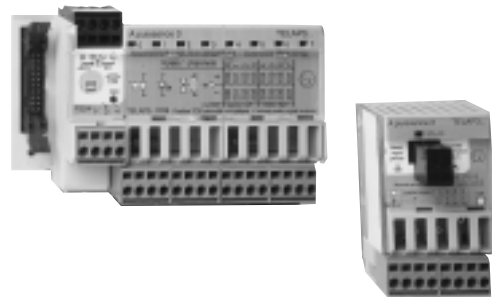


Ready-to-mount- wiring system

- Barriers for hazardous area
- Intrinsic safety [EEx ia] IIC
- Digital Inputs and Outputs (TOR)
- 8 channels per housing
- Hat profile 35mm rail mount
- Fast connection to PLC



TELAP3 is a system of interfaces for digital inputs and outputs in intrinsic safety (IS) based on a ready to mount concept convenient for all major PLC existing on the market. **TELAP3** is certified as an intrinsic safety associated apparatus : it must be installed in Safe Area.

TELAP3 offers different functional blocks :

- digital inputs blocks to control free-potential contacts or proximity detectors NAMUR inductive, capacitive or optical
- digital outputs blocks to control of solenoid valve pilot units, loads or lights,

Other functional units also enable the treatment of analog signals in the same philosophy and kind of housings. These functional blocks must be associated to the convenient power supply units for which the choice, the modularity (1 for 1, 1 for 2 or 1 for 4) will be done in accordance with the quantity of chosen loads and suitable type of barriers. Each functional block can be connected to up to 8 independent channels.

TELAP3 family is certified [EEx ia] IIC according to CENELEC EN50014 et EN50020 standards and meets ATEX requirements directive ATEX/94/9/CE.

TELAP3 units can be installed on hat-profile 35 mm rails: connections on hazardous area side are done by mean of removable spring terminals, connections to PLC on safe side are done by mean of connectors and cables convenient and dedicated to the chosen PLC.

CONCEPTION AND ARCHITECTURE

TELAP3 provides an original modular and very flexible architecture.

A set of digital inputs and outputs is made of 2 different units :

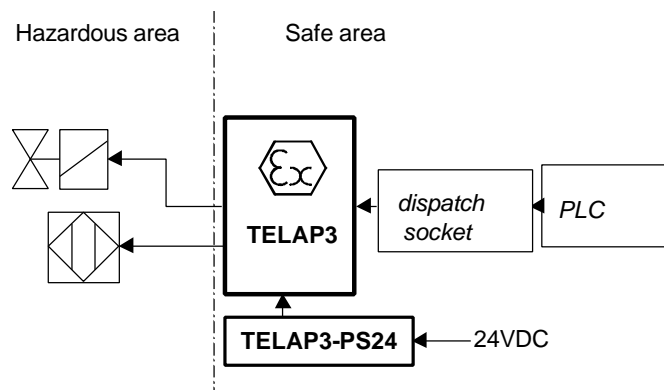
- 1 specific power supply unit **TELAP3-PS24** connected to one or several inputs units **TELAP3-DI8** (digital inputs) or **TELAP3-DO8** (digital outputs)

This original technical method enables the reduction of heating points in the cabinets containing I.S. barriers.

Power supplies units **TELAP3-PS24** generating calories by Joule effect can be installed in a remote place (for example in a cooled-cabinet) in order to reduce heating effects and to permit a higher concentration of **TELAP3-DI8** or **TELAP3-DO8** units in the cabinet.

This will ensure the full respect of ambient temperature conditions requested by the Intrinsic Safety certificate of conformity

OVERVIEW DRAWING





DIGITAL INPUTS UNIT TELAP3-DI8

TELAP3-DI8 unit enables connections with up to 8 digital inputs in intrinsic safety. Each of these inputs can be a free-potential contact (push-button, temperature or pressure switch...) or a proximity detector as per NAMUR (inductive, capacitive or optical).

On the safe side, there is a recopy system of each input according to the logic (normal or reverse) chosen by mean of a mini-DIP on the front panel.

Output is given on a free-potential contact with one common point to the 8 channels. Shut-off values 230 VAC / 0,5 A / 120 VA. When « **AB** » connector is connected to a 24 VDC coming from the PLC, common point of the 8 outputs is the ground (0V) and each contact will send back a 24 VDC (+) to each of the 8 digital inputs of the PLC.

LED annunciators :

- 1 green LED for each channel, located on front panel, displays the change of status of the dedicated channel.
- 1 yellow front LED, located on front panel, is "ON" when the connection with the power supply unit **TELAP3-PS24** is active.
- 1 green LED located near the AB connector is ON when the AB supply is active

On TELAP3-DI8A, it is possible to use a unique common '+' wire for 4 channels

DIGITAL OUTPUTS UNIT - TELAP3-DO8

TELAP3-DO8 unit enables excitations of up to 8 digital loads in hazardous area (such as solenoid valves, lights, buzzers...).

Corresponding Non IS with common ground will control the relays with 1 green LED on front panel for each channel. Nominal values of excitation 24VDC (min. 19 VDC) / 10.2 mA (min.7.2 mA).

2 models are available according to requested power for excitation of intrinsic safety loads.

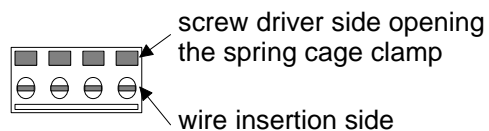
Reference	Channels	Power/load	Observations
TELAP3-DO8H	8	12V/40 mA	6 loads excited at the same time
TELAP3-DO8L	8	18.6V/5mA or 21.6V/2mA	for 32 channels per 1 PS24

LED annunciators :

- 1 yellow front LED located on the front panel is "ON" when the connection with the power supply unit **TELAP3-PS24** is active.
- 1 green LED located near the AB connector is ON when the AB supply is active

On TELAP3-DO8L, it is possible to use a unique common '-' wire for 4 channels

USE OF SPRING TERMINALS



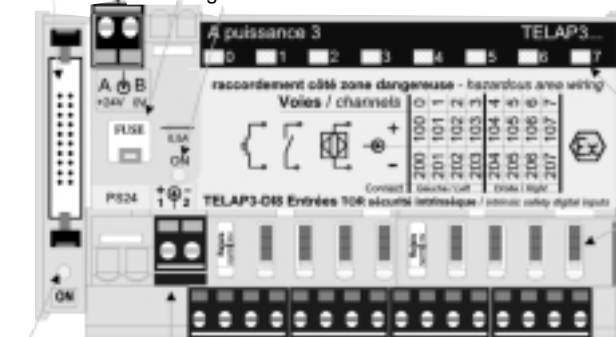
TELAP3-DI8

HE10 connector for direct link to PLC

AB terminals : 24 Vdc from PLC

protection fuse for AB terminals

green LED on when 24Vdc PLC is active



yellow LED "ON" when PS24 supply is active

terminals 1-2 : connection to PS24

terminals 100 to 207 : connections to hazardous area "inputs"

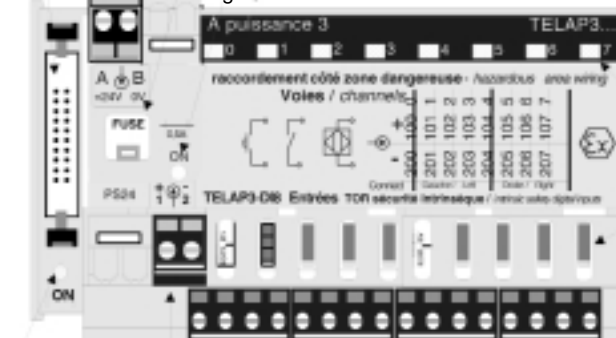
DIGITAL OUTPUTS UNIT - TELAP3-DO8

HE10 connector for direct link to PLC

AB terminals : 24 Vdc from PLC

protection fuse for AB terminals

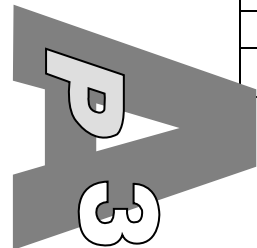
green LED on when 24Vdc PLC is active



yellow LED "ON" when PS24 supply is active

terminals 1-2 : connection to PS24

terminals 100 to 207 : connections to hazardous area "outputs"



POWER SUPPLY UNIT TELAP3-PS24

The power supply unit **TELAP3-PS24** offers 4 outputs to provide energy to ensure a correct use of barriers units **TELAP3-DI8** and **TELAP3-DO8**

These blocks, according to models, do not require all the same quantity of energy so the power supply unit can power from 1 to 4 of these blocks.

Examples of configuration, « **TELAP3-PS24** » can supply :

- For digital outputs :
1 x TELAP3-DO8H block for 8 solenoid valves each around 12VDC / 40 Ma, in which 6 valves excited at the same time.
 Or **4 x TELAP3-DO8L** block for 8 solenoid valves each around 20 VDC / 5 mA.
- for digital inputs :
2 x TELAP3-DI8 blocks for 8 NAMUR detectors or free potential contacts each.
- To mix digital inputs and outputs :
1 x TELAP3-DI8 for 8 detectors according to NAMUR or free-potential contacts.
 And **1 x TELAP3-DO8L** for 8 solenoid valves with a consumption of 20V/5mA.

INTRINSIC SAFETY PARAMETERS

TELAP3 is an intrinsic safety associated apparatus. It must be installed in safe area.
 Class [EEx ia] IIC - N° : LCIE 99.E6060X
 Ambient working temperature : -20 to +50°C
 Loads or apparatuses connected to the terminals of **TELAP3-DO8** or **TELAP3-DI8** units shall meet intrinsic safety rules and all kind of associations of different apparatuses shall be compatible according intrinsic safety rules.

DIMENSIONAL DATA

Symmetric DIN rail (hat-profile 35mm in compliance with NFC63015 / EN50022 standard).
 Length on rail/width on rail/depth from the superior face of the rail :
 Supply unit : L = 50 / h = 75 / p = 75 mm
 Inputs or outputs units : L = 125 / h = 75 / p = 60 mm
 Minimal distance between rails: 120-mm normal mount with respect to intrinsic safety creepage lines.
 In this case, free space between 2 lines of units: 40 mm.

Prior to any connection, always refer to intrinsic safety certificate of conformity done by LCIE

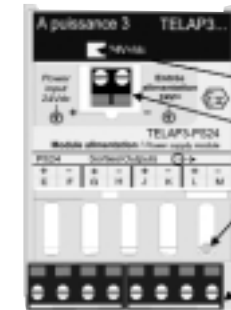
Summary of the connections parameters (extract of the intrinsic safety certificate of conformity)

Module	Uo (V)	Io(mA)	Po(mW)	IIC			IIB		
				Lo(mH)	Lo (mH) 1 common	Co (nF)	Lo(mH)	Lo (mH) 1 common	Co (nF)
DO8H	26.3	102	670	3	xxx	97	25	xxx	740
DO8L	26.3	31	200	22	2.5	97	130	10	740
DI8A	8.6	16.8	16.8	150	11	5900	500	35	50000



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

TELAP3 - PS24



green LED on when 24Vdc PLC is active
 power supply 24Vdc
 green LED "ON" when power supply is connected to I/O functional blocks
 terminals E-F, G-H, J-K and L-M : to terminals 1-2 of DI8 or DO8 block

SUPPLY and CONNECTIONS :

Supply of TELAP3-TELAP3 : 24VDC, -5%+10% / 12 W
 Supply of units **TELAP3-DI8** and **TELAP3-DO8** by unit **TELAP3-PS24**. All connections on pullout spring terminals.

ENVIRONMENTAL

Working temperature range : -20 to +50°C
 Storage temperature range : -40 to +80°C

This material is guaranteed 1 year, parts and work, return in our factory. This equipment has a 1-year warranty including parts and labour for units returned in our factory. Even after this warranty period has expired, only A puissance 3 has the authority to modify and repair a certified electrical component or apparatus for explosive atmospheres. If this clause is not adhered to, A puissance 3 can no longer be held liable



References

Designation

8 channels intrinsic safety digital inputs unit
 8 channels intrinsic safety digital outputs unit, low consumption
 8 channels intrinsic safety digital outputs unit, high consumption
 Power supply unit

Accessories

Designation

Distribution board, DIN rail mount 2 x 8 = 16
 Distribution board, DIN rail mount 2 x 8 = 16 with polarity choice
 Distribution board, DIN rail mount with redundancy terminals for DI8
 Distribution board, DIN rail mount 2 x 8 = 16 with external safety terminals for DO8
 HE10 empty terminal
 Female connector HE10 20pts
 Connection cable with HE10/HE10 connectors – 0.5m
 Connection cable with HE10/HE10 connectors - 1m
 Connection cable with HE10/HE10 connectors - 2m
 Connection cable with HE10/HE10 connectors - 3m
 Connection cable with HE10/HE10 connectors - 5m
 Connection cable with HE10 connector / free wires with tags - 3m
 Connection cable with HE10 connector / free wires with tags - 5m
 Connection cable with HE10 connector / free wires with tags - 10m

Reference

TELAP3-DI8
TELAP3-DO8L
TELAP3-DO8H
TELAP3-PS24

Reference

ABE7ACC02
Please call us
TELAP3-SECURDI 16
TELAP3-SECURDO16

ABC6HE20F

TSXCDP053

TSXCDP103

TSXCDP203

TSXCDP303

TSXCDP503

TSXCDP301

TSXCDP501

TSXCDP1001

Connections table for cable HE10 connector / free wires ends

Wires colours		Channel or signal
Colour	rings	
White		0
Brown		1
Green		2
Yellow		3
grey		4
Rose		5
blue		6
red		7
Black		8
Violet		9
grey	rose	10
red	bleu	11
White	green	12
Brown	green	13
White	yellow	14
Yellow	brown	15
White	grey	+24V
grey	brown	0V
white	rose	+24V
rose	brown	0V

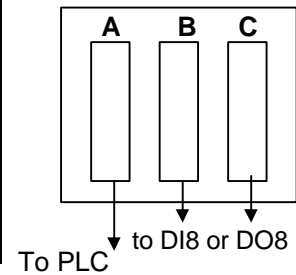
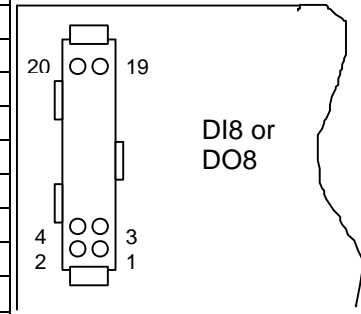
On a standard DI8 unit, each activated channel gives a non IS +24VDC to PLC if AB connector is powered and connected

On a DO8 unit, each channel is controlled by a 24 VDC supply given by the PLC

On a cable distribution board 2 x 8 = 16, channels 0 to 7 on connector A correspond to connector B and channels 8 to 15 on connector A correspond to connector C

HE10 connector pin table for DI8 or DO8

HE10	Channel
1	0
2	1
3	2
4	3
5	4
6	5
7	6
8	7
9	N.C.
10	N.C.
11	N.C.
12	N.C.
13	N.C.
14	N.C.
15	N.C.
16	N.C.
17	+24V
18	0V
19	+24V
20	0V



SECURDI-16 accepts connections of 2 x DI8 to PLC and connection by pullout screw terminals to another system (safety PLC, supervision) Signals from connector A and terminals 0 to 15 are isolated by relays.

SECURDO-16 accepts connections of 2 x DO8 to PLC, and adds-on of screw terminals for free potential contacts (for validation of safety relays, Push-buttons...). On each channel from 0 to 15, a mini-DIP enables to select or not the action of an external contact which is added in serial to the PLC digital output.

