

NAEV30-DI... Special functions

Digital signals (ON/OFF) – intrinsic safety inputs – special functions

- Function hysteresis : 2 inputs for a single output on safe side
- Function “control of line fault”
- Function “dual recopy output”: 1 active +1 passive
- Function “frequency input with NAMUR output”

ATEX 94/9/CE



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SPECIFICATIONS

Function “Hysteresis”

This feature is available on dual digital I.S. inputs barriers **NAEV30-DI2H...** which give a recopy output on safe side as a function of the 2 associated inputs: as a contact or an open collector.

Cut-off power : 230 VAC – 0.5 A –115 VA

Collector cut-off power:15V – 60 mV – 0.9 VA –350 Hz

When the hysteresis function is active, the cycle as seen by the barrier is the following: the valve is considered open as long as it is not really closed and it remains closed as long as it is not really open. The logic of the recopy can be configured in one way or the opposite.

This feature is useful to control the 2 position feedbacks of the same valve: the barrier gives the position of the valve with only 1 signal. This can save space, complexity and money on a DCS or a PLC while taking really into account the 2 informations of the valve.

Function “control of line fault”

NAEV30 barriers with this feature are dual channel barriers. Faulty line on a NAMUR proximity switch line (open circuit or short-circuit) is detected and is available on an independent output on safe side dedicated to the “safety” supervision by a DCS or a PLC.

This feature is highly appreciated when you use capacitive or NAMUR vibrating rods on tank level alarms. By this way you can secure the level alarm overflow.

For all specifications about inputs, recopies, power supplies, classification for hazardous areas, dimensions, instructions for installation and connections, refer to data sheet NAEV30-DI2 Or DI4N n° 773”

Function “dual recopy output”

This feature is available on the dual channel barriers called **NAEV30-DI2NAP-C024...** Each intrinsic safety digital input has dual recopy outputs on safe side :

- the first one is active (22VDC / 0.1A)
- the second one is passive by mean of a free potential contact.

This feature is useful to send a the same time a digital input to a control DCS or a PLC and to send the same information by a second channel to a buzzer or an alarm light.

You can also choose the “P” option for the passive outputs : open collector with cut-off power:15V – 60 mV – 0.9VA –350Hz.

Function “frequency input with NAMUR output”

This feature is available on the 2- and 4-channel barriers called **NAEV30-DI.N-...-PN**. This feature is very useful for the transfer of information in speed rotation measurement. The recopy on safe side is an optoelectronic output to be considered as a NAMUR proximity detector. For the end-user such as a PLC or DCS. **NAEV30-DI.N-...-PN** is fully transparent.

Classification for explosive areas

NAEV30- is an intrinsic safety associated apparatus. It must be installed in safe area and connected to materials installed in zone 0, 1 or 2 - gas (G) or in zone 20, 21 or 22 - dust (D).

Classification according to ATEX 94/9/CE : II G/D N° LCIE 00 ATEX 6034X

Marking depending on setting up of standard evolution
[EEx ia] IIC
or [Ex ia] IIC – [Ex iaD]

For safe use refer to ATEX instruction

Ambient operating temperature : -20°C to +60°C

Recommended operating temperature : -20°C to +50°C

Storage temperature : -40°C to +80°C

Other models in the NAEV30- series enable the control of 1, 2 or 4binary outputs and complete ON/OFF valve function (1 output + 2 inputs).

Reference **NAEV30-(1)-(2)-(3)** possible impossible

Inputs function	Type (1) NAEV30- ...	Power supply (2)			Option (3)	
		A230	A115	C024	Relay	Collector
2 inputs hysteresis function	DI2H	Y	Y	Y	O	P
2 inputs control of line fault function	DI2ND	Y	Y	Y	O	P
2 inputs dual recopy output	DI2NAP	N	N	Y	O	P
2 NAMUR or contact	DI2N	Y	Y	Y	O	P
4contacts/NAMUR	DI4N	Y	Y	Y	O	P

Supply

A230: 230 V 50 Hz

A115: 115 V 50 Hz

C024: 24VDC

Option 3

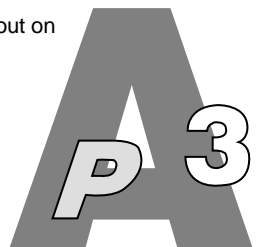
P: Open collector output

O: relay output

Example : **NAEV30-DI2ND-C024-0** is a suitable model



This material bears CE mark according to directive 89/336/CEE. It complies with standards EN 50081-2 and EN50082-2. Complementary tests based on other standards and physical requirements have been carried out on several products. For more information call our technical department.





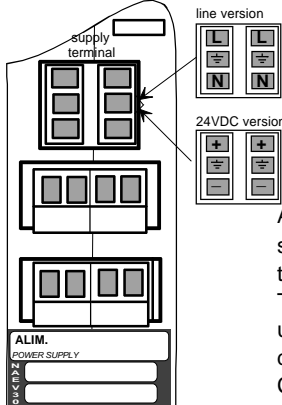
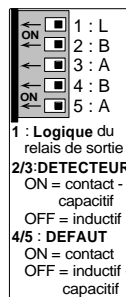
SELECTING the TYPE of DETECTOR and the LOGIC

To select the type of detector and the logic, remove the front panel and refer carefully to written instructions.

NAEV30-DI2H... provides on the safe side a free potential contact, open or closed according the cycle of detection of the 2 input sensors.

A group de 5 mini-Dip enable the selection of the sensor for each channel A or B (inductive / capacitive according NAMUR or simple contact) and the inversion of the output relay action.

NAEV30-DI2H... works according the cycle of detection of a target by the proximity detectors. You need to define first a logic diagram associated to the 2 sensors. Position 1 enables to invert the output relay action.



Care POWER SUPPLY CONNECTION

Power distribution by mean of plug-in jumpers from one unit to its neighbour (AC or 24 VDC). All connectors are removable.

All units are equipped with 2 terminal blocks to dispatch the auxiliary power supply: in orange colour for net supply (L = N) or in black colour for 24 VDC (+ = -). One block for input and one block to make a bridge to the next unit by mean of a flat cable supplied in standard.

To avoid electrical chocks, all these connectors must always be filled. If only one of the 2 terminal blocks is used (without giving supply to the next unit), the second block must be filled by the 3-points empty cap delivered in standard.

Cable-layer should connect power supply wires and jumpers on both ends of the line of interfaces

This equipment has a 1-year warranty including parts and labour for all materials returned in our factory. Even when the warranty period is over, only A puissance 3 has the authority to modify and repair a certified electrical component or material for hazardous atmospheres of its own production and covered by a certificate of conformity or an EC-type examination certificate. Should this clause not adhered to, will

A puissance 3 no longer be held liable for any non-conformity noticed a posteriori.

Models – Functions	Synoptic	Connections	
		on I.S. side	On safe side
<p>NAEV30-DI2N and NAEV30-DI2H 2 inputs NAMUR or contact with hysteresis option (DI2H) or w/o (DI2N). Dedicated to contacts, valve position feedbacks, temperature or pressure switch, and push buttons. <u>Option P:</u> safe side output with open collector.</p> <p>Possibility to connect a common wire '+' for 2 channels (3 wires instead of 4).</p>		<p>NAEV30-DI2H or DI2ND or DI2NAP</p>	<p>NAEV30-DI2N</p>
<p>NAEV30-DI2ND :2 inputs NAMUR with line fault detection. Specially adapted when you use capacitive or NAMUR vibrating rods on tank level alarms. By this way you can secure the level overflow alarm. <u>Option P:</u> safe side output with an open collector.</p> <p>Possibility to connect a common wire '+' for 2 channels (3 wires instead of 4).</p>		<p>NAEV30-DI2ND</p>	<p>NAEV30-DI2NAP</p>
<p>NAEV30-DI2NAP: 2 NAMUR or contact inputs. Each intrinsic safety digital input has dual recopy outputs on safe side one is active, the second one is passive. <u>Option P:</u> safe side output with an open collector.</p> <p>Possibility to connect a common wire '+' for 2 channels (3 wires instead of 4). NAEV30-DI.N...-PN: for connections report to data sheet 773 "NAEVDI2 or DI4"</p>		<p>NAEV30-DI2ND</p>	<p>NAEV30-DI2NAP</p>

