



ISN T4A IMPEDANCE STABILIZATION NETWORK (ISN) FOR UNSHIELDED BALANCED PAIRS



Impedance stabilization networks (ISN) are coupling/decoupling networks according to CISPR 22 (EN 55022) for measurement of conducted common mode disturbances of information technology equipment (ITE). The ISN is placed between the equipment under test (EUT) and the auxiliary equipment (AE) or load which is necessary for the operation of the EUT. The ISN establishes the common mode termination impedance seen by the telecommunication port during measurement.

The ISN T4A is designed for measurements on one or two unshielded balanced pairs shown at D.2 in CISPR 22, Ed.5.2, 2006 and EN 55022 Sept. 2006 (IEC/CISPR 22: 2005 modified). The ISN T4A consists of one basic network (ISN T400A) with D-Sub-25- connectors and special adapter sets. A set of adapters consists of LCL adapters to realize the longitudinal conversion loss (LCL)- requirements for the EUT-side in relation to the used cable category (cat.3, cat.5) and a connection adapter for the AE-side.



- For use with one or two unshielded balanced pairs
- CISPR 22, Ed.5.2, 2006 and EN 55022 Sept. 2006 (IEC/CISPR 22: 2005 modified) for Cat.3 and Cat.5
- Changeable pin-arrangements with RJ11 and RJ45
- Can be used as CDN for IEC 61000-4-6 immunity tests

Technical specifications

Frequency range:	150 kHz to 80 MHz
Line parameters:	1 or 2 pairs
Power rating (EUT- and AE Port)	
AC max. voltage (line to ground):	63 V
DC max. voltage (line to ground):	100 V
Current max. :	400 mA (line), 800 mA (pair)
Test voltage:	200 VDC, 2 sec
Common mode impedance (EUT Port)	
150 kHz to 30 MHz:	150 Ω ±20 Ω
30 MHz to 80 MHz:	150 Ω ±40 Ω
Phase angle (EUT Port) 150 kHz to 30 MHz:	0° ±20°
Coupling path (In/Out-port/EUT)	
Connection:	BNC 50 Ω
RF voltage:	<15 V
Frequency range:	150 kHz to 80 MHz
Voltage division factor (RF input to EUT port)	
150 kHz to 30 MHz:	9.5 dB ±1 dB
30 MHz to 80 MHz:	9.5 dB ±2 dB
Transmission bandwidth (wanted signal) EUT/AE B3 dB: *	> 100 MHz sin.
LCL (EUT) *)	
Cat. 3 150 kHz to 30 MHz (corner frequency 2 MHz):	55 dB to 39.3 dB ±3 dB
Cat. 5 150 kHz to 2 MHz:	65 dB ±3 dB
Cat. 5 2 MHz to 30 MHz:	65 dB to 49.3 dB +4.5/-3 dB
Decoupling of common mode disturbances (EUT / AE)	
150 kHz to 1.5 MHz:	≥35 dB to ≥55 dB
1.5 MHz to 30 MHz:	≥55 dB
Crosstalk (PSELFEXT) (EUT / AE) 1 MHz to 100 MHz:	≥61 dB to ≥21 dB
*) all balanced parameters are in relation to a symmetrical load of 100 Ω	

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Basic network ISN T400A with connected LCL cat.5 adapter with pin-arrangement T444 and adapter for arranging AE port (part of ISN T4A and ISN T444A)

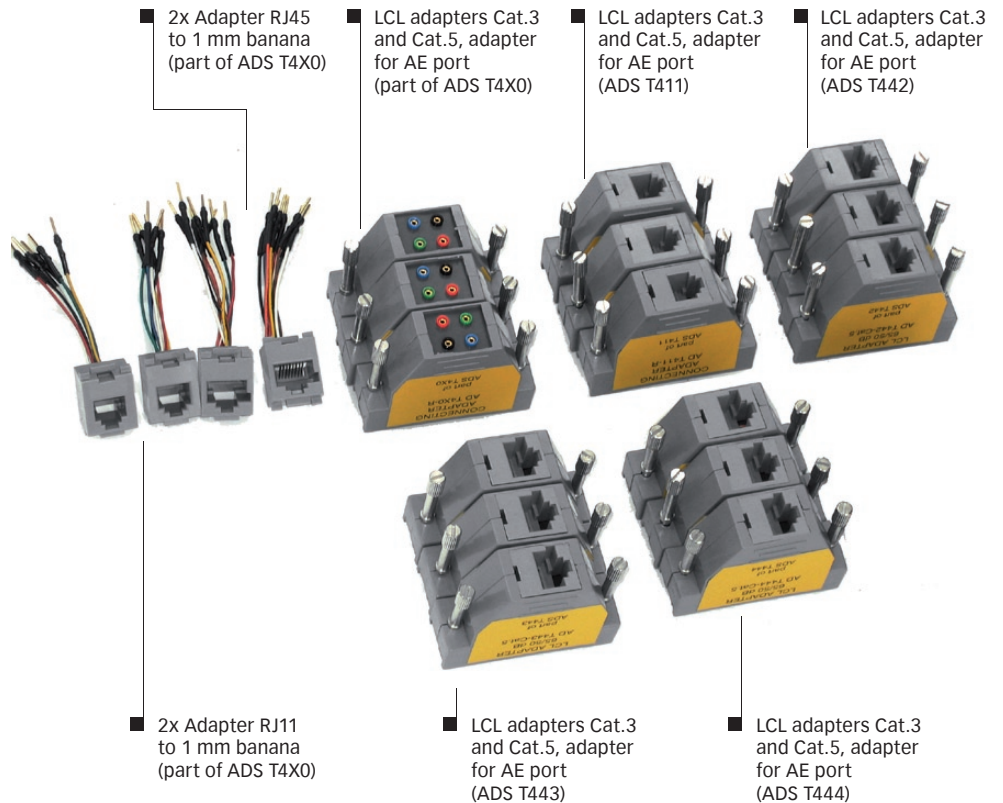
Mechanical specifications

Size (W x H x D) (basic network):	105 x 65 x 110 mm ³
(basic network with adapters):	105 x 65 x 190 mm ³
Weight:	approx. 550 g

Application

Pin-arrangement

	Connector	a1	b1	a2	b2
ADS T411 German Telecom, US standard	RJ11-6	5	2	4	3
ADS T442 ISDN basic rate access, (S0)	RJ45	4	5	3	6
ADS T443 ISDN primary rate access (2Mbps)	RJ45	4	5	1	2
ADS T444 10BaseT, 100BaseT	RJ45	1	2	3	6
ADS T4X0 Changeable adaptor wiring	RJ11-6, RJ45 and 1 mm				



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Additional application

The described ISN T4A is appropriate for immunity tests of IEC 61000-4-6. Optional available are the parts for the level setting (test set-up calibration) CAL U100 (150 Ω /50 Ω adapter), SAR T800 (common mode adapter for RJ45), SAR T600 (common mode adapter for RJ11), SAR T801 (common mode adapter for Sub-D) and TRA U150 (150 Ω termination).

Delivery information

Part number	Description
248707	ISN T4A ISN for one or two unshielded balanced pairs with adapter sets ADS T411, 442, 443, 444 and 4X0 in suitcase, cable Cat.3 and 5
97-248707	ISN T4A-TC Traceable calibration (ISO17025), order only with ISN T4A
248706	ISN T4X0A (changeable adaptor wiring, RJ11 and RJ45) ISN with adapter set ADS T4X0 in suitcase, cable Cat.3 and 5
248704	ISN T444A (10BaseT, 100BaseT, RJ45) ISN with adapter set ADS T444 in suitcase, cable Cat.3 and 5
248703	ISN T443A (ISDN primary rate access, RJ45) ISN with adapter set ADS T443 in suitcase, cable Cat.3 and 5
248702	ISN T442A (ISDN basic rate access, S0, RJ45) ISN with adapter set ADS T442 in suitcase, cable Cat.3 and 5
248701	ISN T411A (German Telecom, US standard, RJ11) ISN with adapter set ADS T411 in suitcase, cable Cat.3 and 5
97-248701	ISN T4xxA-TC Traceable calibration (ISO17025), order only with ISN T4xxA
242047	ADS T4X0 Adapter set ADS T4X0, order only with ISN T4xxA
248580	CAS ISN Calibration kit for ISN T8 and ISN T4A, measuring parameters: CM impedance, phase angle, voltage division factor and LCL, traceable calibration and certificate included
239901	CAL U100 Universal calibration unit (150 Ω /50 Ω adapter)
242438	SAR T600 Calibration adapter part for ISNs with RJ11 connector
242439	SAR T800 Calibration adapter part for ISNs with RJ45 connector
242430	SAR T801 Common mode adapter for Sub-D
239903	TRA U150 Universal termination resistor 150 Ω AE side