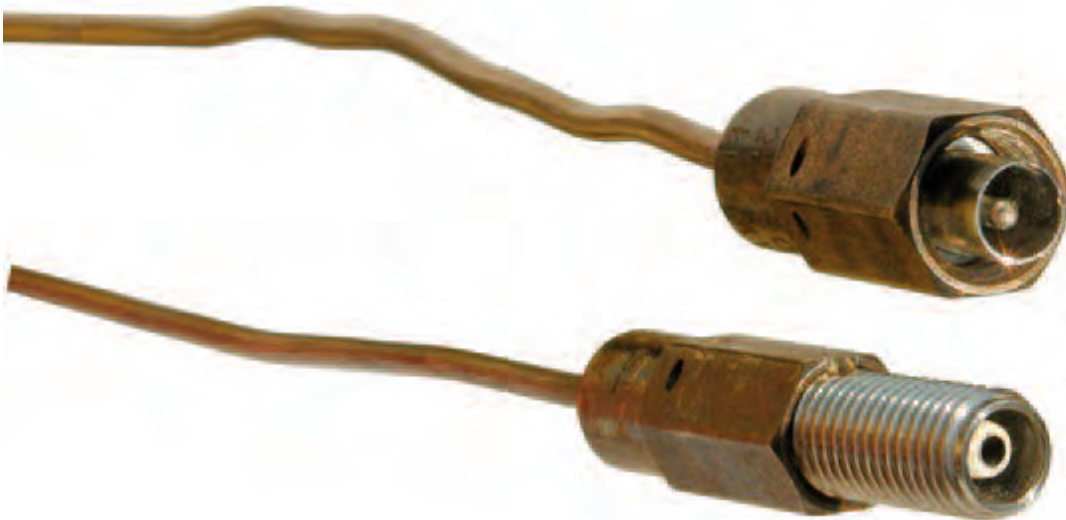
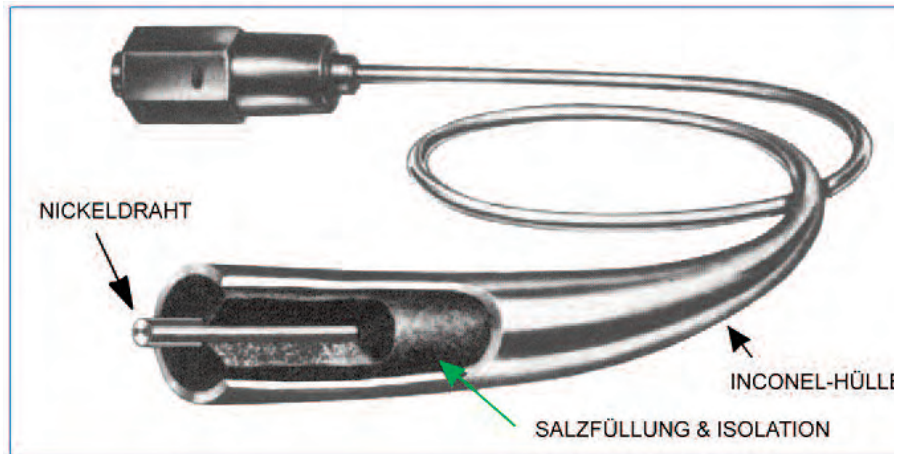
CFD - Continuous Fire Detection The High-Temperature Sensing Element

Description:

Die Eigenschaften des Sensorkabels:

- Völlig wasserdicht
- korrosionsfest
- schock und vibrationssicher
- klärt Überhitzung binnen weniger Sekunden
- Hitzebeständig bis ~1.100°C

Damit ist das Sensorkabel seit über 50 Jahren der Industriestandard das Herz vieler Überhitzungsschutz- und Brandschutzsysteme.



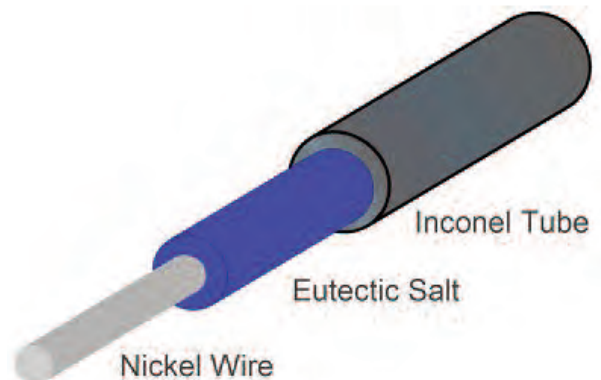
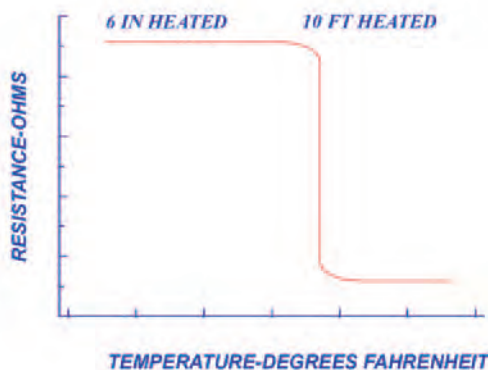
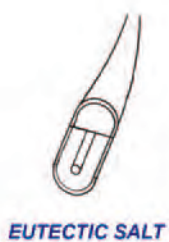
Bei zig-tausenden Installationen werden diese Systeme entweder als Überhitzungsschutz eingesetzt, also als ALARM-Einrichtung und oder als Einrichtung zur hitzereduzierenden Aktion, zB Abschalten der Anlage) oder bei der Feuerlöschung als auslösende Einrichtung um das Löschmittel freizusetzen. In vielen Fällen werden auch kombinierte Funktionen wie systemabschaltender Überhitzungsschutz UND Auslösen der Löscheinrichtung eingebaut.

STANDARD DATA:

124°C, 154°C, 204°C, 302°C, 407°C,
höhere Schaltepunkte nach technischer Klärung
T max reversibel: bis max. 1100°C

Abmessungen:

Kabelsegmentlängen: 0,46 m – 4,60 m in 2,5 cm Teilungen
Max. Länge von Kabelsystemen: ~120m
Längere Konfigurationen auf Anfrage
Kabeldurchmesser: nur 2,25 mm



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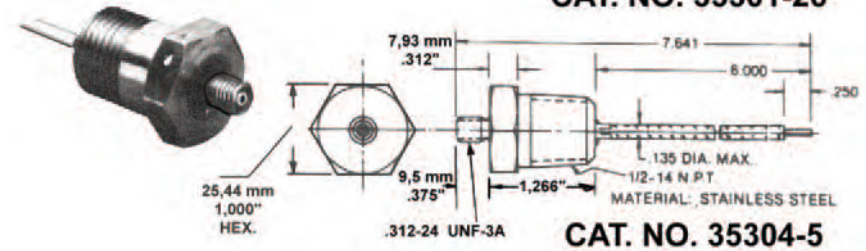
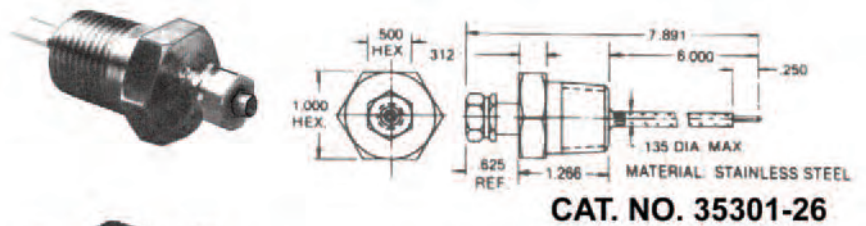
Connectors and Mounting material 1/2:



Screw-in connector Plug Assemblies:

Connector assemblies are available in male and female thread configuration to accommodate either end of the sensing element.

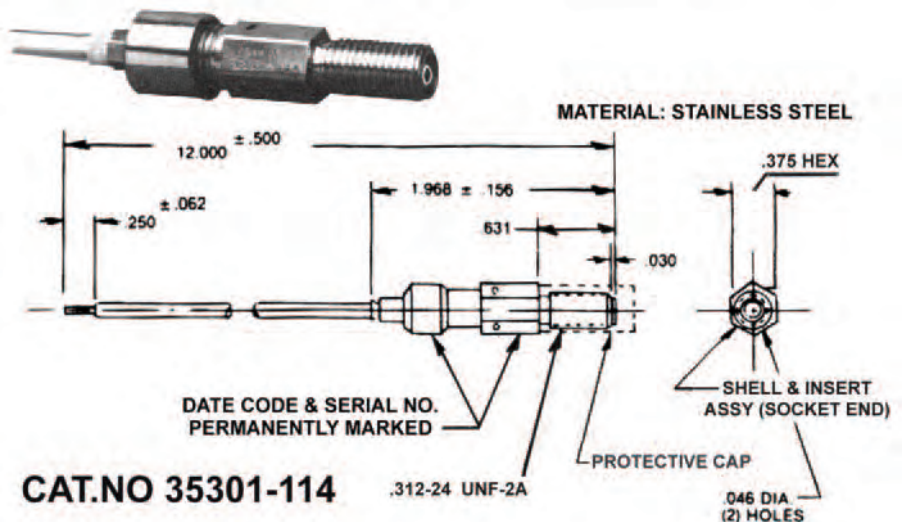
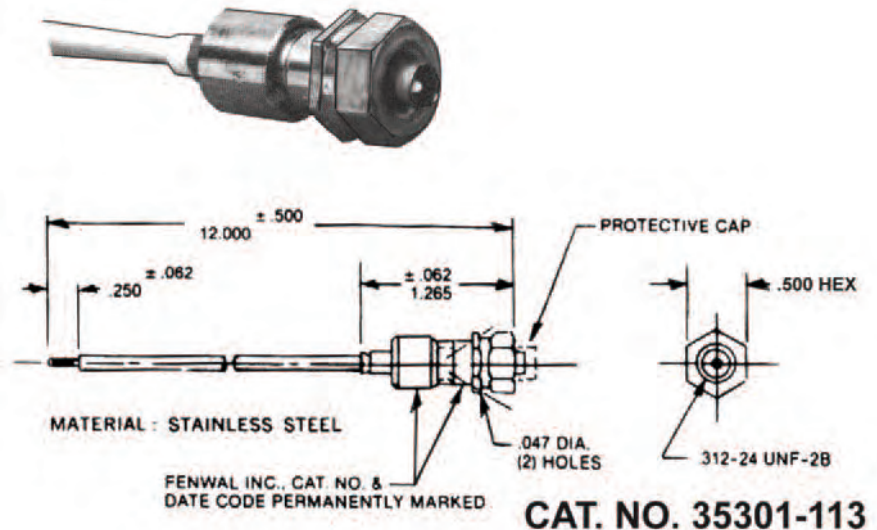
The plug thread facilitates connection to a standard conduit box like the HDL-Conn-box.



Loose Cable Assemblies:

Cable assemblies are available in male and female thread configuration.

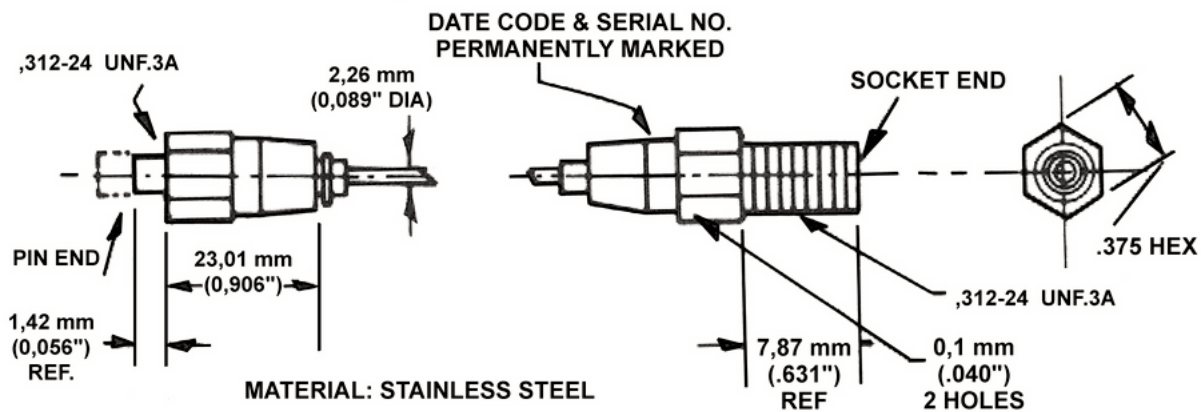
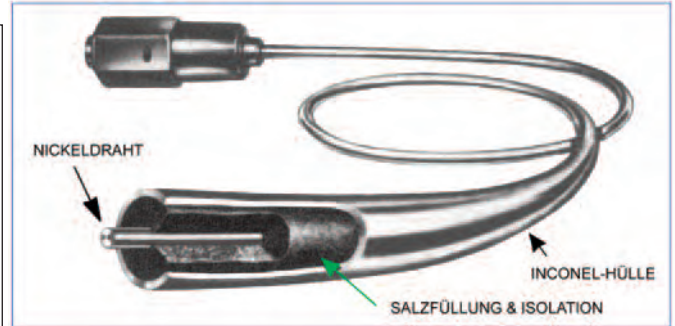
They may be used singly to connect the sensing element termination to the control unit or in combination to connect sensing element sections through volumes not monitored by the elements.



Connectors and Mounting material 2/3:

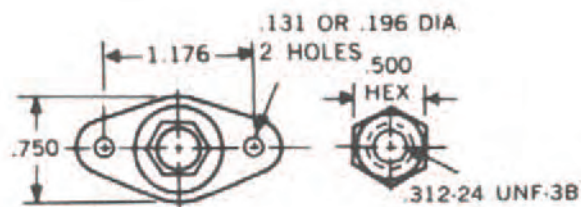
Sensing Element:

The Fenwal sensing element consists of a small 2,26 mm diameter (.089 inch OD), lightweight, flexible Inconel tube with a nickel wirecenter conductor. The tube is packed with insulation impregnated with a special salt compound and is hermetically sealed. The picture below shows the sensing element with standard m + f connectors.



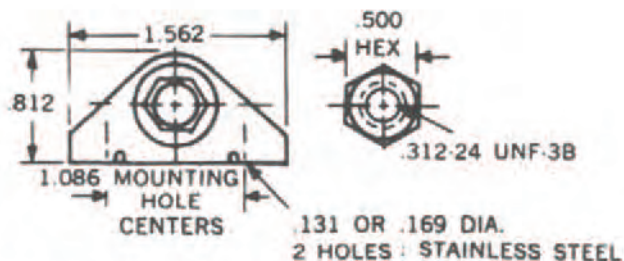
Flange and Nut Assemblies:

Flange and nut assemblies are used to support the connection of two sensing elements. They are used to support and separate the elements from the structure or as a bulkhead feed through supports. Flange and nut assemblies may be surface or bulkhead mounted.



MATERIAL: STAINLESS STEEL

CAT.NO 35410-0 (Feedthrough Type)



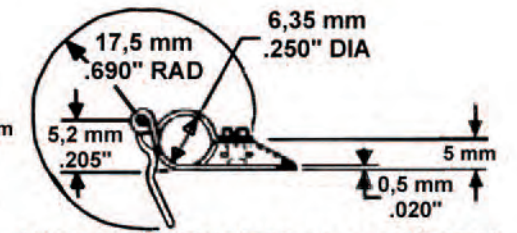
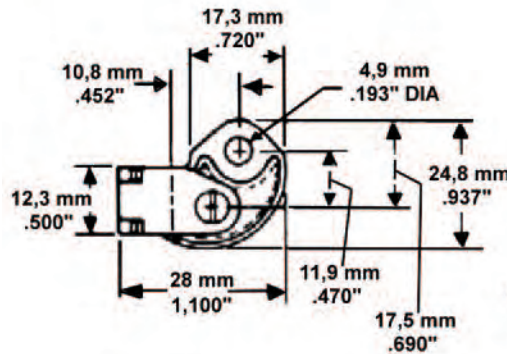
.131 OR .169 DIA.
2 HOLES: STAINLESS STEEL

CAT.NO 35410-1 (Surface Mounted Type)

Connectors and Mounting material 3/3:

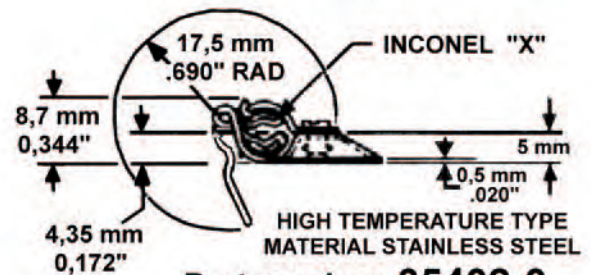
Sensing Element:

Diese speziellen Befestigungen halten das Schaltkabel sicher an ihrem Montageort. Die Artikelnummer 35401 benötigt den Silikoneinsatz 35450-1, Die Hochtemperatur Version 35402-0 aus 321 oder 347 Edelstahl beinhaltet schon eine Inconel „X“ Befestigung und benötigt daher keinen weiteren Silikoneinsatz.



GENERAL PURPOSE TYPE (up to 300°C/575°F)
MATERIAL STAINLESS STEEL

Part number: 35401-0

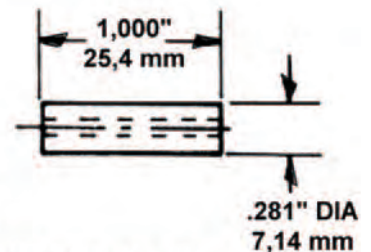
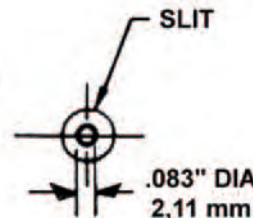


HIGH TEMPERATURE TYPE
MATERIAL STAINLESS STEEL

Part number: 35402-0

Silikontüllen:

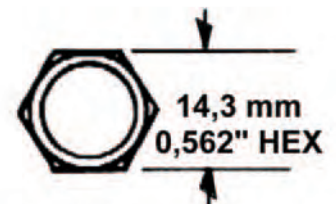
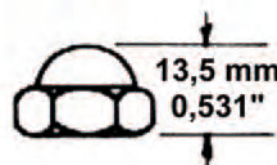
Notwendig Für den Montageclip 35401-0 zur Befestigung des Schaltkabels.
T-Max 260°C



Part number: 35450-1 Silicone rubber sleeve

Schaltkabel-Ab-schluss:

Dieses Abschlussterminal ist notwendig um bei einer Stichleitung (anstelle einer Ring-Schleife) die Ring-Schleife zu erzeugen.

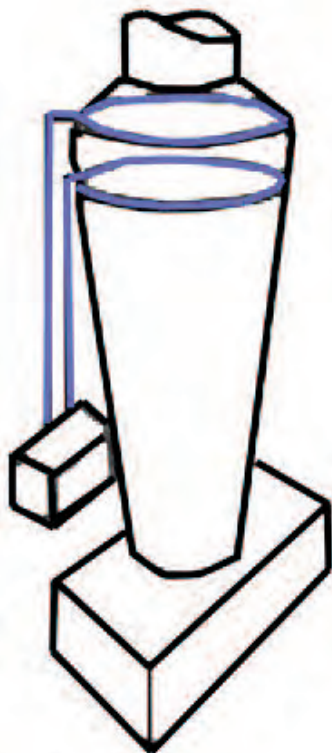


MATERIAL: STAINLESS STEEL

Part number: 114088

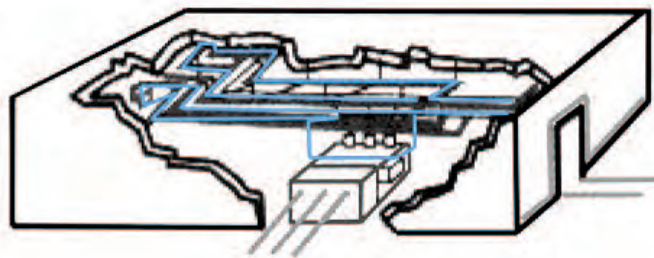
Anwendung/Beispiele:

Sprüh- & Trommeltrockner

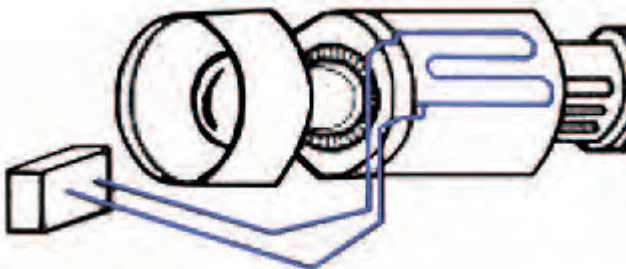


Durch das auch mehrfache Verlegen in Kreisform in verschiedenen Höhen wird eine Überhitzung oder ein Brand rechtzeitig erkannt.

Heizräume und unterirdische Versorgungseinrichtungen, Ein CFD-System meldet Überhitzung in Sekundenschnelle.

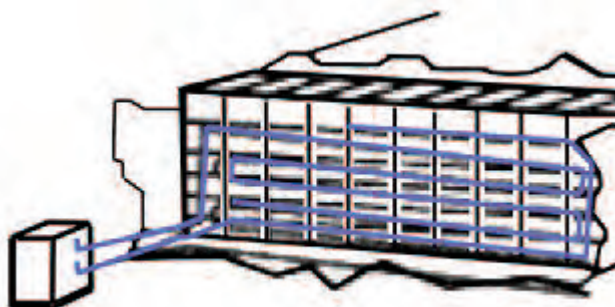


Gasturbinen:



Gasturbinen
Ein CFD-System schützt vor Überhitzung oder Durchbrand der Brennkammer.

Filterbänke & Absaugkanäle:



Filterbänke
Die Ansammlung von entzündlichen Ablagerungen kann Feuer und erhebliche Luftverschmutzung auslösen.

Custom made Fire Prevention solutions from LICO !

Contact us:

LICO Electronics GmbH,

Klederinger Str. 31, A-2320 Kledering, Austria

office@lico.at www.lico.at

Tel: + 43 1 706 43 00

Fax: + 43 1 706 41 31

LICO Hungaria Kft,

Raba u.4, H-2030 Erd, Hungary

sales@lico.hu / h.miksch@lico.at

Tel: + 36 23 520 113

Fax: + 36 23 520 115

LICO Mecatronic S.R.L.

RO-540526 Targu-Mures,

Str.Bucinului Nr.2B Romania.

office@lico.ro www.lico.ro

Tel: +40 365 807 497

Fax: +40 365 434 999

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