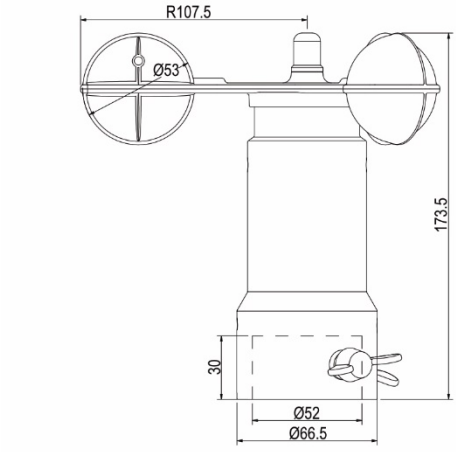
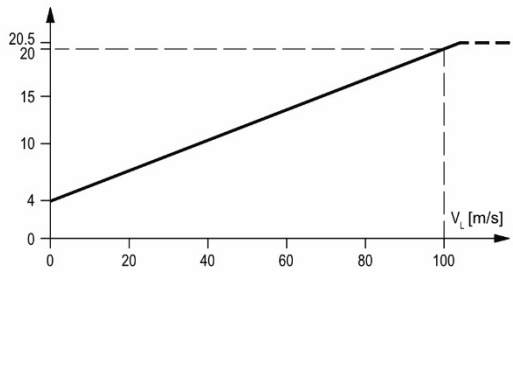
INT®10 HD Anemometer

INT10 HD

Illustration similar. Scope of delivery may deviate.



Dimensions in mm



Characteristic line

Application

KRIWAN heavy duty series anemometers are used in any situation where besides high quality wind speed measurement, error-free operation under the most challenging environmental conditions also needs to be safe-guarded. This is especially true in cases where there is a serious risk of icing at very low temperatures.
Due to specially sealed bearings suitable for use in dusty environments.
This requirement applies in particular to:

- For monitoring ski lifts and cable cars
- For wind turbines for energy optimization

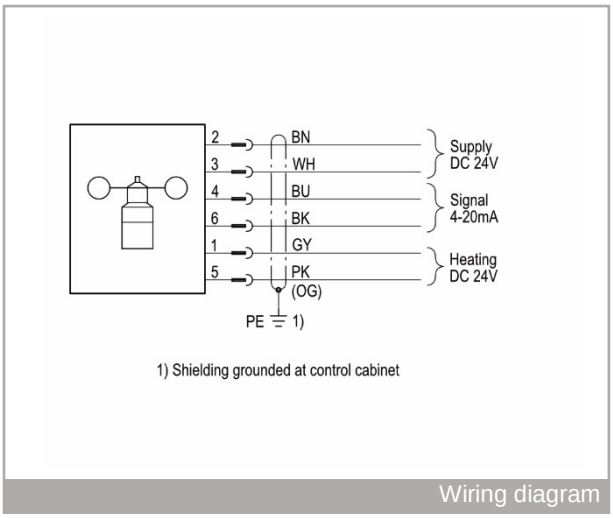
Functional description

The KRIWAN anemometer of the Heavy Duty series is used wherever, in addition to the sophisticated detection, the KRIWAN anemometer detects the current wind speed and converts it into a linear output signal without contact.
The sensor is storm and weatherproof.
The evaluation is done separately via a measuring device, a display instrument, or in the connected control and monitoring system.
Within the cup anemometer is a generous dimensioned heating, which is supplied without contact and mechanically lossless from the stationary sensor part with electrical energy. As this heater extends to the ends of the cup anemometer, all parts of the cup anemometer are heated highly efficiently. At ambient temperatures at which ice may form, switch on the heater, icing with connected heating and within the permitted ambient temperature is almost impossible. The heating is temperature-controlled and switches off automatically at too high surface temperatures.
The following features distinguish this KRIWAN anemometer:

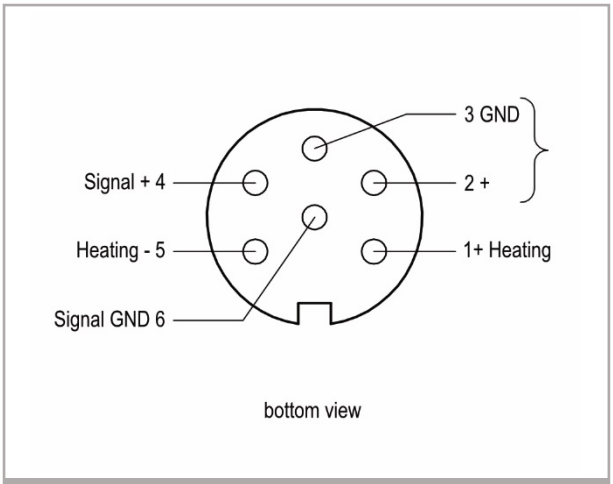
- Very sturdy and reliable industrial design
- Low starting torques with high load capacity
- High accuracy
- Extended measuring range
- Wear-free measurment
- Optimised power requirement through electronically regulated and temperature-monitored heating
- Contactless transmission of the heat in movable part of the sensor
- Easy installation
- Extended temperature range for ice-free conditions
- Specially sealed ball bearings
- Integrated overvoltage protection
- Impact and shake resistant
- Maintenance-free

Order data

INT10 HD Anemometer	13 N 310 S201
Further product information	see www.kriwan.com



Wiring diagram



Pin assignment

Spare parts

VA-wing screws, M8x16mm	**HS08016600**
Connection cable M16 6 pin, 12m	**FK14000010**
Cable socket M16 6 pin	**FA04120**

Safety instructions

The electrical connection must be carried out by a qualified electrician. The valid European and country-specific standards for the connection of electrical equipment must be observed. In order to avoid consequential damage or operational failures due to direct or indirect coupling in the event of lightning strikes, we recommend a separate lightning protection device on site.

The surface of the cup anemometer can exceed 55°C in heating mode.

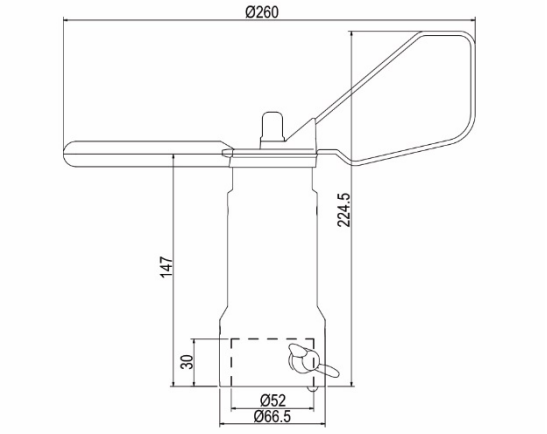
Technical data

Measuring principle	Contact-free magnetic scanning system
Measuring range	0-100m/s
Accuracy	±0.5m/s (V_Lδ35m/s); 3% of measuring value (V_L>35m/s)
Resolution	<0.1m/s
Start-up speed	<1.0m/s (ϑu=20°C)
Supply	DC 24V -25…+50% Max. 30mA Reverse polarity protection
Signal output	DC 4-20mA Limited to 20,5mA
Signal availabilty	Max. 2.5s (from voltage-free state)
Load resistance =line- + load resistor	R_{Load} ≤600Ω
Connection type - Sensor - Recommended connection cable	 6-pin plug (M16) (4x0.25mm² + 2x1.5mm²) shielded, with cable socket
Permissible ambient temperature T_A	-40...+70°C When heating is not connected: Snow and ice-free sensor is prerequisite.
Permissible relative humidity	0-100% RH
Stability	For wind speed of 100m/s (max. 30min)
Heating - Type - Connection	 Autonomously controlled heating DC 24V ±10% 120W SELV
Protection class according to EN 60529	IP66 if sensor is assembled in the specified manner
Mounting	Steel mast Max. $Ø_{outer}$ 50mm Min. $Ø_{inner}$ 37mm
Dimensions	See dimensions in mm
Housing - Material - Corrosion resistance	 Aluminium Anodised
Cup anemometer - Material - Corrosion resistance	 Aluminium Powder-coated
Weight	Approx. 750g
Check base	EN 61000-6-2, EN 61000-6-3, EN 61010-1

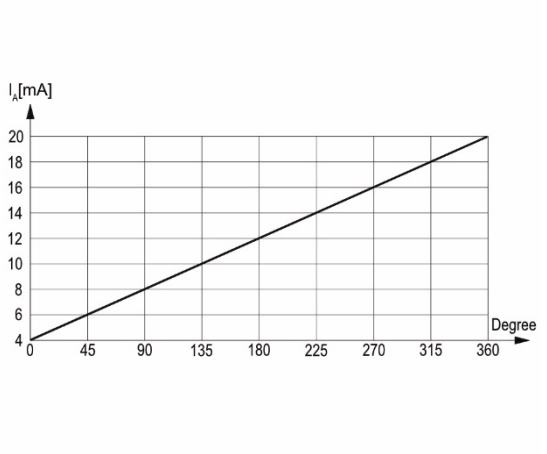
INT®30 HD Wind direction

INT30 HD

Illustration similar. Scope of delivery may deviate.



Dimensions in mm



Characteristic line

Application

KRIWAN heavy-duty wind direction sensors are used in any situation where besides high quality wind speed measurement, error-free operation under the most challenging environmental conditions also needs to be safe-guarded. This is especially true in cases where there is a serious risk of icing at very low temperatures.
Due to specially sealed bearings suitable for use in dusty environments.
This requirement applies in particular to:

- For monitoring ski lifts and cable cars
- For wind turbines for energy optimization

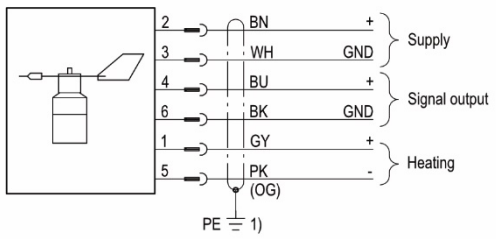
Functional description

The KRIWAN wind direction sensor detects the current wind direction and converts it without contact into a linear output signal. The sensor is storm and weatherproof.
The evaluation is done separately via a measuring device, a
Display instrument or in the connected control and monitoring technology.
Within the wind arrow there is a generously dimensioned heater that is supplied with electrical energy from the stationary sensor part without contact and with no mechanical loss. Since this heater extends to the respective ends of the wind arrow, all parts of the wind arrow are heated highly effective. At ambient temperatures, where ice can develop, the heating switches on, icing is almost impossible. The heating is temperature-controlled and switches off automatically at too high surface temperatures.
The following features characterize this KRIWAN wind direction sensor
out:

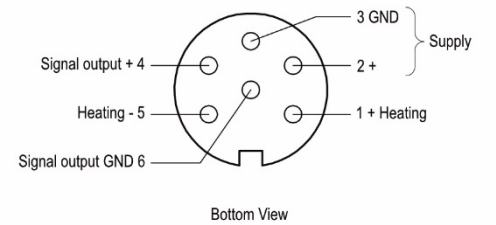
- Very robust and reliable industrial design
- Low starting torques with high load capacity
- High precision
- Wear-free measured value acquisition
- Optimized power requirement through electronically controlled and temperature-controlled heating
- Contactless transfer of heating power in the moving part of the sensor
- Easy installation
- Extended temperature range for ice-free
- Specially sealed ball bearings
- Integrated overvoltage protection
- Shock and vibration proof
- Maintenance free

Order data

INT30 HD Wind direction	13 N 330 S201
Further product information	see www.kriwan.com



Wiring diagram



Pin assignment

Spare parts

VA-wing screws, M8x16mm	**HS08016600**
Connection cable M16 6 pin, 12m	**FK14000010**
Cable socket, M16, 6 pin	**FA04120**

Safety instructions

The electrical connection must be carried out by a qualified electrician. The valid European and country-specific standards for the connection of electrical equipment must be observed. In order to avoid consequential damage or operational failures due to direct or indirect coupling in the event of lightning strikes, we recommend a separate lightning protection device on site.

The surface of the wind vane may exceed 55 ° C in heating mode.

Technical data

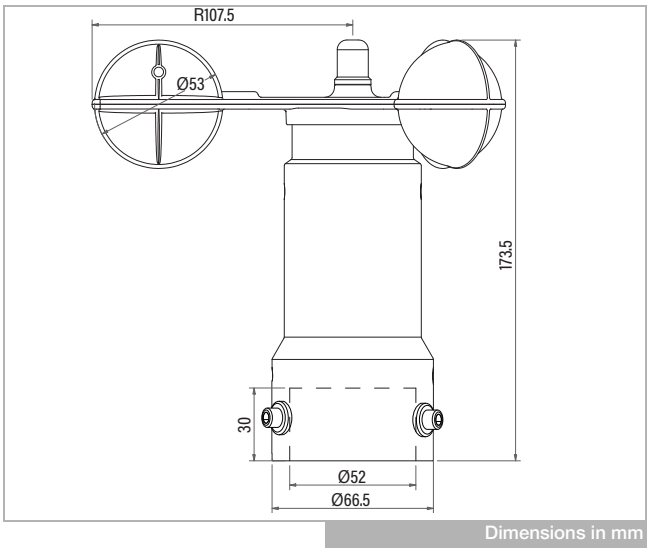
Measuring principle	Contact-free magnetic scanning system
Measuring range	0-360°
Accuracy	+-2,5°
Resolution	144 stages (2,5°)
Start-up speed	<1,0m/s (ϑu=20°C)
Supply	DC 24V ±25% Max. 30mA Reverse polarity protection
Signal output	DC 4-20mA
Signal availabilty	Max. 2,5s (from voltage-free state)
Load resistance =line- + load resistor	R_{Load} ≤600Ω
Connection type - Sensor - Recommended connection cable	 6-pin plug(M16) (4x0.25mm2 + 2x1.5mm2) shielded, with cable socket
Permissible ambient temperature T_A	-40...+70°C When heating is not connected: Snow and ice-free sensor is prerequisite.
Permissible relative humidity	0-100% RH
Stability	For wind speed of 100m/s (max. 30min)
Heating - Type - Connection	 Autonomously controlled heating DC 24V ±10% 120W SELV
Protection class according to EN 60529	IP66 if sensor is assembled in the specified manner
Mounting	Steel mast Max. $Ø_{outer}$ 50mm Min. $Ø_{inner}$ 37mm
Dimensions	See dimensions in mm
Housing - Material - Corrosion resistance	 Aluminium Anodised
Wind vane - Material - Corrosion resistance	 Aluminium Powder-coated
Weight	Approx. 750g
Check base	EN 61000-6-2, EN 61000-6-3, EN 61010-1

INT10 IF® Anemometer

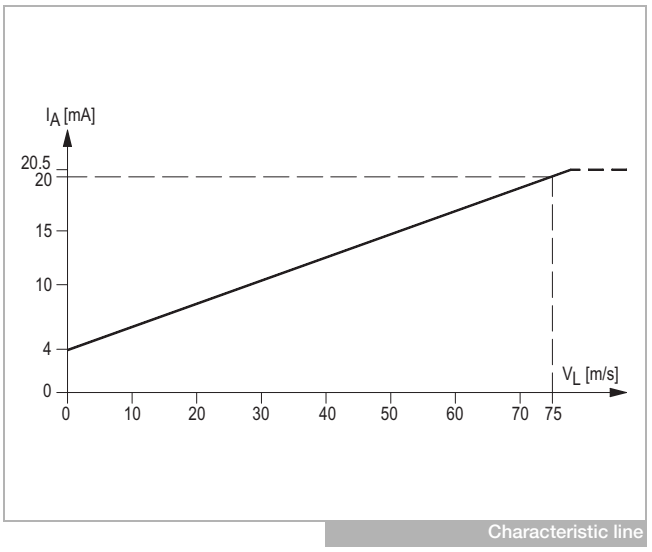
KRIWAN

INT10 IF®

INT10 IF



Dimensions in mm



Characteristic line

Application

KRIWAN ICEfight series anemometers are used in any situation where besides high quality wind speed measurement, error-free operation under the most challenging environmental conditions also needs to be safe-guarded. This is especially true in cases where there is a serious risk of icing at very low temperatures.

This requirement applies in particular to:

- Monitoring ski lifts and cable cars
- For energy optimisation in wind farms

Functional description

The KRIWAN anemometer measures the current wind speed and converts it into a linear output signal without contact. The sensor is storm-proof and weather-proof.

The evaluation is then conducted separately using a measuring device, a display instrument, or the connected control and monitoring system.

Generously dimensioned heating is located inside the cup anemometer. This is supplied with electrical energy from the fixed sensor part without contact or mechanical loss. Because the heating reaches to the end of the cup anemometer, all its parts are heated very effectively. During ambient temperatures that can cause ice, the heating switches on. When the heating is connected, the possibility of icing is mostly eliminated inside the permissible ambient temperatures. The heating has temperature monitoring and switches off automatically when the surface temperatures are too high.

The following features characterise this KRIWAN anemometer:

- Sturdy and reliable industrial design
- Low starting torque, high strength
- High accuracy
- Wear-free measurement
- Optimised power requirement through electronically regulated and temperature-monitored heating
- Contact-free transmission of heat in movable part of sensor
- Easy installation
- Extended temperature range for ice-free conditions
- Integrated overvoltage protection
- Impact and shake resistant
- $_{c}UL_{US}$ - certified
- Maintenance-free

⚠ The unit must be connected by trained electrical personnel. All valid European and national standards for connecting electrical equipment must be observed. To avoid any consequential damage or operational failure, through direct or indirect excitation in the event of lightning strikes, we recommend that a separate lightning protection device be fitted by the customer.

⚠ The surface of the cup anemometer can exceed 55°C during heating operation.

See back side for further specifications

Product group N

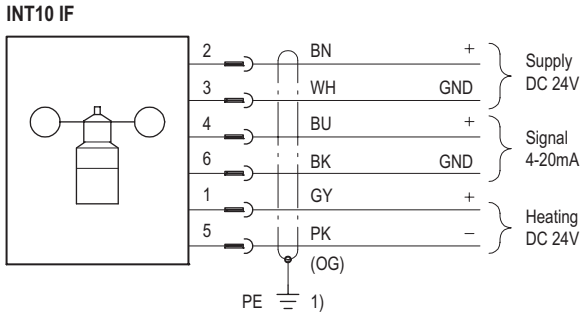
Edition: 710.00439.0

KRIWAN Industrie-Elektronik GmbH · Allmand 11 · D-74670 Forchtenberg · phone (+49) 7947 822 0 · fax (+49) 7947 1288 · e-mail: info@kriwan.com · home: www.kriwan.com

INT10 IF® Anemometer

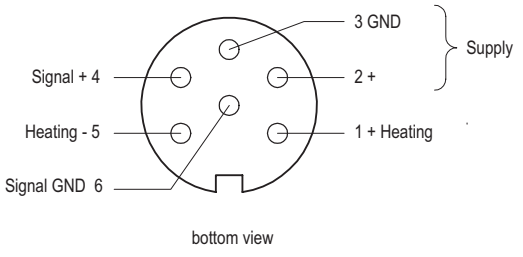
KRIWAN

INT10 IF®



1) Shielding grounded at control cabinet

Wiring diagram



bottom view

Pin assignment

Order data

INT10 IF Anemometer	**13 N 310 S101**
Accessories and application information	see www.kriwan.com

Spare parts

VA-wing screws, M8x16mm	**HS08016600**
Connecting cable, 6-pin plug (M16)	**FK14000004**

Technical specifications

Measuring principle	Contact-free magnetic scanning system
Measuring range	0-75m/s
Accuracy	±0.5m/s (V_L≤35m/s);3% of measuring value (V_L>35m/s)
Resolution	<0.1m/s
Start-up speed	<1.0m/s (ϑ_u=20°C)
Supply	DC 24V -25…+50% Max. 30mA Reverse polarity protection
Signal output	DC 4-20mA Limited to 20.5mA
Signal availability	Max. 2.5s (from voltage-free state)
Load resistance = line + load resistor	R_{Load} ≤600Ω
Connection type	
- Sensor	6-pin plug (M16)
- Attached connecting cable	(4x0.25mm² + 2x1.5mm²) shielded, 12m, with cable socket
Permissible ambient temperature T_A	-40…+70°C When heating is not connected: Snow and ice-free sensor is prerequisite.
Permissible relative humidity	0-100% RH
Stability	For wind speed of 80m/s (max. 30min)
Heating	
- Type	Autonomously controlled heating
- Connection	DC 24V ±10% 120W SELV
Protection class according to EN 60529	IP66 if sensor is assembled in the specified manner
Mounting	Steel mast Max. $Ø_{outer}$ 50 mm Min. $Ø_{inner}$ 37 mm
Dimensions	See dimensions in mm
Housing	
- Material	Aluminium
- Corrosion resistance	Anodised
Cup anemometer	
- Material	Aluminium
- Corrosion resistance	Powder-coated
Weight	
- Sensor	Approx. 750 g
- Cable	Approx. 1.8kg
Check base	EN 61000-6-2, EN 61000-6-3, EN 61010-1
Approval	UL file no. E240032

Technical changes reserved

KRIWAN Industrie-Elektronik GmbH · Allmand 11 · D-74670 Forchtenberg · phone (+49) 7947 822 0 · fax (+49) 7947 1288 · e-mail: info@kriwan.com · home: www.kriwan.com

Product group N

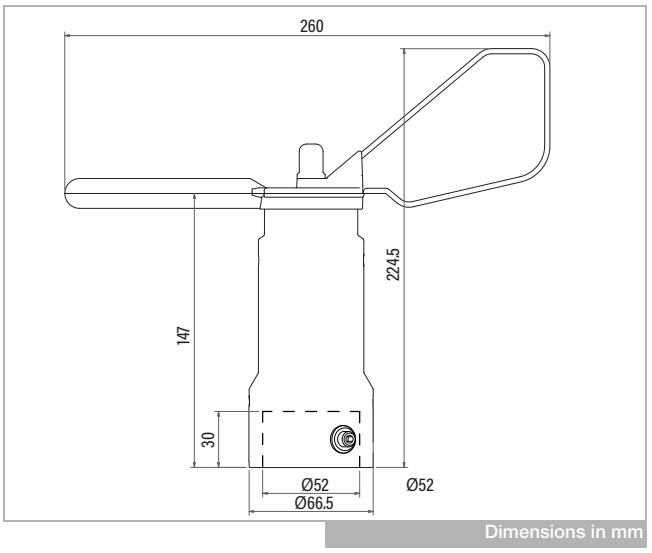
Edition: 710.00439.0

INT30 IF® Wind Direction

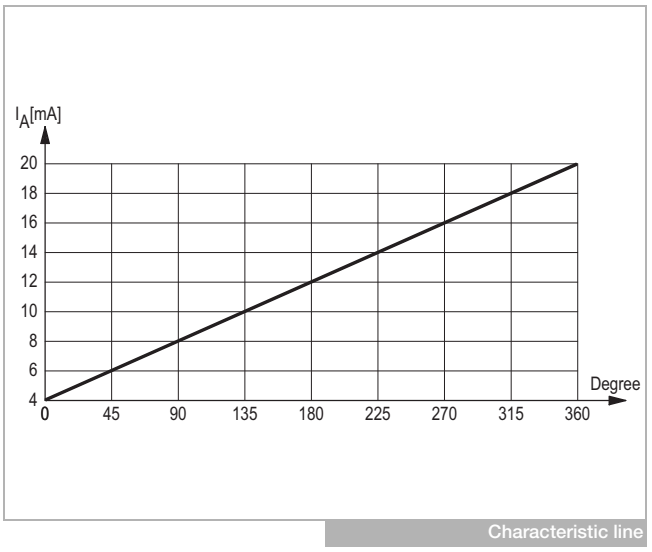
KRIWAN

INT30 IF®

INT30 IF



Dimensions in mm



Characteristic line

Application

KRIWAN ICEfight series wind direction sensors are used in any situation where besides high quality wind direction measurement, error-free operation under the most challenging environmental conditions also needs to be safe-guarded. This is especially true in cases where there is a serious risk of icing at very low temperatures.

This requirement applies in particular to:

- Monitoring ski lifts and cable cars
- For energy optimisation in wind farms

Functional description

The KRIWAN wind direction sensor measures the current wind direction and converts it into a linear output signal without contact. The sensor is storm-proof and weather-proof.

The evaluation is then conducted separately using a measuring device, a display instrument, or the connected control and monitoring system.

Generously dimensioned heating is located inside the wind vane. This is supplied with electrical energy from the fixed sensor part without contact or mechanical loss. Because the heating reaches to the end of the wind vane, all its parts are heated very effectively. During ambient temperatures that can cause ice, the heating switches on. When the heating is connected, the possibility of icing is mostly eliminated. The heating has temperature monitoring and switches off automatically when the surface temperatures are too high.

The following features characterise this KRIWAN-wind direction sensor:

- Sturdy and reliable industrial design
- Low starting torque, high strength
- High accuracy
- Wear-free measurement
- Optimised power requirement through electronically regulated and temperature-monitored heating
- Contact-free transmission of heat in movable part of sensor
- Easy installation
- Extended temperature range for ice-free conditions
- Integrated overvoltage protection
- Impact and shake resistant
- $_{c}UL_{US}$ - certified
- Maintenance-free

⚠ The unit must be connected by trained electrical personnel. All valid European and national standards for connecting electrical equipment must be observed. To avoid any consequential damage or operational failure, through direct or indirect excitation in the event of lightning strikes, we recommend that a separate lightning protection device be fitted by the customer.

⚠ The surface of the wind vane can exceed 55°C during heating operation.

See back side for further specifications

Product group N

Edition: 710.00440.0

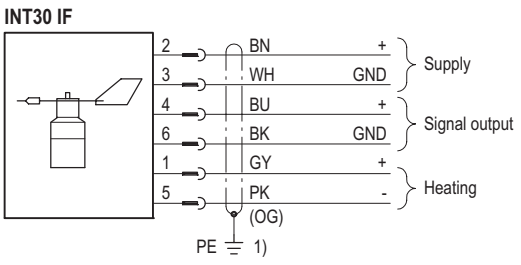
Technical changes reserved

KRIWAN Industrie-Elektronik GmbH · Allmand 11 · D-74670 Forchtenberg · phone (+49) 7947 822 0 · fax (+49) 7947 1288 · e-mail: info@kriwan.com · home: www.kriwan.com

INT30 IF® Wind Direction

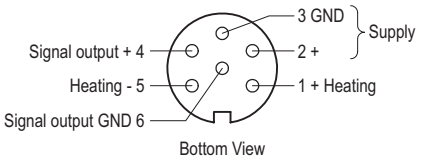
KRIWAN

INT30 IF®



1) Shielding grounded at control cabinet

Wiring diagram



Pin assignment

Technical specifications

Measuring principle	Contact-free magnetic scanning system
Measuring range	0-360°
Accuracy	±2.5°
Resolution	144 stages (2.5°)
Start-up speed	<1.0m/s (ϑ_u=20°C)
Supply	DC 24V ±25% Max. 30mA Reverse polarity protection
Signal output	DC 4-20mA
Signal availability	Max. 2.5s (from voltage-free state)
Load resistance = line + load resistor	R_{Load} ≤600Ω
Connection type	
- Sensor	6-pin plug (M16)
- Attached connecting cable	(4x0.25mm² + 2x1.5mm²) shielded, 12m, with cable socket
Permissible ambient temperature T_A	-40…+70°C When heating is not connected: Snow and ice-free sensor is prerequisite.
Permissible relative humidity	0-100% RH
Stability	For wind speed of 80m/s (max. 30min)
Heating	
- Type	Autonomously controlled heating
- Connection	DC 24V ±10% 120W SELV
Protection class according to EN 60529	IP66 if sensor is assembled in the specified manner
Mounting	Steel mast Max. $\varnothing_{outer}$ 50 mm Min. $\varnothing_{inner}$ 37 mm
Dimensions	See dimensions in mm
Housing	
- Material	Aluminium
- Corrosion resistance	Anodised
Wind vane	
- Material	Aluminium
- Corrosion resistance	Powder-coated
Weight	
- Sensor	Approx. 750 g
- Cable	Approx. 1.8kg
Check base	EN 61000-6-2, EN 61000-6-3, EN 61010-1
Approval	UL file no. E240032

Order data

INT30 IF Wind Direction	**13 N 330 S101**
Accessories and application information	see www.kriwan.com

Spare parts

VA-wing screws, M8x16mm	**HS08016600**
Connecting cable (M16) 6-pin	**FK14000004**

Technical changes reserved

KRIWAN Industrie-Elektronik GmbH · Allmand 11 · D-74670 Forchtenberg · phone (+49) 7947 822 0 · fax (+49) 7947 1288 · e-mail: info@kriwan.com · home: www.kriwan.com

Product group N
Edition: 710.00440.0