

SELF-POWERED LOOP ISOLATOR

ATivS / ATiv2S

Advantages

- The **ATivS** solves common point problems which may appear on measure loops and also reduces the rejection of the disturbances induced on the cables.
- The **ATivS** isolates the sensors or transmitters from the process receivers (PLCs, recorders, etc.).
- The version with Hart transparency **ATivS-H** allows the user to communicate with the protocol HART through the isolator.
- The lightning protector version **ATivS-PF** limitates the residual voltage on the ATivS output following a lightning shock on the input.
The **ATivS-PF** allows more than 10 consecutive shocks of 5000A or more than 300 consecutive shocks of 500A without destruction or modification of The metrological features of the product.

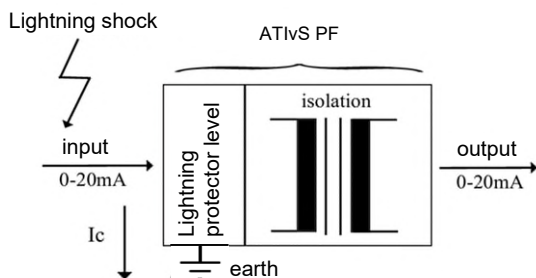


Functions

- 1 or 2 isolated measure channels:
ATivS: 1 channel
ATiv2S: 2 channels
- Isolation between input / output.
- Transfer ratio 1/1.
- High transmission accuracy.
- High load impedance.
- Powered by the input signal.
- Reduced dimensions.
- Conform with the lightning protection standard. CEI 61643-21 (version ATivS-PF)

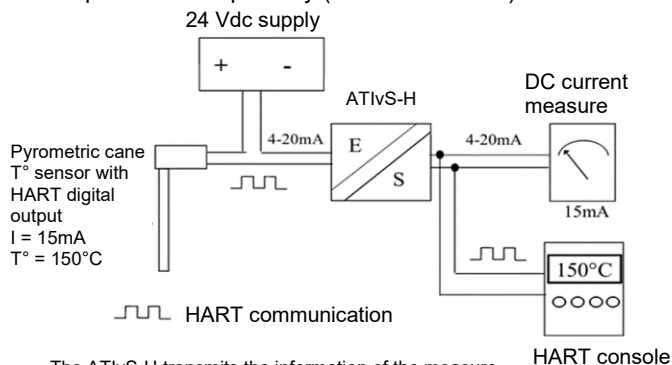
Applications

- Isolation of current loops
- Isolation of measure transmitters from the PLC cards.
- Isolation of 4-20 mA signals from thermocouples, where the isolation may become defective when the temperature is high.
- Protection of the elements connected on the isolator output in case of lightning shock on the current loop (version **ATivS-PF**):



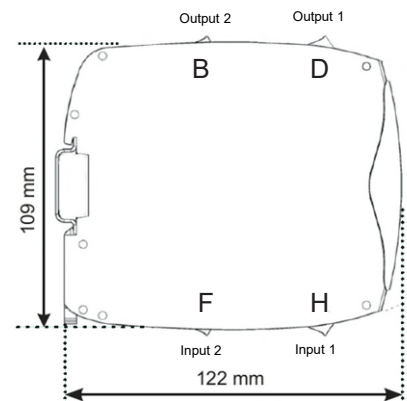
Ic: lightning shock current induced on the input.
N: Number of shocks admissible by the lightning protector level, without destruction.
Ic = 5000 A N > 10
Ic = 500 A N > 300

- HART protocol transparency (version **ATivS-H**):



The ATivS-H transmits the information of the measure in the form of a DC current + the HART digital sequence with a galvanic isolation of 2 kV.

Dimensions



Protection: housing / terminals: IP 20
Removable terminal blocks for screwed connectings (2.5 mm², flexible or rigid)
Weight: 240g (with packaging)
Self-extinguishing case of black UL 94VO PA66.
Mounting in cabinet : latching on symmetrical DIN rail.

Dimensions: 22.6 x 109 x 122 mm

Operating T°: -20° to 60°C

Storage T°: -20 to 70°C

Isolation: 2.5 kV, 50 Hz 1 mn (2 kV for the ATivS-H)

Installation: Pollution degree 2 / Voltage surge II

♦ **CE** marking

♦ Compliance with standards:

Directive LV 2014/35/UE EN 61010-1

Directive EMC 2014/30/UE EN 61326-1

Directive ROHS 2011/65/UE

Technical features at 23°C

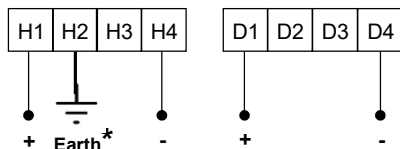
		ATivS / ATiv2S	ATivS-H / ATiv2S-H	ATivS-PF / ATiv2S-PF
INPUT	Current	0..4..20..50 mA	0..4..20..50 mA	0..4..20..50 mA
	Internal line drop at 20 mA	$\leq 1.6 \text{ V}$	$\leq 1.8 \text{ V}$	$\leq 2.2 \text{ V}$
OUTPUT	Load loss	$1 \times L_r + 1.6 \text{ V}$	$1 \times L_r + 1.8 \text{ V}$	$1 \times L_r + 2.2 \text{ V}$
	Max. voltage drop (output loop open)	$U_e = 16 \text{ VDC}$	$U_e = 16 \text{ VDC}$	$U_e = 16 \text{ VDC}$
ALIM	Impedance in Ω at 20 mA	$L_r + 80 \Omega$	$L_r + 90 \Omega$	$L_r + 110 \Omega$
GENERAL	Current	0..4..20..50 mA	0..4..20..50 mA	0..4..20..50 mA
	Max. load (L_r in Ω) admissible at 20 mA	700 Ω	700 Ω	700 Ω
LIGHTNING PROTECTOR	Supply	Self powered by the input loop	Self-powered by the input loop	Self-powered by the input loop
GENERAL	Nominal response time (0 to 90%) :			
	For load $R_c = 20 \Omega$ $R_c = 100 \Omega$ L_r influence $100 \leq R_c \leq 700 \Omega$	0.3 ms 1 ms 0.7 ms / 100 Ω	0.3 ms 1 ms 0.7 ms / 100 Ω	0.3 ms 1 ms 0.7 ms / 100 Ω
GENERAL	Accuracy at nominal conditions:			
	Class Temperature influence Load resistance influence	0.15% at $L_r = 100 \Omega$ $\pm 0.001\% / ^\circ\text{C}$ $\pm 0.05\% / 100 \Omega$ if $L_r \leq 500 \Omega$ $\pm 0.1\% / 50 \Omega$ if $L_r \geq 500 \Omega$	0.15% at $L_r = 100 \Omega$ $\pm 0.001\% / ^\circ\text{C}$ $\pm 0.05\% / 100 \Omega$ if $L_r \leq 500 \Omega$ $\pm 0.1\% / 50 \Omega$ if $L_r \geq 500 \Omega$	0.15% at $L_r = 100 \Omega$ $\pm 0.001\% / ^\circ\text{C}$ $\pm 0.05\% / 100 \Omega$ if $L_r \leq 500 \Omega$ $\pm 0.1\% / 50 \Omega$ if $L_r \geq 500 \Omega$
LIGHTNING PROTECTOR	Others:			
	Conversion ratio Isolation input / output and between channels Condense free dampness	1 / 1 2.5 kV 50Hz 1 mn 85%	1 / 1 2 kV 50Hz 1 mn 85%	1 / 1 2.5 kV 50Hz 1 mn 85%
LIGHTNING PROTECTOR	Test standard: IEC test class:			IEC 61 643-21 : 2001 C1 C2 C3 D1
	Discharge current (8/20 μs) nominal Maximum Maximum service voltage: Nominal current at 55°C: Limitation of the output voltage for 1 kV/ μs : In differential mode: In common mode:			$I_n = 5 \text{ kA}$ $I_{max} = 10 \text{ kA}$ $U_c = 20 \text{ V DC}$ $I_n = 50 \text{ mA}$ $U_p = 21 \text{ V}$ $U_p = 650 \text{ V}$

Connectings

ATivS / ATivS-H / ATivS-PF

Input

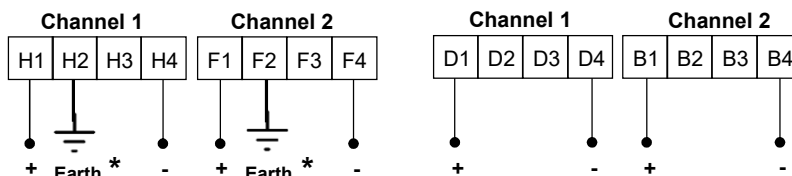
Outputs



ATiv2S / ATiv2S-H / ATiv2S-PF

Inputs

Outputs



* Only for the lightning protector version:

IMPORTANT: For the versions ATivS-PF and ATiv2S-PF, the earth must be connected to the terminals H2 and F2 of the product to guarantee the efficiency of the lightning protector function.



e-mail : info@ardetem.com
www.ardetem-sfere.com

Route de Brindas
Parc d'activité d'Arbora N°2
69510 SOUCIEU EN JARREST
- FRANCE -

Tél. : 33 (0)4 72 31 31 30
Fax. : 33 (0)4 72 31 31 31

Your representative