

## INTRODUCTION

Hereafter are reported the safety instructions for use of DATEXEL Associated Apparatus, in compliance with the European standard 94/9/EC (ATEX).

Read carefully these instructions before to install or test the following devices:

**DAT 5030 IS /A  
DAT 5030 IS /AH  
DAT 5030 IS /B  
DAT 5030 IS /BH**



## DESCRIPTION

The Associated Apparatus DAT 5030 IS /A, DAT 5030 IS /AH, DAT 5030 IS /B and DAT 5030 IS /BH are designed and manufactured by DATEXEL Srl Tradate (VA) in compliance with the Essential Health and Safety Requirements defined by the Directive 94/9/EC (ATEX), Group II, Category (1) G D, in compliance with the Normes EN 60079-0, EN 60079-11, EN 61241-0 and EN 61241-11.

## MARKING

CERTIFICATE NUMBER:

**CESI 04 ATEX 095**

PROTECTION MODE:

**[Ex ia] IIC / [Ex iaD]**

Associated Apparatus,  
category "ia", group "IIC", for installation in safe area.

ATEX CODE:

**CE 0722  II (1) G D**

0722	nr. Notified Body charged of surveillance on production (CESI)
II	Group II (surface installations)
(1)	Category 1 apparatus (associated apparatus)
G D	Explosive atmosphere of gases, vapours and mists(G) ; dusts (D)

# ELECTRICAL CHARACTERISTICS

## Intrinsically safe specifications:

**DAT 5030 IS /A (single channel)**

**DAT 5030 IS /AH (single channel + HART)**

Terminals J-I; A-B-C-D : Um = 250 V			
Terminals 4-6:		Terminals 6-5:	
Uo = 26.4 V	Ui = 30 V	Uo = 1.2 V	Ui = 30 V
Io = 93 mA	Ii = 100 mA	Io = 46 mA	Ii = 100 mA
Po = 615 mW	Pi = 0.75 W	Po = 14 mW	Pi = 0.75 W
Lo = 4.2 mH	Li = ~ 0 mH		Li = ~ 0 mH
Co = 75 nF	Ci = 12 nF		Ci = 12 nF
Ta : -20 ÷ +60 °C			

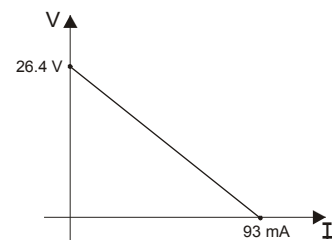
**DAT 5030 IS /B (double channel)**

**DAT 5030 IS /BH (double channel + HART)**

Terminals J-I; A-B-C-D; O-P-Q-R : Um = 250 V			
Terminals 4-6; 14-16:		Terminals 6-5; 16-15:	
Uo = 26.4 V	Ui = 30 V	Uo = 1.2 V	Ui = 30 V
Io = 93 mA	Ii = 100 mA	Io = 46 mA	Ii = 100 mA
Po = 615 mW	Pi = 0.75 W	Po = 14 mW	Pi = 0.75 W
Lo = 4.2 mH	Li = ~ 0 mH		Li = ~ 0 mH
Co = 75 nF	Ci = 12 nF		Ci = 12 nF
Ta : -20 ÷ +60 °C			

## Load characteristic

Terminals 4-6 and 14-16:



**NOTE:** The electrical parameters on terminals 6-5 and 16-15 are within the limits defined in the par. 5.7 of the standard EN 60079-11 relative to "Simple Apparatus".

## Operative temperature:

Ta : -20 ÷ +60 °C

# SAFETY INSTRUCTIONS FOR INSTALLATION, USE and MAINTENANCE

The installation and maintenance of DATEXEL Associated Apparatus must be made in compliance with the Standards relative to electric installations in hazardous areas. Before install the device, read carefully the relative instructions sheet and respect the following standards:

### Hazardous areas with GAS atmosphere (not mines)

- Standard EN 60079-14 (current edition) for choice and installation of the equipments.
- Standard EN 60079-25 (current edition) for intrinsically safe Systems.  
(note: every "typology" of Ex i system must be described in a "System description" document ).
- Standard EN 60079-17 (current edition) for check and maintenance.

### Hazardous areas with presence of COMBUSTIBLE DUSTS

- Standard EN 61241-14 (current edition) for choice and installation of the equipments.
- Standard EN 61241-17 (current edition) for check and maintenance.

To guarantee a correct and safe operation of devices, respect the following requirements:

- 1) All devices connected to the output and power supply terminals and to relays must be subjected at a maximum voltage of 250 Vrms (Um). The power supply voltage value must be included between 20 and 30 Vdc.
- 2) The devices must be installed in a **SAFE AREA** or in hazardous area if they have been closed in an explosion proof enclosure. Moreover, it is necessary to connect the devices in applications that guarantee them a minimum grade of protection IP20 for internal places, or IP54 for external places.
- 3) Repair of devices and substitution of protections must be executed only by DATEXEL s.r.l.

# APPLICATION NOTES

The device DAT 5030 IS operates as a power supplier and isolated repeater of 0÷20 and 4÷20mA current loop both active and passive. The input signal coming from an hazardous area (ZONE 0,1 or 2) is isolated, converted and provided in a safe area as a voltage (up to 10V) or current (up to 20 mA) signal. The model 'DAT 5030 IS /A ' is a single channel repeater; the model 'DAT 5030 IS /B' is a double channel repeater: it can be used also as signal doubler, connecting in serie the inputs of two measure channel. The models DAT 5030 IS /AH and DAT 5030 IS /BH are able to transfer an HART signal between input and output .

All devices make a galvanic isolation between input and output; this is necessary when the sensor has not a right isolation to the ground. All device are designed for mounting on DIN rail.

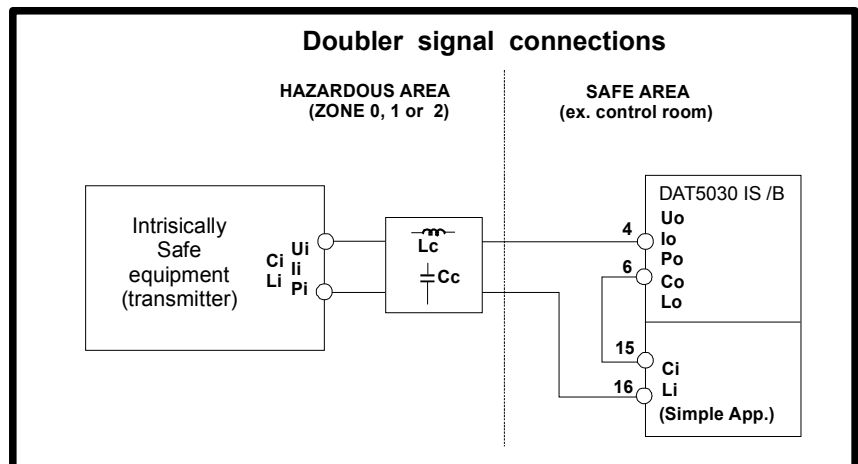
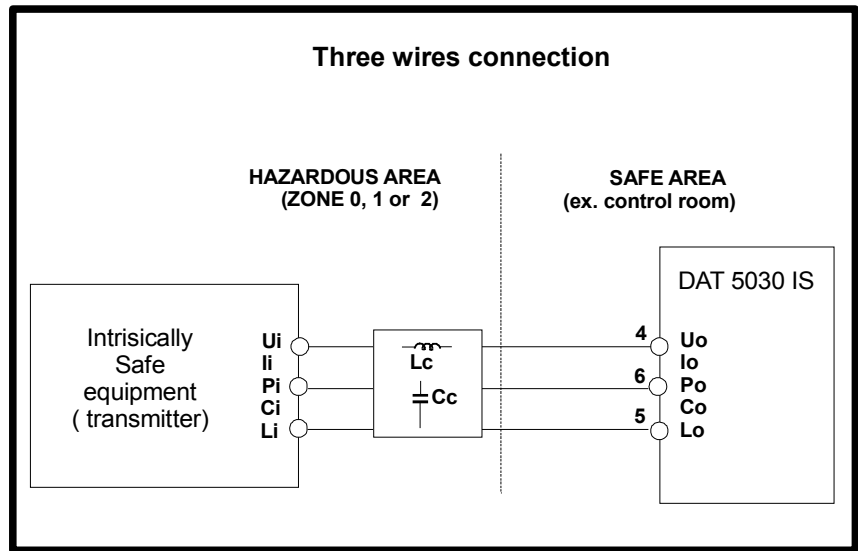
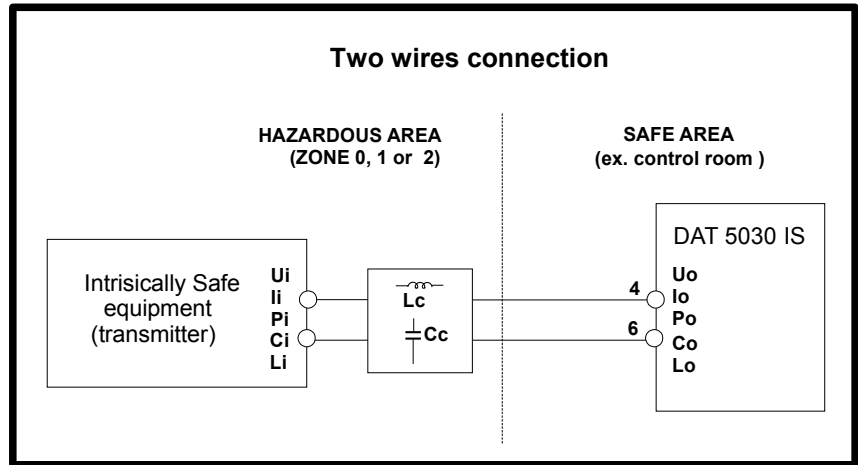
In a Intrinsically Safe system it is necessary to verify that the maximum energy available in the circuit will be lower than the ignition value of the explosive mixture. It occurs to verify specifically that:

- The intrinsically safe equipments and the associated apparatus must be qualified for the employ in the hazardous zone which them have been connected (category, type of gas, etc..).

- The values  $U_i$ ,  $I_i$  and  $P_i$  of an equipment must be respectively equal o greater than the maximum values  $U_o$ ,  $I_o$  and  $P_o$  of equipments which it has been connected.

- The sum of equipments equivalent capacity ( $C_i$ ) and connecting cable capacity ( $C_c$ ) must be lower than the admitted capacity ( $C_o$ ) of the equipment which them have been connected.

- The sum of equipments equivalent inductance ( $L_i$ ) and connecting cable inductance ( $L_c$ ) must be lower than the admitted inductance ( $L_o$ ) of the equipment which them have been connected.



$U_i \geq U_o$	$\sum (C_i) + C_c \leq C_o$
$I_i \geq I_o$	$\sum (L_i) + L_c \leq L_o$
$P_i \geq P_o$	