

# VIGILEX®

SAFETY PROTECTION By **STIF**

## HAZARD MONITORING SYSTEM & SAFETY EQUIPMENT



**STIF**

components for your success

English



## A Modern and dynamic safety monitoring system

Using our considerable expertise within the storage and bulk handling industry we have designed a complete system to ensure the safety and protection of your equipment and personnel.

Innovation is a keyword in our design policy ensuring safety in your elevators and conveyors.

Within this brochure you will discover a complete modern system dedicated to protect your bulk handling machinery at all times.

The system can be accurately set to monitor, manage and analyse all defects, facts and report on productivity of your machines.

This information can be accessed day or night across the globe directly to your laptop, tablet or mobile phone.

We offer a complete range of hazard monitoring and safety equipment to handle a plant of up to 120 conveyors giving our customers the most economical of solutions available on the market.

# SUMMARY

JET SYTEM  
Control and configuration system 4

## Hazard Monitoring devices

|            |   |   |
|------------|---|---|
| M-JET+     | <i>Hazard monitoring system with display</i>    | 6 |
| M-JET      | <i>Hazard monitoring system without display</i> | 6 |
| M-JET LINK | <i>Connection Box</i>                           | 8 |

## Safety Equipment - SensorJET

|                   |                                    |    |
|-------------------|------------------------------------|----|
| VIGIRO IP 26      | <i>Rotation under speed switch</i> | 10 |
| VIGIRO SV26       | <i>Rotation under speed switch</i> | 11 |
| VIGIBELT TOUCH    | <i>Belt alignment detector</i>     | 12 |
| VIGIBELT CDM 80   | <i>Belt alignment detector</i>     | 13 |
| VIGIMAT DNC 30    | <i>Level &amp; choke sensor</i>    | 14 |
| VIGITHERM GST 100 | <i>Bearing temperature sensor</i>  | 15 |





**JET SYSTEM®** CONTROL AND CONFIGURATION SYSTEM

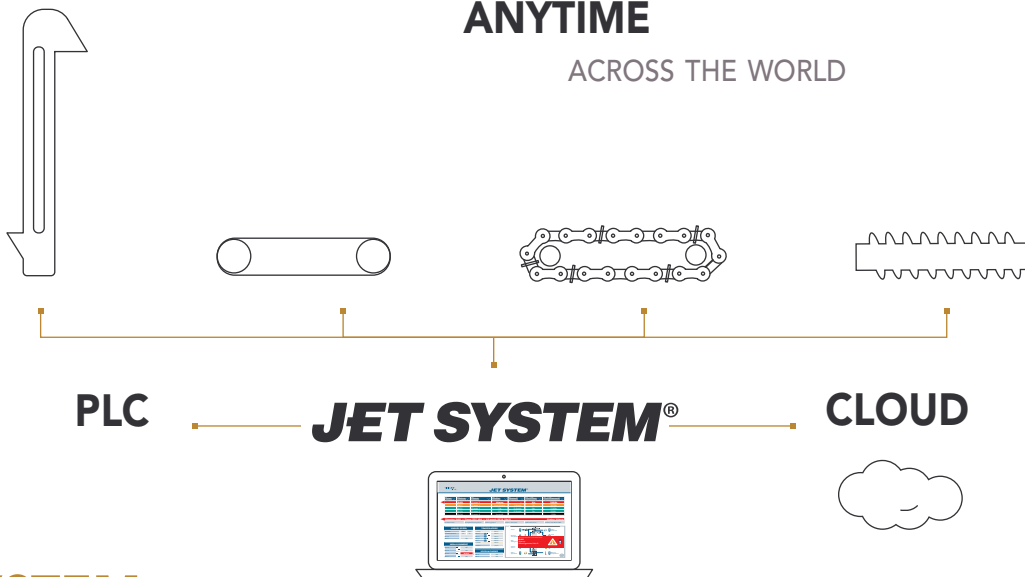
The world's most advanced hazard monitoring system



BE CONNECTED WITH YOUR CONVEYORS

**ANYWHERE & ANYTIME**

ACROSS THE WORLD



**JET SYSTEM**

The smart way to manage your safety system

This configuration of the system gives complete control and feedback of your conveyors and elevators avoiding all associated hazards associated with under speed, misalignment, level & choke control, bearing and motor temperature which are the main ignition sources in explosion risks. By notifying you directly on defects and performance via your laptop, tablet or mobile phone you can effectively manage your plant anywhere on the globe ensuring your operation remains efficient with reduced downtime.

# JET SYSTEM® CONTROL AND CONFIGURATION SYSTEM

## Capabilities with the JET SYSTEM and an Internet or LAN connected computer :

- Remote monitoring up to **120 conveyors** from the same display unit
- Unified viewing of data in real time
- Graphic display of historical data
- Alarm notification by sending email
- Viewing of alarms
- Support tools to manage preventive maintenance

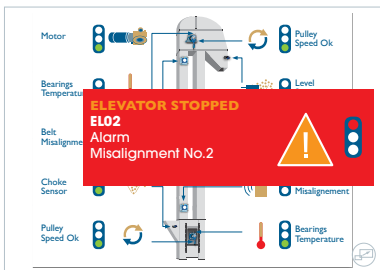


| Type | Name    | Place     | Status | Speed | Cpt/Day | Cpt/General |
|------|---------|-----------|--------|-------|---------|-------------|
| EL02 | Place 2 | Alarm     | -      | 8h    | 1850h   |             |
| TB01 | Place 1 | Pre-Alarm | 1.8m/s | 7h    | 1575h   |             |
| EL01 | Place 1 | Ok        | 2.4m/s | 5h    | 1125h   |             |
| EL03 | Place 3 | Ok        | 2.8m/s | 3h    | 925h    |             |
| EL04 | Place 4 | Inactif   | -      | -     | 125h    |             |

**Elevator EL02 — Place STIF USA — 25 march 2018 15h31** Status: Alarm

Dashboard | Temperature graph | Alarm graph | Alarm analysis | Maintenance | Param. M-JET.COM

| UNDER SPEED  |         | TEMPERATURE   |      |
|--------------|---------|---------------|------|
| Speed        | 000 rpm | T° Max        | 80°C |
| Under speed  | 10 %    | No.4          | 65°C |
| No.2         | -       | No.3          | 68°C |
| No.1         | Ok      | No.2          | 58°C |
|              |         | No.1          | 56°C |
|              |         | T° Max        | 90°C |
| MISALIGNMENT |         | LEVEL & CHOKE |      |
| No.4         | Ok      | No.2          | Ok   |
| No.3         | Ok      | No.1          | Ok   |
| No.2         | Alarm   |               |      |
| No.1         | Ok      |               |      |



Access to graphics



jetmonitoringsystem.com is available on all your mobile devices

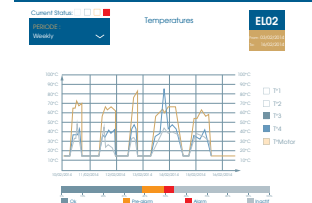
## HISTORIC DATA ANALYSIS :

### Only by computer, directly with laptop or by Network LAN

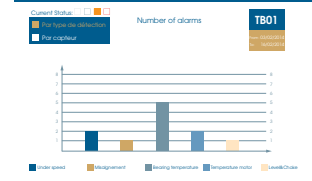
- History of defects: JET SYSTEM can save 10 000 events.
- History of setting modification: Save the 10 000 last setting modifications.
- History of daily running time of the equipment:
  - JET SYSTEM saves production time during the last 4 000 days of use.
  - JET SYSTEM records temperatures 24 times per day during the last 365 days of use.
- All the history can be download in csv format.



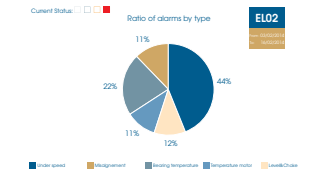
Run time



Temperatures



Number of alarms



Ratio of alarms by type



## The hazard monitoring devices are able to monitor bucket elevators, belt conveyors, chain conveyors and screw conveyors.

Our hazard monitoring system analyses the data sent by the sensors installed on equipment and save the eventual defects events. According to the setting, the M-JET+ or the M-JET sends alarms and commands the stopping of the conveyor.

### M-JET+ or M-JET monitors the following:

- Under speed due to belt slip on the pulley. To check comparing with the nominal speed.
- Bearing temperature using sensor PT100 or NTC.
- Belt misalignment using sensors with or without contact.
- Material jam in conveyor entry or exit using capacitive sensor.
- Chain elongation measured by inductive sensor and targets.
- Motor power measurement with specific electrical consumption.
- Shaft position measured by sensor 4-20mA.

### The operating control of the system is realized by output relays:

- Directly on the power relay of the motor.
- By the global PLC of the facilities.

### Verifying the conveyor operation can be achieved by:

- On computer screen by internal website (directly with laptop or by Network LAN).
- By message on the email box (events and maintenance operation plan).

## Hazard monitoring device with display: **M-JET+**®

### DESIGN FEATURES:

- Strong casing.
- Dustproof and waterproof casing.
- **Dashboard with LED indicator.**
- Work stand by the conveyor.
- **Running status indicator near the conveyor (and sound alarm).**



### SENSORS SUPERVISED BY THE **M-JET+**:

- 2 belt speed sensors.
- 5 bearing temperature sensors.
- 3 analogic sensor.
- 2 chain elongation sensors.
- 4 belt alignment sensors.
- 2 follower shaft position sensors.
- 2 choke and level sensors.

### ELECTRICAL SUPPLY:

- 24 V DC 350 mA.
- Option: 110-230V AC 150 mA.

### STANDARDS

EN 61326 -1 CEM Electromagnetic compatibility.  
EN 61010 -1 Safety electric device.  
Stainless steel box for ATEX zone European regulation 2014/34UE.

## Hazard monitoring device without display: **M-JET**®

### DESIGN FEATURES:

- Strong casing.
- Dustproof and waterproof casing.
- Remote management use.



### SENSORS SUPERVISED BY THE **M-JET**:

- 2 belt speed sensors.
- 3 analogic sensor
- 4 belt alignment sensors.
- 2 choke and level sensors.
- 2 follower shaft position sensors.
- 5 bearing temperature sensors.
- 2 chain elongation sensors.

### ELECTRICAL SUPPLY:

- 24 V DC 350 mA.
- Option: 110-230V AC 150 mA.

### STANDARDS

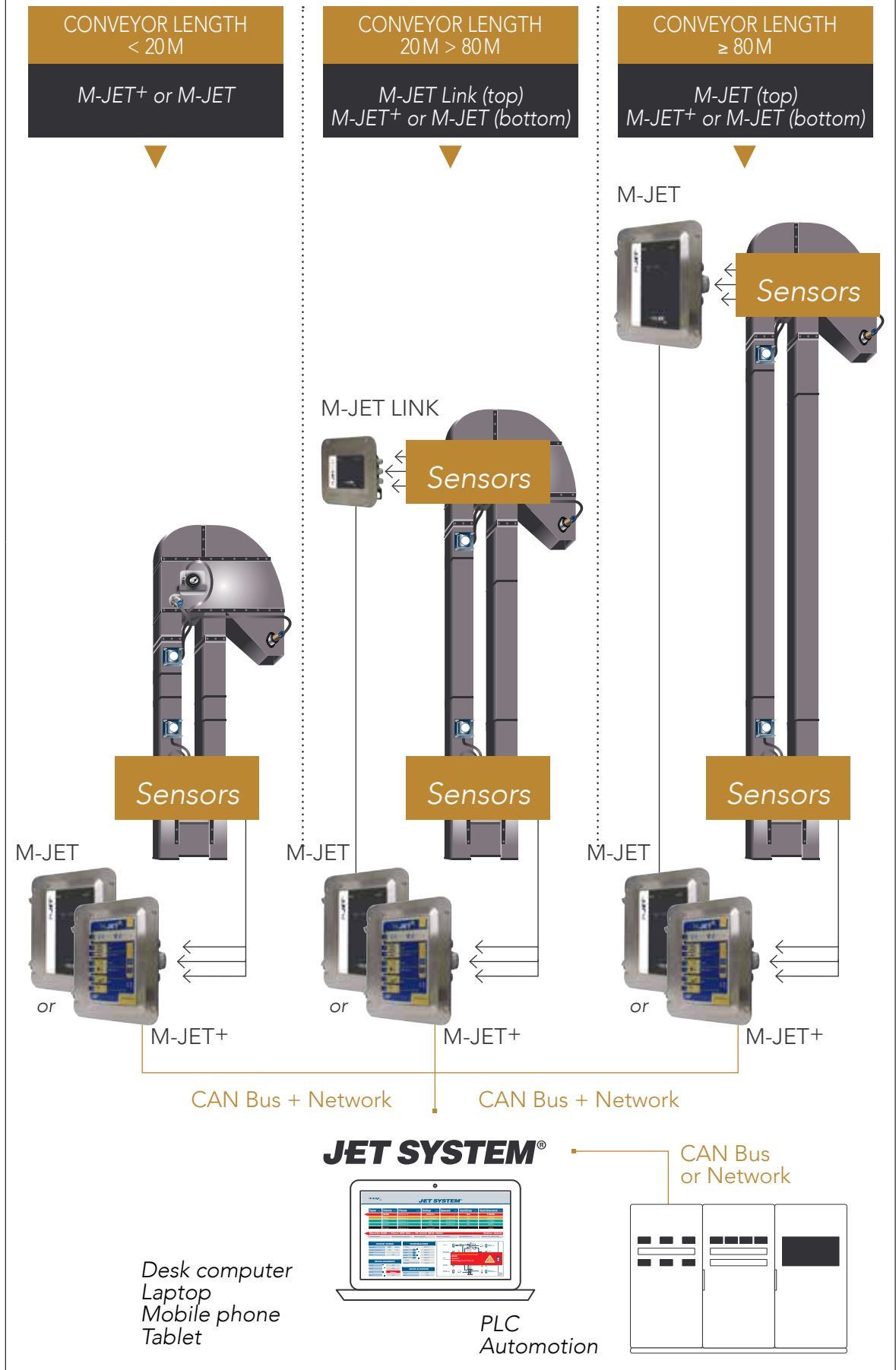
EN 61326 -1 CEM Electromagnetic compatibility.  
EN 61010 -1 Safety electric device.  
Stainless steel box for ATEX zone European regulation 2014/34UE.

## **M-JETLINK**®

- Help to connect sensors on Master M-JET+ or M-JET for only one conveyor, by extension wire (multicables).
- Connection box to add for conveyor length between 20 meters and 80 meters



## CONNECTION DEVICES CONFIGURATION





## Selection guide:

### Connection box

M-JET LINK  
Connection box



5  
4  
1  
3  
2

### Hazard monitoring

M-JET

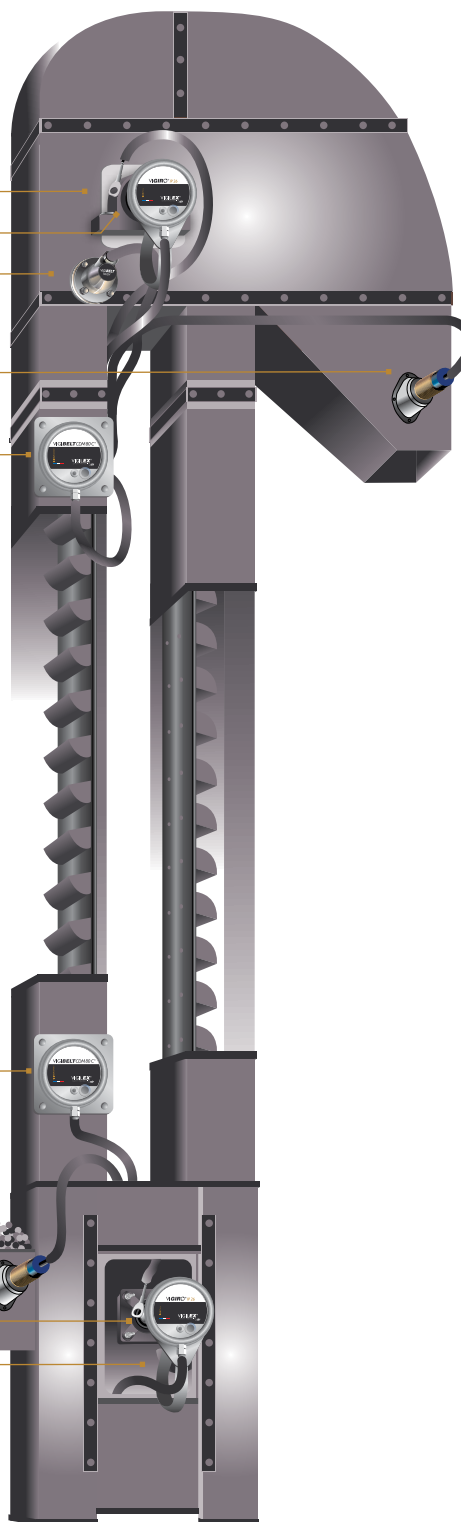
M-JET+



M-JET  
Hazard  
monitoring  
without display

or  
M-JET+  
Hazard  
monitoring  
with display

2  
3  
5  
4



### Security devices

#### MISALIGNMENT p.12

- 1 **Vigibelt Touch**  
*Belt alignment detector by contact*



- 2 **Vigibelt CDM 80 C** p.13  
*Belt alignment detector without contact*



#### LEVEL & CHOKE p.14

- 3 **Vigimat DNC 30**  
*Level & choke sensor*



#### UNDER SPEED p.10

- 4 **Vigiro IP26**  
*Rotation under speed switch*



#### TEMPERATURE p.15

- 5 **Vigitherm GST 100**  
*Bearing temperature sensor*



# VIGIRO IP26®

Rotation speed sensor:  ATEX (II2D) IP67 T 80°C

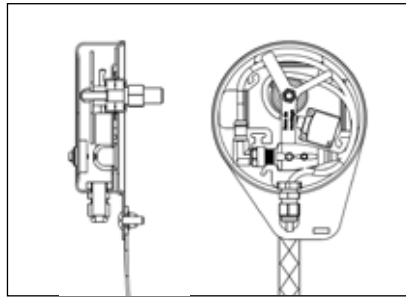
## DETECTION

INTEGRATED INDUCTIVE DETECTOR

- Vmax: 500rpm

## QUICK FITTING TO SHAFT



- M12 mounting bolt
- Anti-rotation flexible strap



## STANDARDS

Eligible for the standard 2014/34/UE  
EN/IEC 60079-0  
EN/IEC 60079-31  
EN 60947-5-2 + A1  
IP6X-IEC 60529

The VIGIRO IP 26 devices can be connected directly to a central control area or to the hazard monitor M-JET+

| VIGIRO IP26 | Voltage          | No Atex  |  Atex 21 |
|-------------|------------------|--|---|
|             | 10 - 36 V DC     |  | 55 CRMI 71254 TE  |
|             | 20 - 264 V AC/DC | 55 CRMI 91253 TE   |   |

Cable : 2 m

# VIGIRO SV 26<sup>®</sup> Not usable with M-JET+ Hazard monitor

**Rotation speed sensor:** ATEX (II2D) IP67 T 80°C

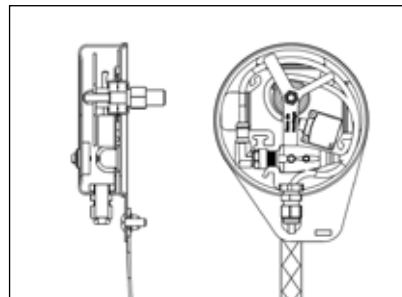
## DETECTION

INTEGRATED INDUCTIVE DETECTOR

- 6 to 6000 pulses/min
- Vmax: 500 rpm
- Preset under speed setting -33/-20/-11/-6%

## QUICK FITTING TO SHAFT

- M12 mounting bolt
- Anti-rotation flexible strap



## STANDARDS

Eligible for the standard 2014/34/UE  
 EN/IEC 60079-0  
 EN/IEC 60079-31  
 IP6X-IEC 60529



**EAZYFIX**  
 M12 (55 CRAI 44012)  
 Magnet adapter (to avoid tapping)

Autonomous operation, external monitor not required;  
 intuitive and easy set up.

| VIGIRO SV26 | Voltage        | No Atex          | Atex 21          |
|-------------|----------------|------------------|------------------|
|             | 10-36 V DC     |                  | 55 CRMI 71203 TE |
|             | 20-264 V AC/DC | 55 CRMV 91205 TE |                  |

Cable : 2 m

# VIGIBELT TOUCH®

**Belt alignment** detector:  $\text{Ex}$  ATEX (II 2D) IP67 T80°C

## DETECTION

Integrated inductive detector  
Activated by physical belt contact with the sensor

## INSTALLATION

- Installed outside the elevator leg per PAIR (Supplied with gasket and bolts)
- Casing opening of  $\varnothing 55$  mm on the rising leg
- Bolt center to center: 51x51 mm
- Bolt  $\varnothing$ : M6
- Output: NC



## STANDARDS

ATEX 21/20  
Eligible for the standard 2014/34/UE  
EN/IEC 60079-0  
EN/IEC 60079-31  
IP6X-IEC 60529

The VIGIBELT TOUCH devices can be connected directly to a central control area or to the hazard monitor M-JET+

| VIGIBELT TOUCH | Voltage        | No Atex <del><math>\text{Ex}</math></del> | $\text{Ex}$ Atex 21 |
|----------------|----------------|---|---------------------|
|                | 10-36 V DC     |   | 55 KVT 76012 TE     |
|                | 12-250 V AC/DC | 55 KVT 95042 ME                           |                     |

Cable: 2 m

# VIGIBELTCDM80 C®

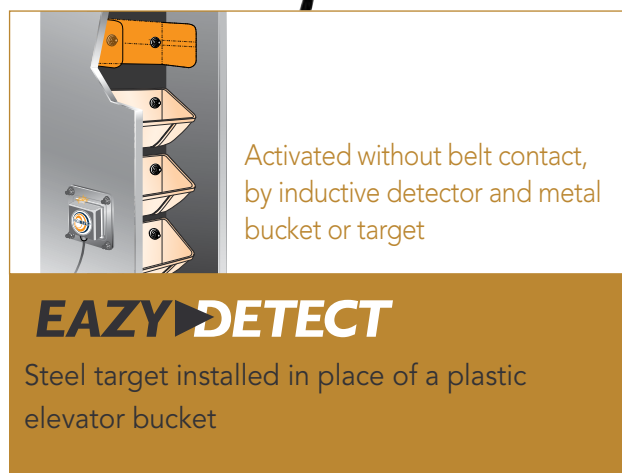
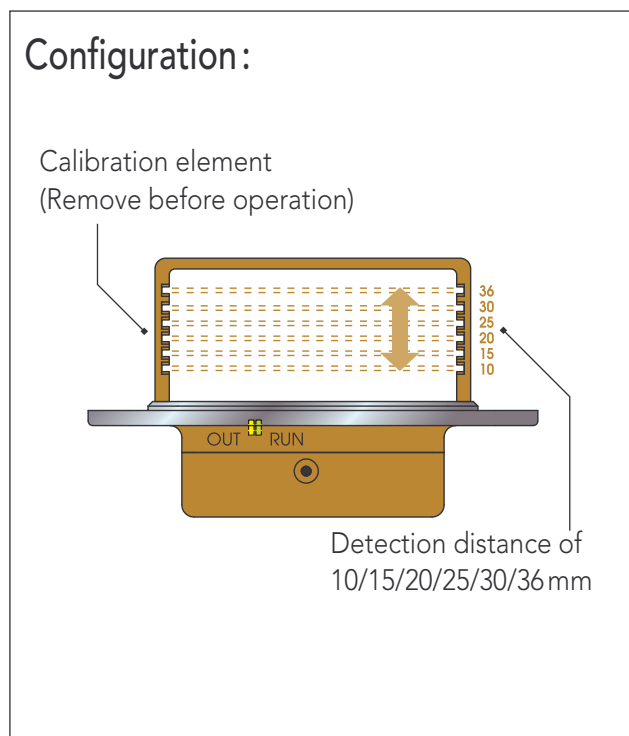
## Belt alignment detector: $\text{Ex}$ ATEX (II 2D) IP67 T 80°C

### DETECTION

- Detection distance of:  
15 / 20 / 25 / 30 / 36 mm
- On request, detection distance  
can be preset at factory

### INSTALLATION

- INSTALLED OUTSIDE THE ELEVATOR LEG  
PER PAIR (Supplied with gasket and bolts)
- SQUARE OPENING OF 110mm  
ON THE RISING LEG



**STANDARDS**

Eligible for the standard 2014/34/UE  
EN/IEC 60079-0 / EN/IEC 60079-31  
IP6X-IEC 60529

The VIGIBELT CDS 80 C devices can be connected directly to  
a central control area or to the hazard monitor M-JET+

|                            |                  |                            |                                       |
|----------------------------|------------------|----------------------------|---------------------------------------|
| <b>VIGIBELT<br/>CDM80C</b> | <b>Voltage</b>   | <b>No Atex</b> $\text{Ex}$ | <b><math>\text{Ex}</math> Atex 21</b> |
|                            | 10 - 36 V DC     |                            | 55 KDM 78012TE                        |
|                            | 20 - 264 V AC/DC | 55 KDM 98032TE             |                                       |

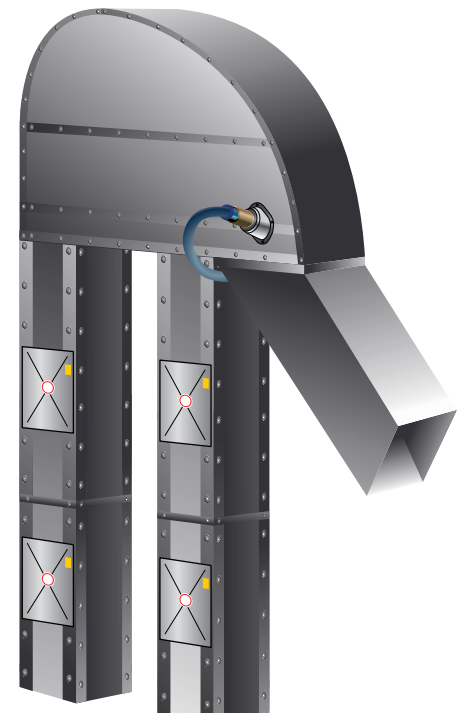
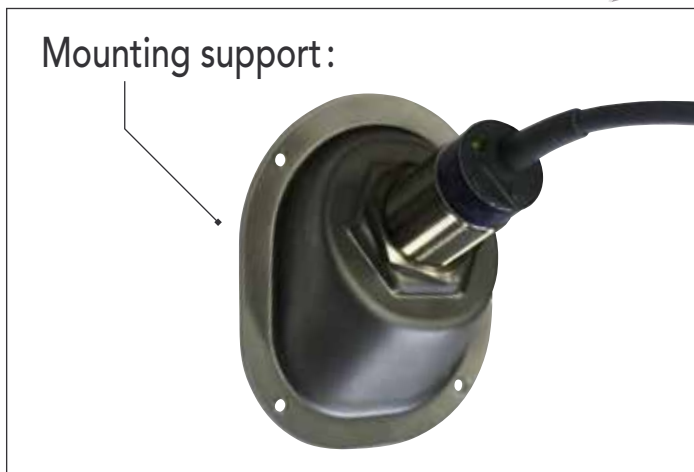
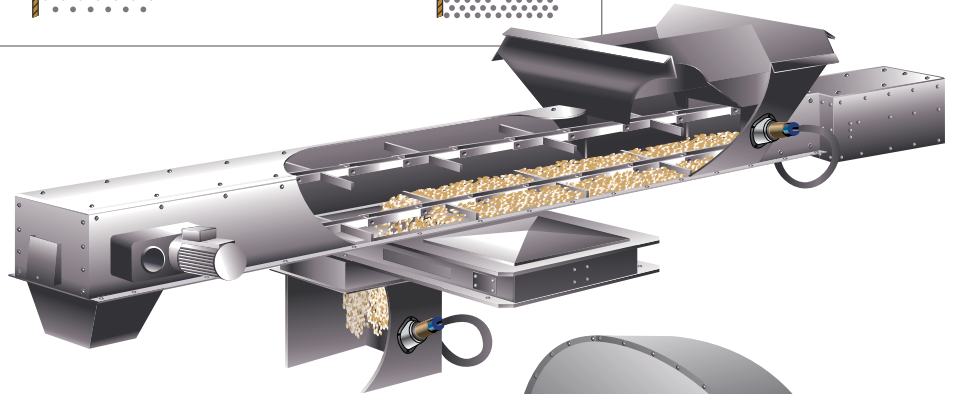
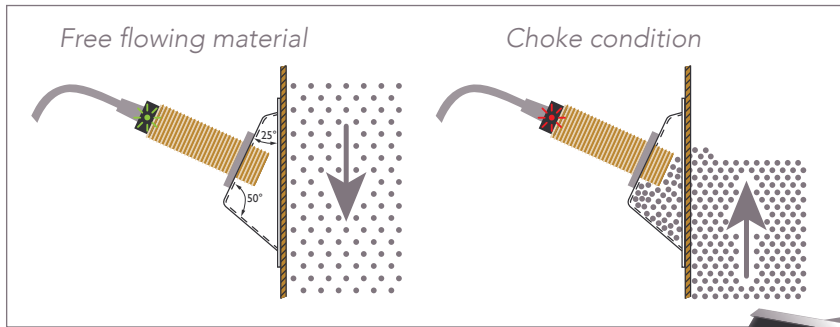
Cable : 2 m

## VIGIMAT DNC 30®

Level & choke detector: ATEX IP67 T 101°C

### APPLICATION

- Level indicator
- Jam capacitive detector



The VIGIMAT DNC 30 devices can be connected directly to a central control area or to the hazard monitor M-JET+

| DNC 30 | Voltage        | Non Atex        | Atex 22         | Atex 21         |
|--------|----------------|-----------------|-----------------|-----------------|
|        | 10-36 V DC     | 55 DNC 9301 ATS | 55 DNC 8300 CIS | 55 DNC 7300 RSS |
|        | 24-240 V AC    | 55 DNC 9302 ATS |                 |                 |
|        | 20-250 V AC/DC |                 | 55 DNC 8300 DIS |                 |

Câble 2m - 22: Cable gland - 21: 10m

# VIGITHERM GST 100<sup>®</sup> LG & GST 100<sup>®</sup> HX

**Bearing temperature sensor:**  ATEX

## GST 100 LG

### BEARING TEMPERATURE SENSOR PT 100 CLASS B

- Rated for ATEX Zone 21, Dust
- Requires connection through an intrinsic safety barrier for use in ATEX zones
- PT100 sensors require connection to an appropriate signal conditioning device
- ¼ inch grease fitting adapter
- Teflon coated and braided cable, 10M
- Operating temperature: +250°C



## GST 100 HX

### BEARING TEMPERATURE SENSOR PT 100 (CLASS B)

- Rated for ATEX Zone 20, continuous dust
- PT100 sensors require connection to an appropriate signal conditioning device
- Lug style terminal for attaching to 1/8 or ¼ inch grease fitting
- Teflon coated and braided cable, 3M
- Operating temperature: 100°C ATEX / 180°C no Atex



### STANDARDS GST100<sup>®</sup>LG

Approval type *INERIS 03 ATEX 0096 X*  
 Assembly certified  
*ATEX II 2 GD Ex iaD 21 IP6X T6,T5 or T4*

### STANDARDS GST100<sup>®</sup>HX

Approval type *LCIE 03 ATEX 6088 X*  
 Assembly certified *ATEX II1D ta IIIC Da*

The VIGITHERM GST 100 LG and VIGITHERM GST 100 HX devices can be connected directly to a central control area or to the hazard monitor M-JET<sup>+</sup>

|                   |  Atex 21 |  Atex 20 |
|-------------------|---|---|
| <b>GST 100 LG</b> | 55 GST 7100 P   |   |
| <b>GST 100 HX</b> |   | 55 GST 7100 J   |
| Câble: 10m        |   |   |

# VIGILEX®

SAFETY PROTECTION

By **STIF**

[www.vigilex.eu](http://www.vigilex.eu)

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**STIF**

components for your success

