CODICE CAF: D344640



CENTROTECNICA SRL

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Rev. 0

Pag. 1 di 117

Masate, 4 Febbraio 2016

COPERTINA

elaborato per S.P.I.I. S.p.A.

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inizio prove 21 Settembre 2015

in presenza di Ing Francesco COLOMBO SPII

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Ing. Barbara GABELLA approvato da

Test eseguito a: Centrotecnica S.r.l.

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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0

Pag. 2 di 117

1. INDICE

1.	INDIC	E	2
2.	DESC	RIZIONE DELL'HARDWARE	3
2	.1 CA	AMPIONI	3
2	.2 FI)	XTURE	3
3.	SCOP	O DELLA SESSIONE DI PROVE	4
3	.1 SF	PECIFICHE	4
	3.1.1	PROFILO DEI TEST	5
3	.2 SE	EQUENZA DEI TEST	8
4.	DESC	RIZIONE DELLE PROVE	9
4	.1 PF	REPARAZIONE DELL'HARDWARE	9
4	.2 PF	ROCEDURE DI MONTAGGIO DEGLI ACCELEROMETRI	9
-		RATEGIE GENERALI DI CONTROLLO E MISURA. CARATTERIZZAZ T POINT (T.P.).	IONE 9
4	.4 FC	OTOGRAFIE	10
	4.4.1	HARDWARE SETUP SULL'ASSE Z	10
	4.4.2	HARDWARE SETUP SULL'ASSE Y	11
	4.4.3	HARDWARE SETUP SULL'ASSE X	12
	4.4.4	POLVERE SUL CAMPIONE A FINE TEST	13
5.	TEST	HISTORY	14
6.	CONC	CLUSIONI	17
7.	ATTRI	EZZATURE UTILIZZATE	17

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Documento: VR1527001SPMA-ITA.doc

EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 3 di 117

2. DESCRIZIONE DELL'HARDWARE

2.1 CAMPIONI

Gli oggetti da sottoporre alle prove sono descritti nel seguito:

EARTHING SWITCH E402A CAF EUT:

TIPO: D344640

S/N: A1506999 D344639 DWG N.:

Codice Centrotecnica: P21672

Dimensioni dell'oggetto:

Lunghezza: 381 mm Larghezza: 300 mm Altezza: 430 mm Massa: 59 kg

2.2 FIXTURE

Per interfacciare gli oggetti con l'armatura dello shaker e con la slip table durante i test, è stata utilizzata la seguente fixture:

Fixture n. 69 Fixture n. 157

Piastra Tipo: Expander Tipo: Materiale: Alluminio Materiale:

Magnesio Dimensioni:

Dimensioni: Lunghezza:240 mm Lunghezza:750 mm Larghezza: 335 mm Larghezza: 750 mm Altezza: 20 mm Altezza: 268 mm Massa: ka Massa: 73 kg Montaggio: viti M8

M8 Montaggio: 29 viti



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 4 di 117

3. SCOPO DELLA SESSIONE DI PROVE

Questa prova viene effettuata per sottoporre il campione alle specifiche descritte nel seguito, in accordo con il programma del Cliente.

3.1 SPECIFICHE

NORMA DI RIFERIMENTO	PROFILI
	Initial and final measure ⁽²⁾ Iм/Fм
CEI EN 61373 2010 ED.2 CAT.1 – CLASS B ⁽¹⁾ (3)	Random endurance E.
	Shock test SH.

In accordo con la richiesta del cliente il test sarà eseguito applicando i livelli più alti di vibrazioni e shock descritti in IEC 61373 for Category 1 – Class B, profile di vibrazione vertical e profilo di shock longitudinale

⁽²⁾ In accordo con la norma di riferimento le initial and final measures saranno eseguite applicando il profilo "random endurance"

⁽³⁾ In accordo con la richiesta del cliente random functional test non sarà eseguito



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Documento: VR1527001SPMA-ITA.doc

EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Pag. 5 di 117 Rev. 0

3.1.1 PROFILO DEI TEST

E) RANDOM ENDURANCE VIBRATION - PROFILO VERTICALE

Profile Parameters

Profile Acceleration RMS: 5.581423 m/s² Profile Velocity RMS: 0.063741 m/s Profile Displacement RMS: 1.279999 mm

16.744270 m/s² Profile Expected Acceleration (Peak): Profile Expected Velocity (Peak): 0.191224 m/s Profile Expected Displacement (Peak-Peak): 7.679991 mm-mm

RMS Limits: Calculated based on table High Abort: 7.883968 m/s² (3.00 dB) 6.633535 m/s² (1.50 dB) High Alarm: Profile: 5.581423 m/s²

Low Alarm: 4.696182 m/s2 (-1.50 dB) Low Abort: 3.951345 m/s² (-3.00 dB)

			Profile Table:			
Frequency	Acceleration	Slope	High Abort	High Alarm	Low Alarm	Low Abort
Hz	(m/s²)²/Hz	dB/Oct	dB	dB	dB	dB
5.0	0.964	0	3.00	1.50	-1.50	-3.00
20.0	0.964	-6	3.00	1.50	-1.50	-3.00
150.0	0.0173757		3.00	1.50	-1.50	-3.00

Schedule Parameters

0:0:30 at Level -12.0 dB 0:0:20 at Level -9.0 dB 0:0:15 at Level -6.0 dB 0:0:15 at Level -3.0 dB 05: 0:0 at Level 0.0 dB Save All Panes Auto-Save Signals

Quick Report



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Documento: VR1527001SPMA-ITA.doc

Rev. 0 Pag. 6 di 117

Yes

Control Parameters

Test Parameters

Number of Spectral Lines:200Max. Test Frequency:150.00 HzMeasurement Strategy:Single Channel

 Line Abort Ratio:
 0.10

 Line Abort Number:
 20

 Averaging Number:
 77

 Drive Limit:
 2.00 Volts

 Sigma Clip Number:
 3.00

 Data Points/Frame:
 512

Frame Time: 1.365333 Seconds

Sampling Rate: 375 Hz DOF: 154

dT: 0.002667 Seconds dF: 0.732422 Hz

Pre-test Parameters

Method of Acquiring the Loop Frequency Response Function:

Measure During Pre-Test

Initial Peak Drive:

Ramp-Up Rate:

Response Level Goal:

Maximum Peak Drive:

0.008000 Volts
Fast
-12.00 dB
0.700000 Volts

Preferences Parameters

Abort Rate 20 (dB/Second)
Level Log Change Rate 20 (dB/Second)
On-Line Level Change 10 (%)
Resume from Abort Active

Enable float profile display No

Automatic disable the Low-abort checking for Control Signal during notching



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Rev. 0

Pag. 7 di 117

SH) SHOCK TEST - PROFILO LONGITUDINALE

Profile Parameters

Pulse Type: Half Sine
Amplitude: 50.00 m/s²
Pulse Width: 30.00 ms

Main Pulse Tails:IEC 60068-2-27 StandardCompensation Template:Displacement OptimumAbort Setting:IEC 60068-2-27 Standard

Schedule Parameters

5 Pulses at Level -12.00 dB 3 Pulses at Level -9.00 dB 2 Pulses at Level -6.00 dB 1 Pulses at Level -3.00 dB 3 Pulses at Level 0.00 dB Auto-Save Signals Save All Panes

Save All Pa Quick Report

Control Parameters

Test Parameters

Block Size: Auto
Averaging Number: 4
Drive Limit: 2.00 Volts
Pulse Interval: 5.000 seconds

Point Abort Ratio: 0.10

Low-Pass Filter Type: Apply filter using user-defined cutoff frequency

Filter Cutoff Frequency: 300.000000Hz

Data Points/Frame: 2048

Frame Time: 0.682667 Seconds

Sampling Rate: 3000 Hz

dT: 0.000333333 Seconds

Maximum Analysis Frequency: 1318.36 Hz SRS Analysis: Disable

Pre-test Parameters

Method of Acquiring the Loop Frequency Response Function: Measure during close-loop pre-test

Initial Peak Drive: 0.008000 Volts
Ramp-Up Rate: Fast
Response Level Goal: -20.00 dB

Maximum Peak Drive: 0.700000 Volts

Preferences Parameters

Abort Rate 20 (dB/Second)
Level Log Change Rate 20 (dB/Second)
On-Line Level Change 10 (%)
Resume from Abort Active



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Pag. 8 di 117 Rev. 0

Partita I.V.A. / Cod. Fiscale Documento: VR1527001SPMA-ITA.doc

3.2 SEQUENZA DEI TEST

ASSE*	INITIAL MEASURE	ENDURANCE E	SHOCK TEST SH	FINAL MEASURE FM
	X			
		Х		
Z			UP	
			DOWN	
				X
	X			
		X		
Y			UP	
			DOWN	
				X
	X			
		X		
X			UP	
			DOWN	
				X

^{*} Vedi paragrafo 4.3 per la corrispondenza degli assi.



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Rev. 0 | Pag. 9 di 117

4. DESCRIZIONE DELLE PROVE

4.1 PREPARAZIONE DELL'HARDWARE

Il campione è stato montato sulla piastra n.157 con 6 viti M8. Per eseguire i test sull'asse Z, la piastra con il campione è stata montata sull'expander n.69, il quale è stato precedentemente montato sull'armatura dello shaker V850; mentre per eseguire i test sugli assi X e Y la piastra con il campione è stata montata direttamente sulla slip table dello shaker V850.

Condizioni ambientali misurate all'inizio del test::

Temperatura: 24.2 °C +/- 1°C Umidità relativa : 42.7 %+/- 5%

4.2 PROCEDURE DI MONTAGGIO DEGLI ACCELEROMETRI

Gli accelerometri sono stati fissati mediante colla cianoacrilica o mediante appositi bolli biadesivi.

La procedura di montaggio degli accelerometri è in accordo con la normativa UNI ISO 5348 "Montaggio meccanico degli accelerometri".

4.3 STRATEGIE GENERALI DI CONTROLLO E MISURA. CARATTERIZZAZIONE DEI TEST POINT (T.P.).

Durante i test sono stati impiegati un accelerometro monoassiale per mantenere il controllo dei livelli di vibrazione e due accelerometri monoassiali per acquisire i livelli di vibrazione dell' unità.

La seguente tabella, insieme alle fotografie del paragrafo4.4, chiarisce la disposizione del Test Point per i test effettuati.

Input	Туре	Analysis	mv/(EU)	Weighting	Coupling	I.D.	Label
1	Control	Filter	9.5800mv/(m/s²)	1.0000	ICP	TP1-Z-CTRL-FIXTURE BASE	CPA 74
ľ	Control	FIILEI	9.50001110/(11/5)	1.0000	ICF	TP4-XY-CTRL-FIXTURE / SLIP TABLE	OFA 14
2	Monitor	Filter	1.0100mv/(m/s²)	1.0000	ICP	TP2-Z/Y/X-MEASURE-EUT KEY BLOCK	CPA 98
2	WOTILOI	FIILEI	1.01001110/(11//5-)	1.0000	ICF	SIDE	CPA 90
3	Monitor	Filter	1.0100mv/(m/s ²)	1.0000	ICP	TP3-Z/Y/X-MEASURE-EUT BACK SIDE	CPA 120

^{*} Si veda il seguente paragrafo 7 per la corrispondenza tra prove svolte e numerazione dei run.



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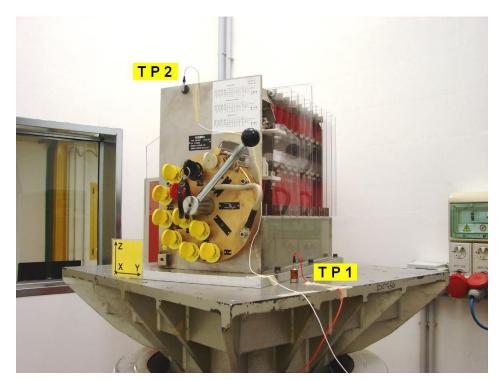
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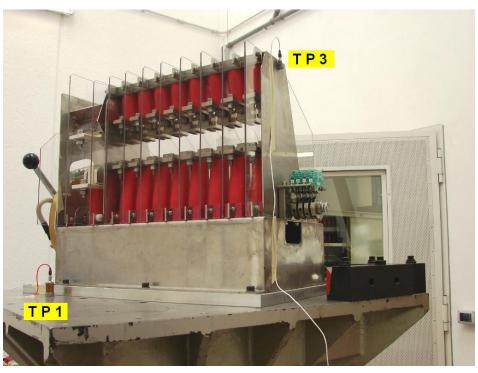
Rev. 0

Pag. 10 di 117

4.4 FOTOGRAFIE

4.4.1 HARDWARE SETUP SULL'ASSE Z







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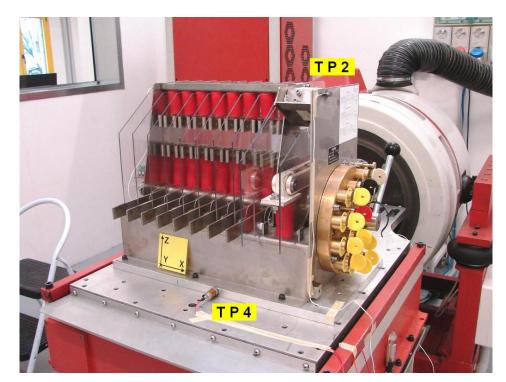
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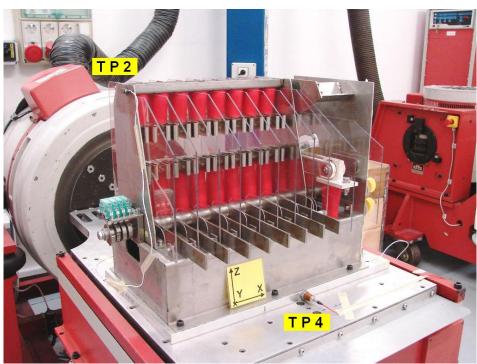
Rev. 0

Pag. 11 di 117

4.4.2 HARDWARE SETUP SULL'ASSE Y

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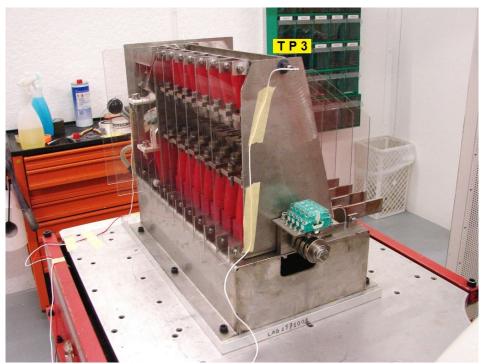
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Rev. 0 Pag. 12 di 117

4.4.3 HARDWARE SETUP SULL'ASSE X







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Pag. 13 di 117 Rev. 0

4.4.4 POLVERE SUL CAMPIONE A FINE TEST





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Rev. 0

Pag. 14 di 117

5. TEST HISTORY

DATA	ORA	RUN	PROFILO TEST	NOTE
21 Set '15	09.30			Arrivo del cliente
	09.45			Montaggio dell'expander sull'armatura dello shaker
	10.02			Montaggio della piastra n.157 sull'expander
	10.27			Montaggio del campione sulla piastra
	11.01			Setup degli accelerometri in TP1, TP2 e TP3
	11.16			Programmazione del controllore
	11.18	01	lM	Inizio dell'initial measurements sull'asse verticale (Z)
	11.23			Analisi dei grafici
	11.25			Programmazione del controllore
	11.28	02	E	Inizio della random endurance sull'asse verticale (Z)
	16.31			Controllo visivo del campione
	16.47			Programmazione del controllore
	16.49	03	SH	Inizio del test di shock sull'asse verticale (Z) – Direzione UP – Profilo dell'asse longitudinale
	16.53	04	SH	Inizio del test di shock sull'asse verticale (Z) – Direzione DOWN – Profilo dell'asse longitudinale
	16.55			Controllo visivo del campione
	16.56			Programmazione del controllore
	16.57	05	Fм	Inizio del final measurements sull'asse verticale (Z)
	17.03			Analisi dei grafici
	17.05			Controllo visivo e rimozione del campione
	17.18			Rimozione della fixture
	17.30			Fine della giornata
22 Set '15	09.00			Rimozione dell'expander
	09.10			Rotazione dello shaker
	09.18			Montaggio della piastra n.157 sulla slip table
	09.21			Montaggio del campione sulla piastra
	09.30			Setup degli accelerometri in TP4, TP2 e TP3



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Rev. 0

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Pag. 15 di 117

DATA	ORA	RUN	PROFILO TEST	NOTE
22 Set '15	09.38			Programmazione del controllore
	09.40	06	lM	Inizio dell'initial measurements sull'asse trasversale (Y) – Profilo endurance sull'asse verticale
	09.45			Analisi dei grafici
	09.47			Programmazione del controllore
	09.48	07	Е	Inizio della random endurance sull'asse trasversale (Y) – Profilo endurance sull'asse verticale
	14.52			Controllo visivo del campione
	15.01			Programmazione del controllore
	15.02	08	SH	Inizio del test di shock sull'asse trasversale (Y) – Direzione UP – Profilo dell'asse longitudinale
	Inizio del test di sh 15.06 09 SH – Direzione DO		Inizio del test di shock sull'asse trasversale (Y) – Direzione DOWN – Profilo dell'asse longitudinale	
	15.07			Controllo visivo del campione
	15.09			Programmazione del controllore
	15.10	10	Fм	Inizio del final measurements sull'asse trasversale (Y) – Profilo endurance sull'asse verticale
	15.15			Analisi dei grafici
	15.18			Controllo visivo e rimozione del campione
	15.42			Rotazione della fixture sulla slip table
	16.01			Montaggio del campione sulla piastra
	16.32			Setup degli accelerometri in TP4, TP2 e TP3
	17.00			Fine della giornata
23 Set '15	09.00			Programmazione del controllore
	09.09	11	lM	Inizio dell'initial measurements sull'asse longitudinale (X) – Profilo endurance sull'asse verticale
	09.13			Analisi dei grafici
	09.15			Programmazione del controllore
	09.16	12	E	Inizio della random endurance sull'asse longitudinale (X) – Profilo endurance sull'asse verticale
	14.20			Controllo visivo del campione



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Partita I.V.A. / Cod. Fiscale Documento: VR1527001SPMA-ITA.doc

Rev. 0

Pag. 16 di 117

DATA	ORA	RUN	PROFILO TEST	NOTE
23 Set '15	14.42			Programmazione del controllore
	14.43	13	SH	Inizio del test di shock sull'asse trasversale (Y) – Direzione UP – Profilo dell'asse longitudinale
	14.45	14	SH	Inizio del test di shock sull'asse trasversale (Y) – Direzione DOWN – Profilo dell'asse longitudinale
	14.47			Controllo visivo del campione
	14.48			Programmazione del controllore
	14.49	15	Fм	Inizio del final measurements sull'asse trasversale (Y) – Profilo endurance sull'asse verticale
	14.54			Analisi dei grafici
	15.12			Controllo visivo e rimozione del campione dalla fixture: polvere sulla base del campione (vedi par. 4.4.4)
	15.34			Rimozione delle fixture
	16.00			Fine dei test



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Pag. 17 di 117 Rev. 0

6. CONCLUSIONI

Dopo essere stati sottoposti ai test ambientali come descritto in questo documento, da una ispezione visiva non sono stati evidenziati danneggiamenti meccanici sul campione

EUT: EARTHING SWITCH E402A CAF

TIPO: D344640

S/N: A1506999 D344639 DWG N.:

7. ATTREZZATURE UTILIZZATE

Shaker

LDS V850-440T air cooled / LDS SPA 56/32 K v3 V850

Strumentazione di controllo

Dactron LaserUSB Shaker Controller S/N 6857009 – Ver. 8.1

ULTIMA CALIBRAZIONE 14/04/2015 DATA SCADENZA 04/2016

CALIBRATO DA Belotti Sistemi s.a.s.

CERTIFICATO N. 2015-0259

Chiave dinamometria

BETA MOD. 606/6 S/N 7603008

ULTIMA CALIBRAZIONE : 20/03/2013 DATA SCADENZA 03/2016 CALIBRATO DA STI Lat 172 CERTIFICATO N. C0033/13



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Pag. 18 di 117 Rev. 0

Accelerometri

ETICHETTA	COSTRUTTORE	MODELLO	NUMERO SERIE	SENSIBILITÀ	MASSA g	DATA CALIB.	CERTIF. NUMERO
74	WILCOXON	726T	5636	9.58 mV/(m/s ²)	34	12/01/20 15	29727
98	Bruel&Kjaer	4508 001	30289	1.01 mV/(m/s ²)	4.8	12/01/20 15	29725
120	BRUEL & KJAER	4508 001	30552	1.01 mV/(m/s ²)	4.8	23/09/20 14	28888

Tutti gli accelerometri sono calibrati da: CENTROTECNICA S.r.I. CENTRO LAT N. 111

Termoigrometro

PCE MOD. PCE-THB 40 S/N Q755479

ULTIMA CALIBRAZIONE: 30/10/2013 DATA SCADENZA 10/2016 CALIBRATO DA Camar RAPP. TARATURA N 13-RU-045



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Documento: VR1527001SPMA-ITA.doc

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RELAZIONE SU TEST MECCANICI
Elaborato per: SPII S.p.A.

Rev. 0 Pag. 19 di 117

Tolleranza sull'ampiezza di vibrazione

Le incertezze di misura definite in questo documento sono state determinate in accordo ai documenti ISO/IEC Guide 98 e EA-4/02.

Il calcolo è stato effettuato come incertezza estesa ottenuta moltiplicando l'incertezza standard per il fattore di copertura k=2 corrispondente ad un livello di confidenza di circa 95%.

L'incertezza calcolata per l'accelerazione è 10%.

Moti trasversali

I moti trasversali dello shaker sono stati misurati e sono in accordo con i requisiti di IEC 60068-2-6:2009-11 par 4.1.2.1, IEC 60068-2-64:2008 par 4.3 and IEC 60068-2-27:2008 di seguito riportati:

vibrazione sinusoidale – non superiore al 50% dell'ampiezza specificata fino a 500Hz e al 100% fino 2000 Hz

vibrazione random – non superiore a -3db rispetto al valore specificato fino a 500 Hz e a 0 db fino a 2000 Hz

valore rms non superiore al 50% del valore specificato

shock test - no superior al 30% del valore specificato

In caso di oggetti molto grandi i valori sopra indicati potrebbero dover essere verificati durante i test.



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F-mail info@ctecnica it

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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 20 di 117

ALLEGATI

TEST SULL'ASSE VERTICALE (Z)

- 1.1 INITIAL MEASUREMENTS PROFILO ENDURANCE VERTICALE
- 1.2 ENDURANCE TEST PROFILO VERTICALE
- 1.3 SHOCK TEST UP DIRECTION PROFILO LONGITUDINALE
- 1.4 SHOCK TEST DOWN DIRECTION PROFILO LONGITUDINALE
- 1.5 FINAL MEASUREMENTS PROFILO ENDURANCE VERTICALE

TEST SULL'ASSE TRASVERSALE (Y)

- 2.1 INITIAL MEASUREMENTS PROFILO ENDURANCE VERTICALE
- 2.2 ENDURANCE TEST PROFILO VERTICALE
- 2.3 SHOCK TEST UP DIRECTION PROFILO LONGITUDINALE
- 2.4 SHOCK TEST DOWN DIRECTION PROFILO LONGITUDINALE
- 2.5 FINAL MEASUREMENTS PROFILO ENDURANCE VERTICALE

TEST SULL'ASSE LONGITUDINALE (X)

- 3.1 INITIAL MEASUREMENTS PROFILO ENDURANCE VERTICALE
- 3.2 ENDURANCE TEST PROFILO VERTICALE
- 3.3 SHOCK TEST UP DIRECTION PROFILO LONGITUDINALE
- 3.4 SHOCK TEST DOWN DIRECTION PROFILO LONGITUDINALE
- 3.5 FINAL MEASUREMENTS PROFILO ENDURANCE VERTICALE



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Rev. 0

Pag. 21 di 117

ALLEGATO 1.1

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE VERTICALE (Z)

INITIAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE



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Run

Random

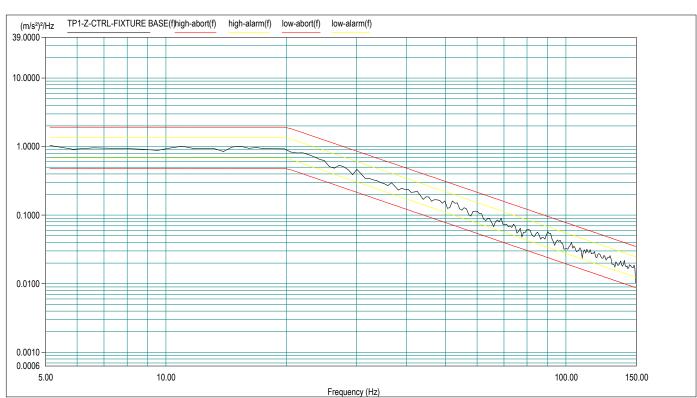
Pag. 22 di 117 Rev. 0

Test Type:

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z) Profile Name:

Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



0 dB Level:

Control RMS: 5.569189 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626909 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:27, lunedì, settembre 21, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

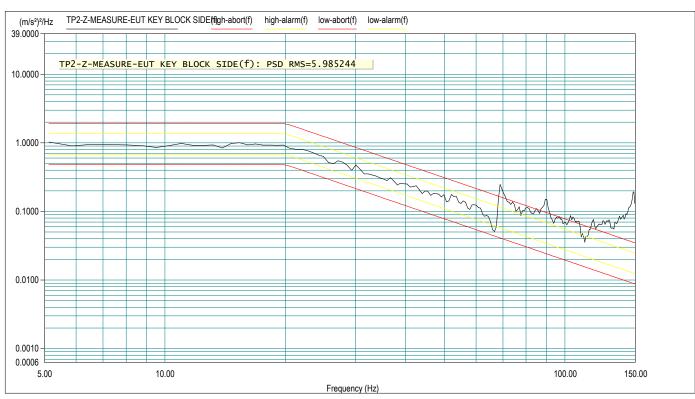
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Pag. 23 di 117 Rev. 0

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z) Profile Name: Test Type: Run Random

Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



0 dBLevel:

Control RMS: 5.569189 m/s² 1.365333 Seconds

00:02:00 Full Level Elapsed Time: 200 Frame Time: Lines:

Demand RMS: 5.626909 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:27, lunedì, settembre 21, 2015



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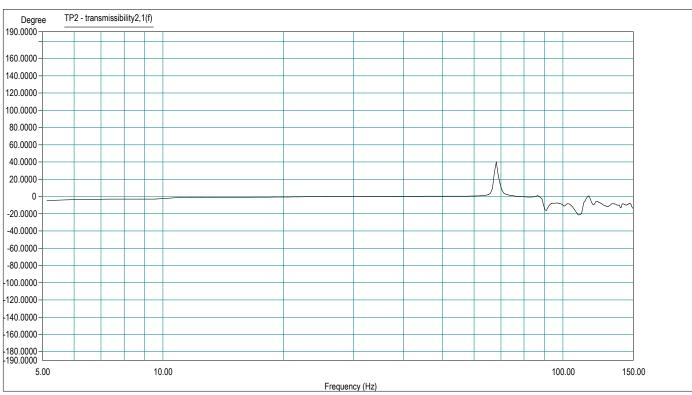
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 24 di 117

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

Profile Name: RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z) Test Type: Random Run

Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



Level: 0 dB

Control RMS: 5.569189 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626909 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:28, lunedì, settembre 21, 2015



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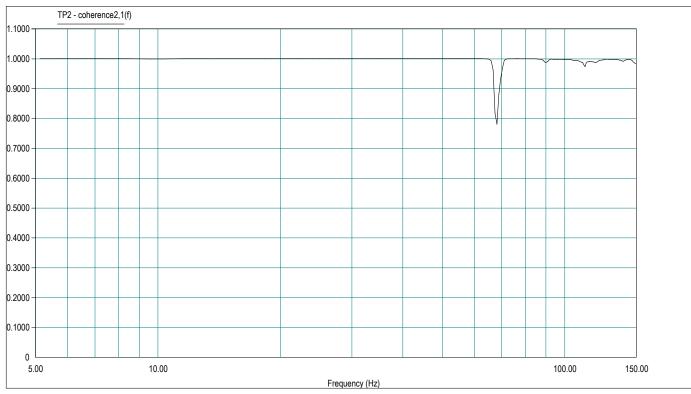
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Pag. 25 di 117 Rev. 0

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z) Profile Name: Test Type: Run Random

.\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



Level: 0 dB

5.569189 m/s² Full Level Elapsed Time: 00:02:00 200 Frame Time: Control RMS: Lines:

1.365333 Seconds Demand RMS: 5.626909 m/s² 00:00:00 DOF: 154 dF:

Remaining Time:

0.732422 Hz

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:28, lunedì, settembre 21, 2015



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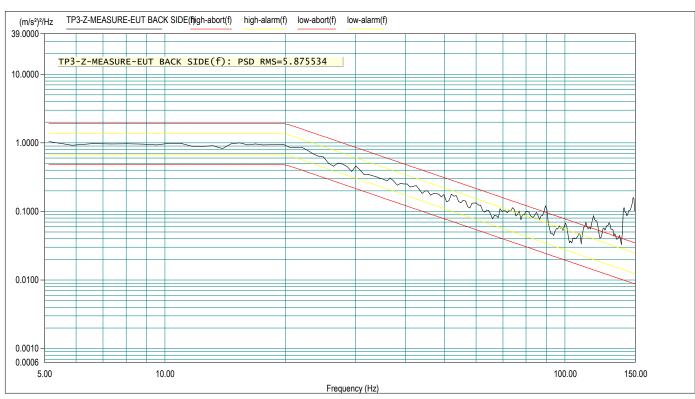
Documento: VR1527001SPMA-ITA.doc

Pag. 26 di 117 Rev. 0

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z) Profile Name: Test Type: Run Random

Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



Level: 0 dB

00:02:00 5.569189 m/s² Full Level Elapsed Time: 200 Control RMS: Lines: 1.365333 Seconds

Demand RMS: 5.626909 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:28, lunedì, settembre 21, 2015

Frame Time:



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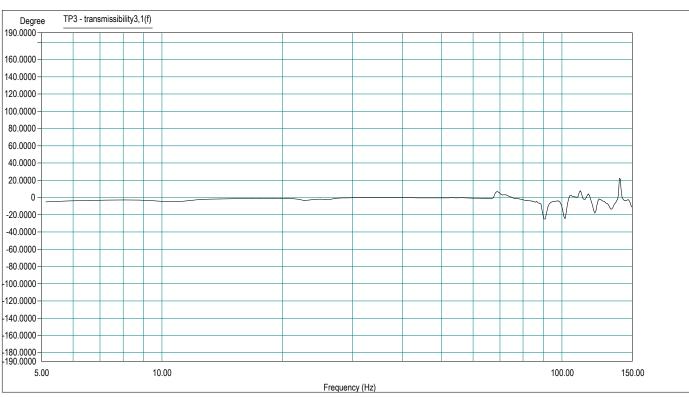
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Pag. 27 di 117 Rev. 0

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z) Profile Name: Test Type: Run Random

Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



Level: 0 dB

Control RMS: 1.365333 Seconds

0.732422 Hz

5.569189 m/s²

Full Level Elapsed Time:

00:02:00

Lines:

200

Frame Time:

Demand RMS:

5.626909 m/s²

Remaining Time:

00:00:00

DOF:

dF:

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:29, lunedì, settembre 21, 2015

154



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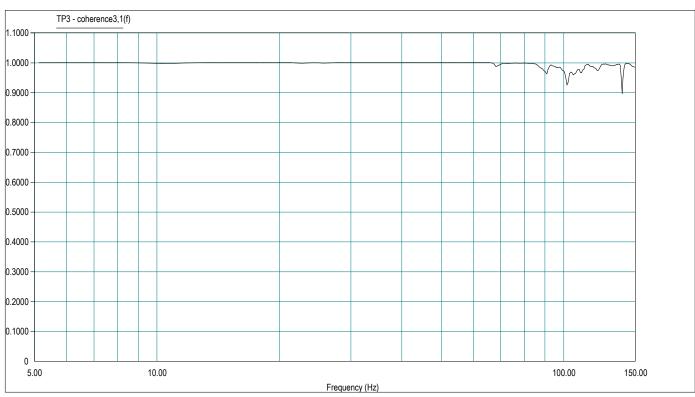
Documento: VR1527001SPMA-ITA.doc

Rev. 0 Pag. 28 di 117

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

Profile Name: RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z) Test Type: Random Run

Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



Level: 0 dB

Demand RMS:

Control RMS: 5.569189 m/s²

1.365333 Seconds

5.626909 m/s²

Remaining Time:

Full Level Elapsed Time:

00:02:00

Lines:

200 Frame Time:

00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:29, lunedì, settembre 21, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 29 di 117

<u>ALLEGATO 1.2</u>

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE VERTICALE (Z)

ENDURANCE TEST - PROFILO

VERTICALE

(7 PLOTS)



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Documento: VR1527001SPMA-ITA.doc

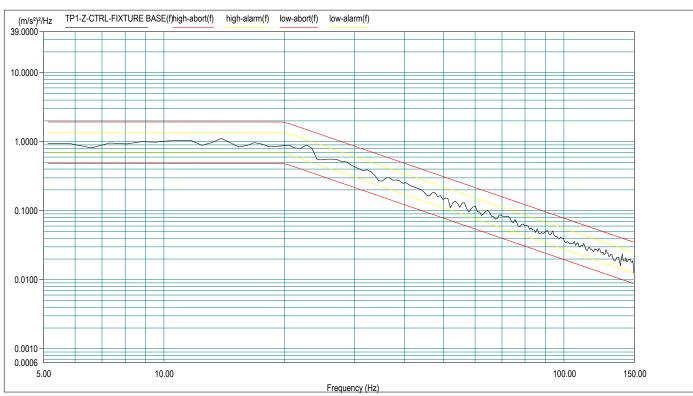
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 30 di 117

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z) Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:21, lunedì, settembre 21, 2015



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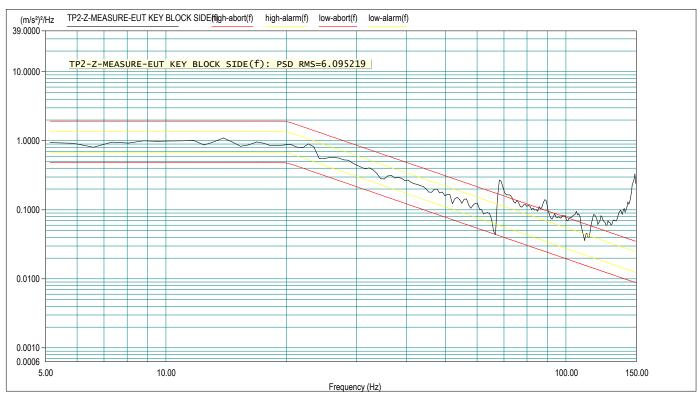
Documento: VR1527001SPMA-ITA.doc

Rev. 0 Pag. 31 di 117

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z) Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:22, lunedì, settembre 21, 2015

Frame Time:



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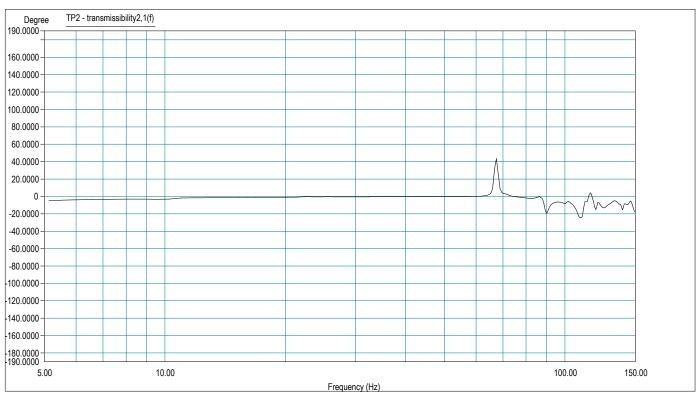
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 32 di 117

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z) Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:22, lunedì, settembre 21, 2015



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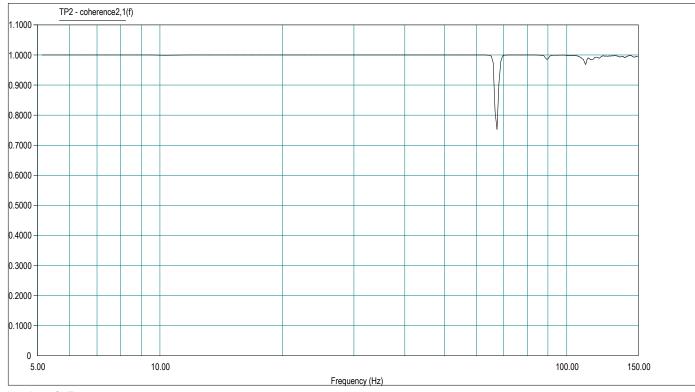
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 33 di 117

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z) Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08`



Level: 0 dB

Control RMS: 5.605435 m/s² Full Level Elapsed Time: 04:59:59

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:22, lunedì, settembre 21, 2015

200

Lines:

Frame Time:



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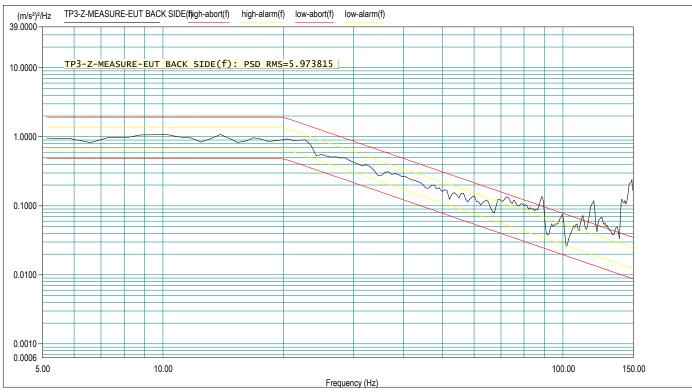
Rev. 0

Pag. 34 di 117

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z) Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:23, lunedì, settembre 21, 2015



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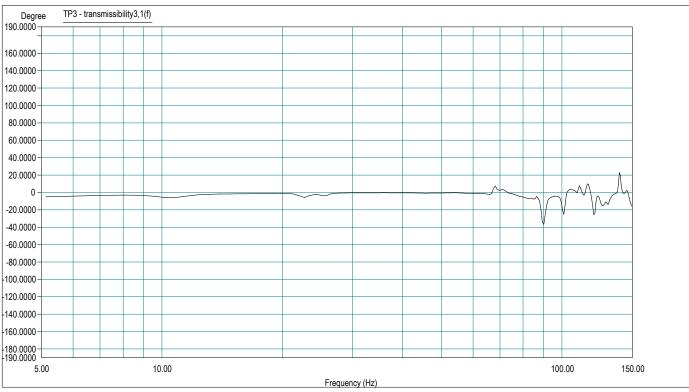
Documento: VR1527001SPMA-ITA.doc Rev. 0

Pag. 35 di 117

Project File Name: VERTICAL Z - ENDURANCE.prj

RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z) Profile Name: Test Type: Random

.\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08 Run Folder:



Level: 0 dB

5.605435 m/s² Full Level Elapsed Time: 04:59:59 200 Frame Time: Control RMS: Lines:

1.365333 Seconds Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:23, lunedì, settembre 21, 2015



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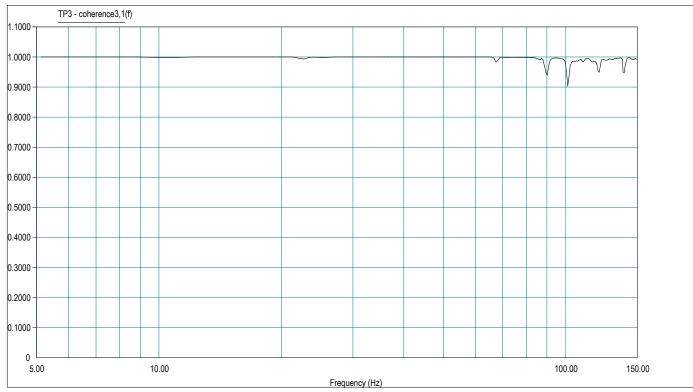
Rev. 0 Pag. 36 di 117

Documento: VR1527001SPMA-ITA.doc

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z) Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time: 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:24, lunedì, settembre 21, 2015



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Rev. 0

Pag. 37 di 117

ALLEGATO 1.3

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE VERTICALE (Z)

SHOCK TEST - UP DIRECTION - PROFILO LONGITUDINALE (3 PLOTS)



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Rev. 0

Pag. 38 di 117

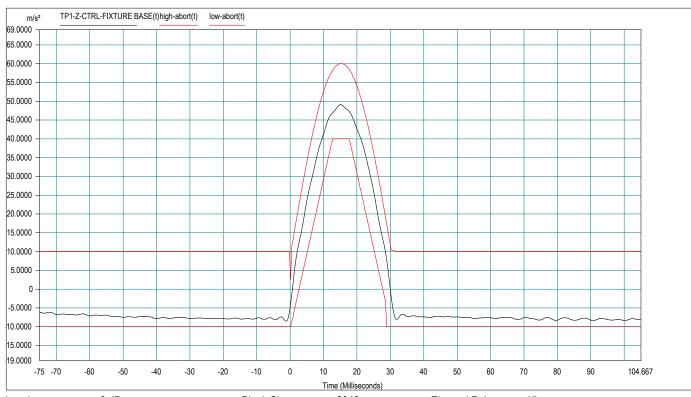
Test

Project File Name: VERTICAL Z - SHOCK.prj

RUN 03 SHOCK TEST ON ASSE VERTICALE (Z) - UP DIRECTION - PROFILO LONGITUDINALE Profile Name:

Type: Classical Shock Run Folder: .\RUN 03 SHOCK Z - UP Sep 21, 2015 16-49-42

20060 Masate (MI)



0 dB Block Size: 2048 Elapsed Pulses: 15

Frame Time: 3

0.682667 Seconds Control Peak:

49.088360

Control RMS:

Demand RMS:

8.696640 Full Level Elapsed Pulses:

50.000000 dT: 0.000333 Seconds Demand Peak: Pulse Type: Half Sine Amplitude:

Data saved at 04:51:01 PM, Monday, September 21, 2015

50.000000

8.770651 Remaining Pulses: 0

29.999999 ms Pulse Width:

Report created at 04:51:02, lunedì, settembre 21, 2015



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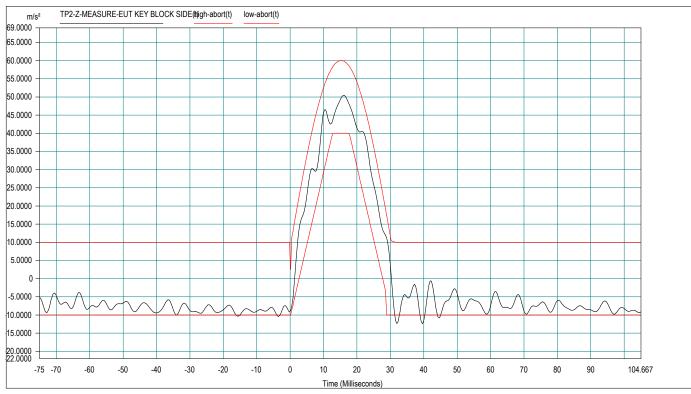
Pag. 39 di 117

Test

Project File Name: VERTICAL Z - SHOCK.prj

Profile Name: RUN 03 SHOCK TEST ON ASSE VERTICALE (Z) - UP DIRECTION - PROFILO LONGITUDINALE

.\RUN 03 SHOCK Z - UP Sep 21, 2015 16-49-42 Type: Classical Shock Run Folder:



0 dBBlock Size: 2048 Elapsed Pulses: 15 Level:

8.696640 Full Level Elapsed Pulses: Frame Time: 0.682667 Seconds Control Peak: 49.088360 Control RMS:

3 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: 50.000000

Demand RMS: 8.770651 Remaining Pulses: 0 Pulse Width: 29.999999 ms

Data saved at 04:51:01 PM, Monday, September 21, 2015 Report created at 04:51:03, lunedì, settembre 21, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test

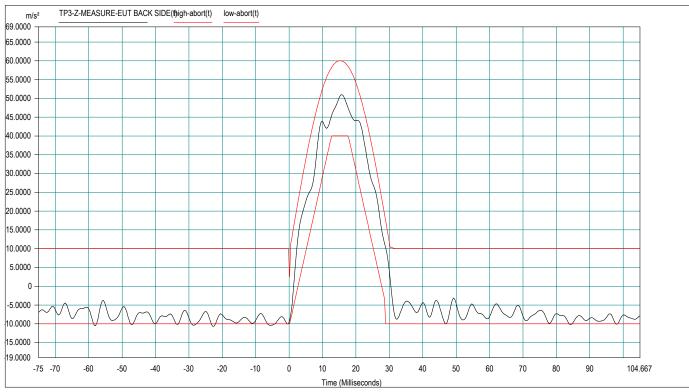
Documento: VR1527001SPMA-ITA.doc

Rev. 0 Pag. 40 di 117

Project File Name: VERTICAL Z - SHOCK.prj

Profile Name: RUN 03 SHOCK TEST ON ASSE VERTICALE (Z) - UP DIRECTION - PROFILO LONGITUDINALE

Type: Classical Shock Run Folder: \(\text{NRUN 03 SHOCK Z - UP Sep 21, 2015 16-49-42}\)



Level: 0 dB Block Size: 2048 Elapsed Pulses: 15

Frame Time: 0.682667 Seconds Control Peak: 49.088360 Control RMS: 8.696640 Full Level Elapsed Pulses: 3

dT: 0.000333 Seconds Demand Peak: 50.000000 Demand RMS: 8.770651 Remaining Pulses: 0
Pulse Type: Half Sine Amplitude: 50.000000 Pulse Width: 29.999999 ms

Data saved at 04:51:01 PM, Monday, September 21, 2015 Report created at 04:51:03 , lunedì, settembre 21, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0

Pag. 41 di 117

ALLEGATO 1.4

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE VERTICALE (Z)

SHOCK TEST - DOWN DIRECTION -



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20060 Masate (MI)

EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

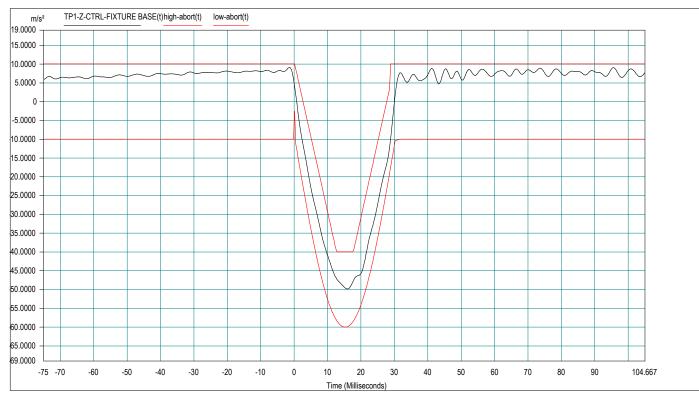
Documento: VR1527001SPMA-ITA.doc

Pag. 42 di 117 Rev. 0

Project File Name: VERTICAL Z - SHOCK.prj

RUN 04 SHOCK TEST ON ASSE VERTICALE (Z) - DOWN DIRECTION - PROFILO LONGITUDINALE Profile Name:

Test Type: Classical Shock Run Folder: .\RUN 04 SHOCK Z - DOWN Sep 21, 2015 16-53-05



Block Size: Elapsed Pulses: Level: 2048 19

Frame Time: 0.682667 Seconds Control Peak: 49.865845 Control RMS: 8.733629 Full Level Elapsed Pulses:

3

Demand RMS: 8.770651 Remaining Pulses: 0 dT: 0.000333 Seconds Demand Peak: 50.000000

29.999999 ms Half Sine 50.000000 Pulse Width: Pulse Type: Amplitude:

Data saved at 04:54:50 PM, Monday, September 21, 2015 Report created at 04:54:55, lunedì, settembre 21, 2015



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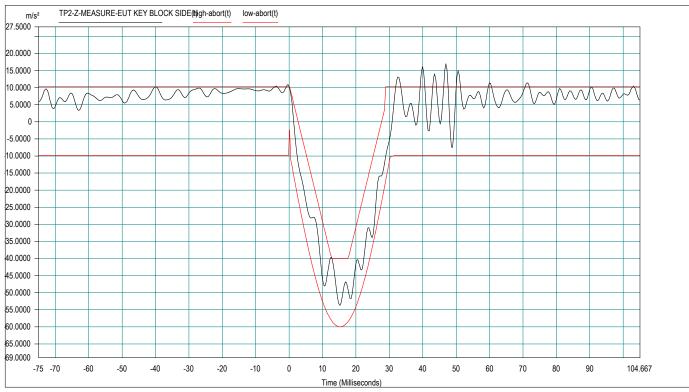
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Pag. 43 di 117 Rev. 0

Project File Name: VERTICAL Z - SHOCK.prj

RUN 04 SHOCK TEST ON ASSE VERTICALE (Z) - DOWN DIRECTION - PROFILO LONGITUDINALE Profile Name:

.\RUN 04 SHOCK Z - DOWN Sep 21, 2015 16-53-05 Classical Shock Run Folder: Test Type:



0 dBBlock Size: 2048 Elapsed Pulses: 19 Level:

8.733629 Full Level Elapsed Pulses: Frame Time: 0.682667 Seconds Control Peak: 49.865845 Control RMS:

3 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: 50.000000

8.770651 Remaining Pulses: 0 Pulse Width: 29.999999 ms

Demand RMS:

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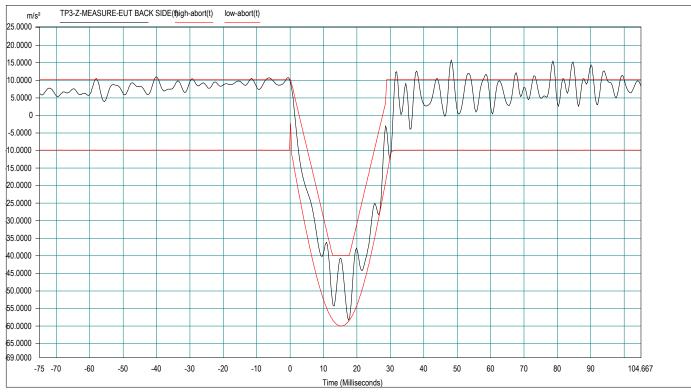
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 44 di 117

Project File Name: VERTICAL Z - SHOCK.prj

Profile Name: RUN 04 SHOCK TEST ON ASSE VERTICALE (Z) - DOWN DIRECTION - PROFILO LONGITUDINALE

Test Type: Classical Shock Run Folder: \RUN 04 SHOCK Z - DOWN Sep 21, 2015 16-53-05



Level: 0 dB Block Size: 2048 Elapsed Pulses: 19

Frame Time: 0.682667 Seconds Control Peak: 49.865845 Control RMS: 8.733629 Full Level Elapsed Pulses:

3 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: 50.000000

 0.000333 Seconds
 Demand Peak:
 50.000000
 Demand RMS:
 8.770651 Remaining Pulses:
 0

 Half Sine
 Amplitude:
 50.000000
 Pulse Width:
 29.999999 ms

Data saved at 04:54:50 PM, Monday, September 21, 2015 Report created at 04:54:56 , lunedì, settembre 21, 2015



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www.ctecnica.it 04703330961 EARTHING SWITCH E402A CAF **RELAZIONE SU TEST MECCANICI** Elaborato per: SPII S.p.A.

Rev. 0

Pag. 45 di 117

<u>ALLEGATO 1.5</u>

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE VERTICALE (Z)

FINAL MEASUREMENTS - PROFILO **ENDURANCE VERTICALE**



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Rev. 0 Pag. 46 di 117

Test Type:

Random

Run

Project File Name: VERTICAL Z - FINAL MEASURE.prj

Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z)

Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23

| TP1-Z-CTRL-FIXTURE BASE(fhigh-abort(f) | high-alarm(f) | low-abort(f) | low-alarm(f) | low-ala

Level: 0 dB

Control RMS: 5.565898 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:16, lunedì, settembre 21, 2015



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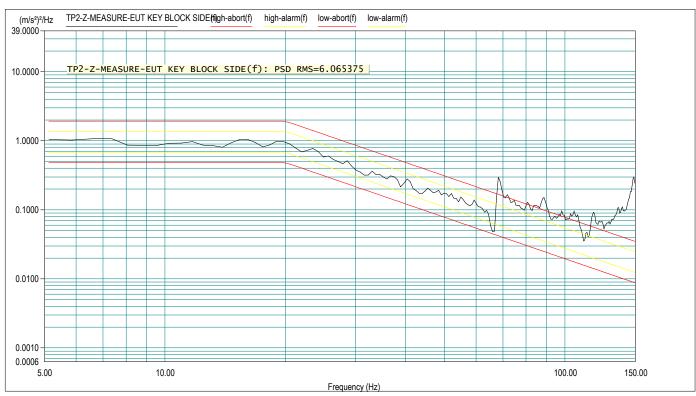
Rev. 0 Pag. 47 di 117

Documento: VR1527001SPMA-ITA.doc

Project File Name: VERTICAL Z - FINAL MEASURE.prj

Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z) Test Type: Random Run

Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23



Level: 0 dB

Demand RMS:

Control RMS: 5.565898 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00

Lines:

DOF:

200 Frame Time:

154 dF:

0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:16, lunedì, settembre 21, 2015



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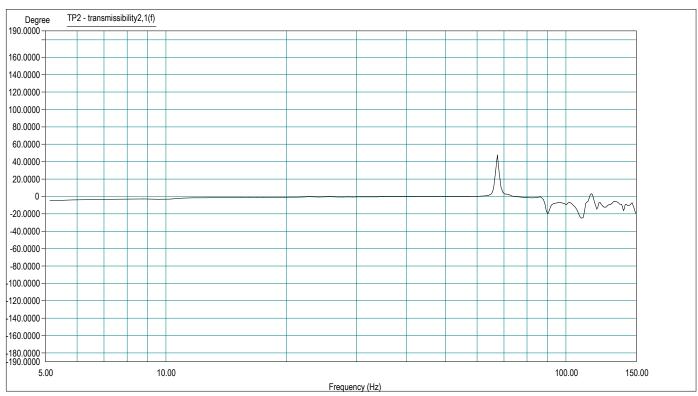
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Pag. 48 di 117 Rev. 0

Project File Name: VERTICAL Z - FINAL MEASURE.prj

RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z) Profile Name: Test Type: Run Random

Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23



Level: 0 dB

Control RMS: 5.565898 m/s²

Full Level Elapsed Time: 1.365333 Seconds

00:02:00

200 Lines:

Frame Time:

Demand RMS:

5.626908 m/s²

Remaining Time:

00:00:00

DOF:

dF:

0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:16, lunedì, settembre 21, 2015

154



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Test Type:

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Pag. 49 di 117

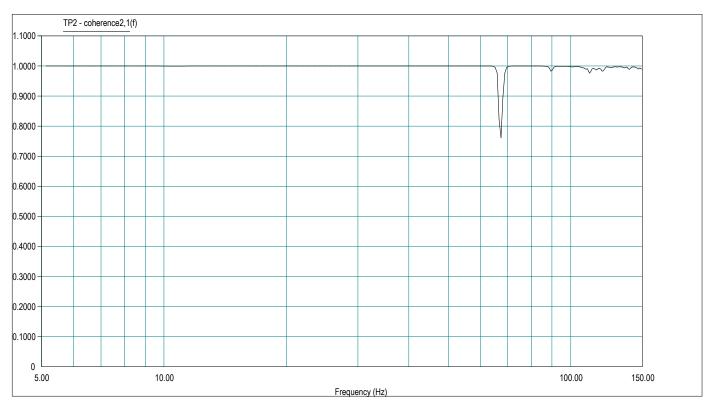
Random

Run

Project File Name: VERTICAL Z - FINAL MEASURE.prj

Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z)

Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23



Rev. 0

Level: 0 dB

Demand RMS:

Control RMS: 5.565898 m/s²

1.365333 Seconds

5.626908 m/s²

Full Level Elapsed Time:

Remaining Time:

00:02:00

Lines:

200 Frame Time:

00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:17, lunedì, settembre 21, 2015



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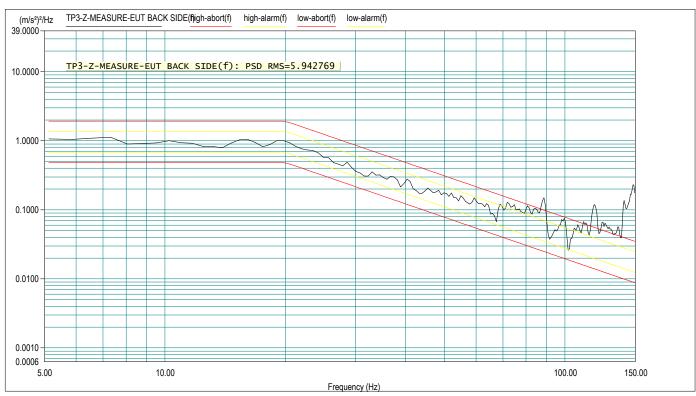
Documento: VR1527001SPMA-ITA.doc

Rev. 0 Pag. 50 di 117

Project File Name: VERTICAL Z - FINAL MEASURE.prj

Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z) Test Type: Random Run

Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23



Level: 0 dB

Demand RMS:

Control RMS: 5.565898 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00

00:00:00

Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:17, lunedì, settembre 21, 2015



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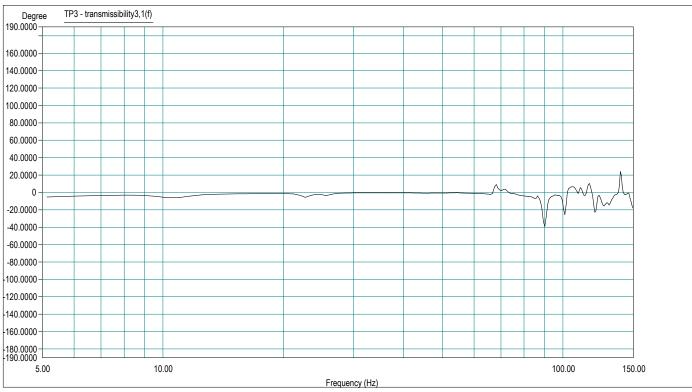
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 51 di 117

Project File Name: VERTICAL Z - FINAL MEASURE.prj

Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z) Test Type: Random Run

Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23



Level: 0 dB

Control RMS: 5.565898 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time: 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:17, lunedì, settembre 21, 2015



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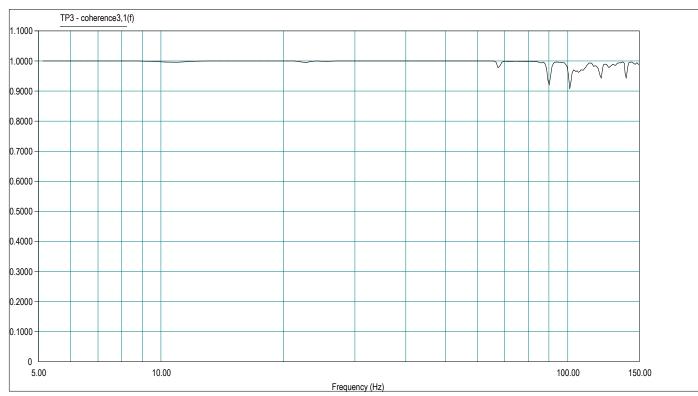
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 52 di 117

Project File Name: VERTICAL Z - FINAL MEASURE.prj

Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z) Test Type: Random Run

Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23



Level: 0 dB

Control RMS: 5.565898 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:18, lunedì, settembre 21, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0

Pag. 53 di 117

<u>ALLEGATO 2.1</u>

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

INITIAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE (7 PLOTS)



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test Type:

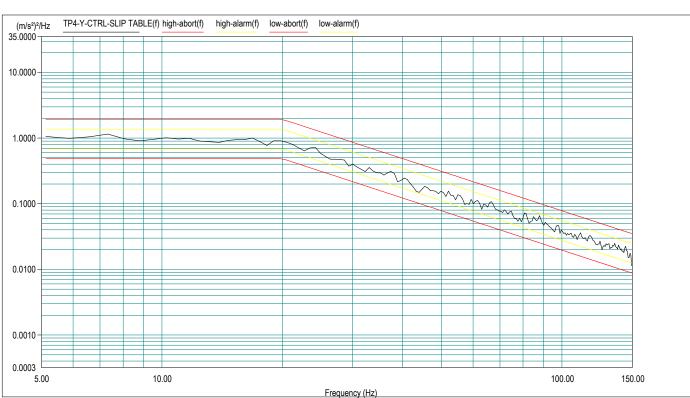
Documento: VR1527001SPMA-ITA.doc

Rev. 0 Pag. 54 di 117

Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Random Run Folder: .\RUN 06 I.M. - Y Sep 22, 2015 09-40-37



Level: 0 dB

Control RMS: 5.563500 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:44:58, martedì, settembre 22, 2015



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Rev. 0

Pag. 55 di 117

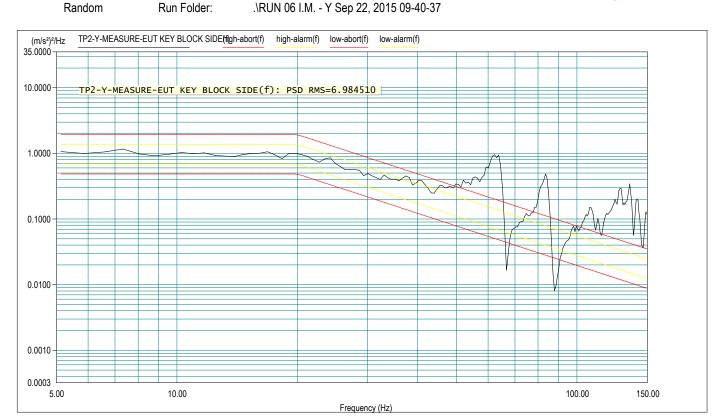
Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Documento: VR1527001SPMA-ITA.doc

Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

20060 Masate (MI)

Test Type:



Level: 0 dB

Demand RMS:

Control RMS: 5.563500 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00

00:00:00

Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:44:59, martedì, settembre 22, 2015



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Documento: VR1527001SPMA-ITA.doc

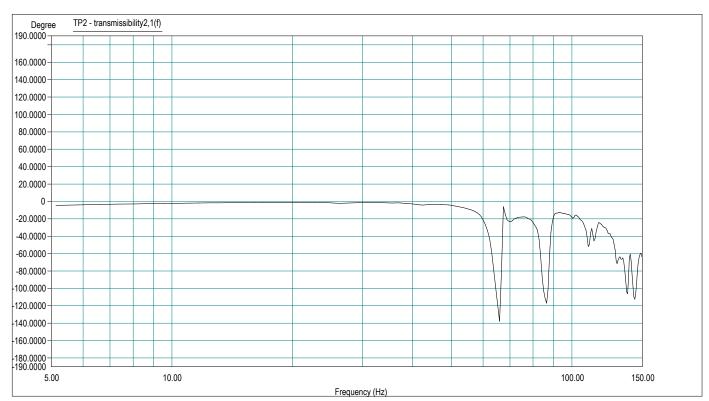
Rev. 0 Pag. 56 di 117

Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Run Folder:

Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:



.\RUN 06 I.M. - Y Sep 22, 2015 09-40-37

Level: 0 dB

Control RMS: 5.563500 m/s²

0.732422 Hz

1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines:

200 Frame

Frame Time:

Demand RMS: 5

5.626908 m/s²

Remaining Time:

00:00:00

DOF:

dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:44:59, martedì, settembre 22, 2015

154



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Rev. 0 Pag. 57 di 117

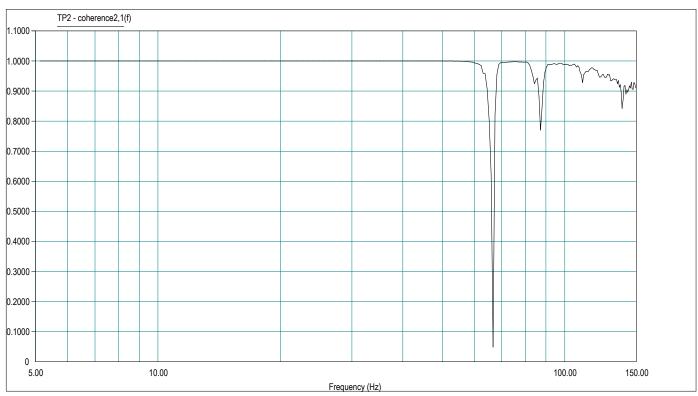
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Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Run Folder:

Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:



.\RUN 06 I.M. - Y Sep 22, 2015 09-40-37

Level: 0 dB

Demand RMS:

Control RMS: 5.563500 m/s²

1.365333 Seconds

Seconds 5.626908 m/s²

ds '

Full Level Elapsed Time:

00:02:00

Lines:

200 Frame Time:

Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:44:59, martedì, settembre 22, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Documento: VR1527001SPMA-ITA.doc

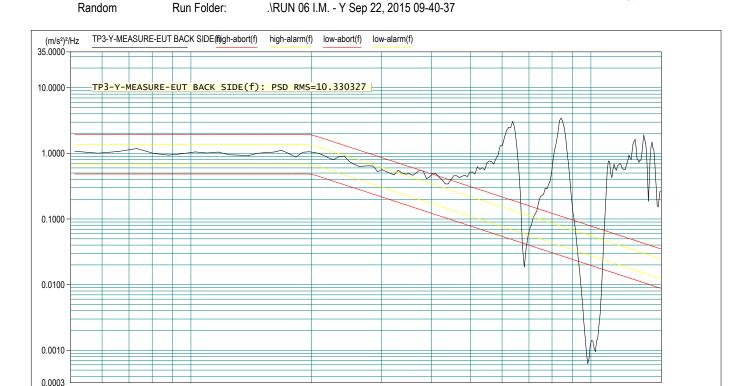
Pag. 58 di 117 Rev. 0

Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Run Folder:

RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE Profile Name:

Test Type:



0 dBLevel:

Demand RMS:

Control RMS: 5.563500 m/s²

1.365333 Seconds 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00

Frequency (Hz)

Lines:

200

Frame Time:

100.00

150.00

00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

10.00

Report created at 09:45:00, martedì, settembre 22, 2015



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Documento: VR1527001SPMA-ITA.doc

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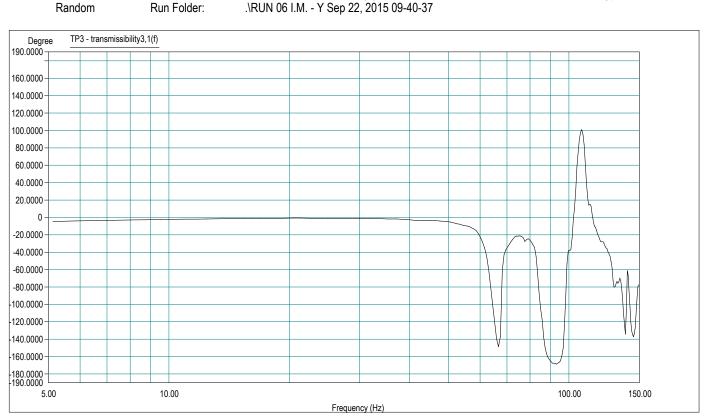
Pag. 59 di 117

Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Run Folder:

RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE Profile Name:

Test Type:



Level: 0 dB

Control RMS: 5.563500 m/s²

1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines:

200 Frame Time:

Demand RMS: 0.732422 Hz

5.626908 m/s²

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:45:00, martedì, settembre 22, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Pag. 60 di 117 Rev. 0

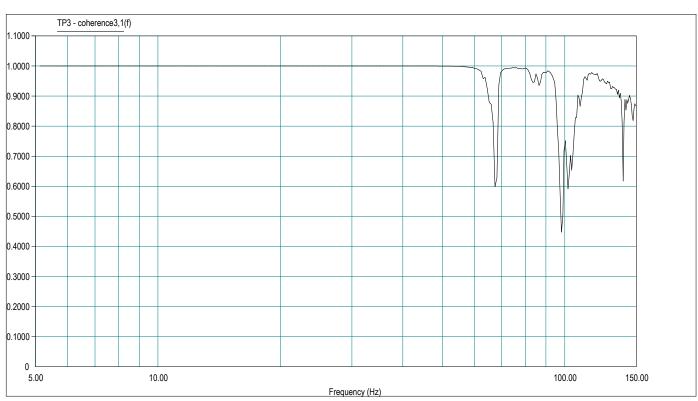
Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Run Folder:

Documento: VR1527001SPMA-ITA.doc

RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE Profile Name:

Test Type:



.\RUN 06 I.M. - Y Sep 22, 2015 09-40-37

Level: 0 dB

5.563500 m/s² Control RMS:

0.732422 Hz

Full Level Elapsed Time:

00:02:00

Lines:

200 Frame Time:

1.365333 Seconds Demand RMS:

5.626908 m/s²

Remaining Time:

00:00:00

DOF: 154 dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:45:00, martedì, settembre 22, 2015



Documento: VR1527001SPMA-ITA.doc

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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0

Pag. 61 di 117

ALLEGATO 2.2

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

ENDURANCE TEST - PROFILO

VERTICALE

(7 PLOTS)



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0

Pag. 62 di 117

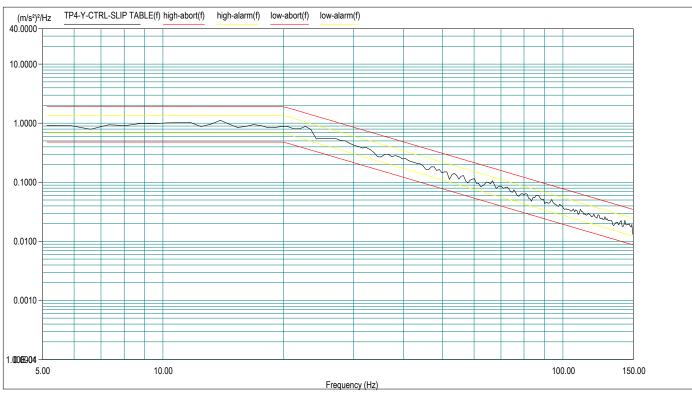
Test

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

20060 Masate (MI)

Type: Random Run Folder: .\RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Control RMS: 5.616270 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:45, martedì, settembre 22, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test

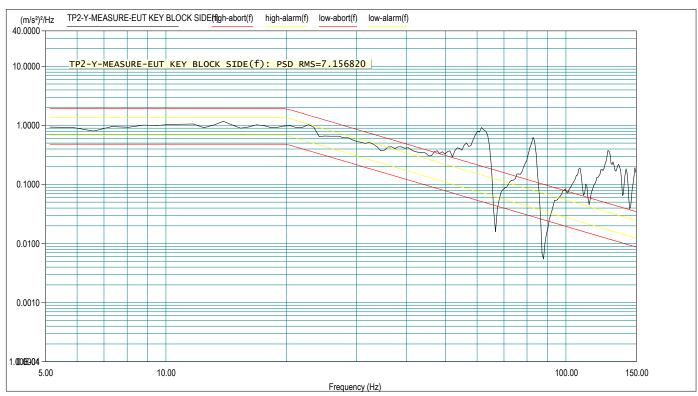
Documento: VR1527001SPMA-ITA.doc

Rev. 0 Pag. 63 di 117

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Type: Random Run Folder: \RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Demand RMS:

Control RMS: 5.616270 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

04:59:59

Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:46, martedì, settembre 22, 2015



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Rev. 0

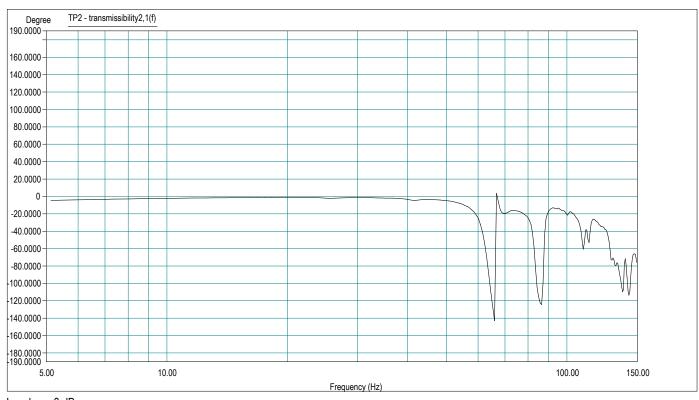
Pag. 64 di 117

Test

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Type: Random Run Folder: \RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Control RMS: 5.616270 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:47, martedì, settembre 22, 2015



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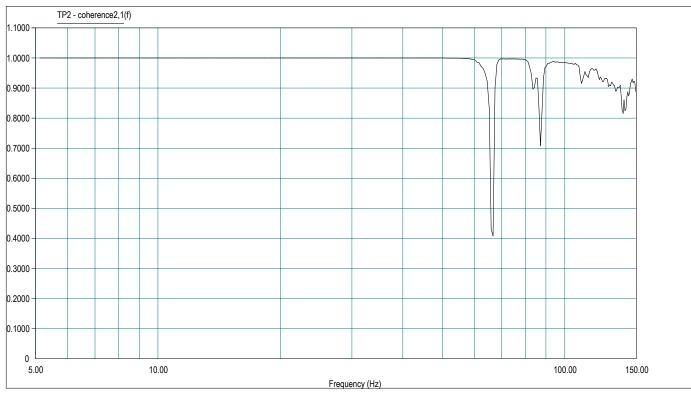
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 65 di 117

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Type: Random Run Folder: \RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Control RMS: 5.616270 m/s²

1.365333 Seconds

Demand RMS: 5.626908 m/s²

326908 m/s² Remaining Time:

Full Level Elapsed Time:

04:59:59

00:00:00

Lines:

DOF:

200

Frame Time:

Test

dF:

0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:47, martedì, settembre 22, 2015

154



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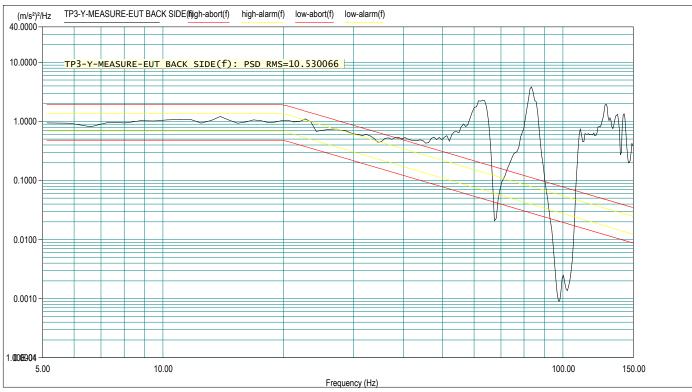
Test

Rev. 0 Pag. 66 di 117

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Type: Random Run Folder: \RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Demand RMS:

Control RMS: 5.616270 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

04:59:59

00:00:00

Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:48, martedì, settembre 22, 2015



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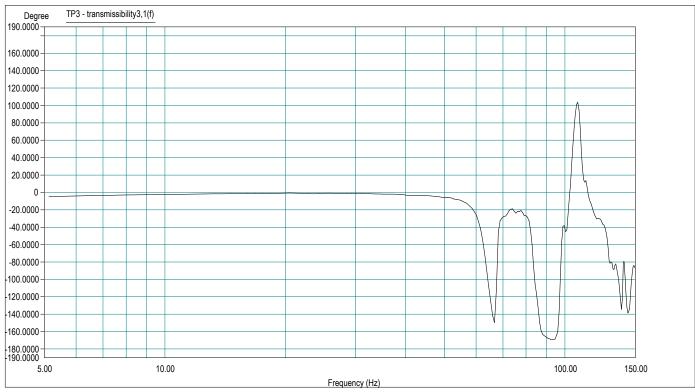
Test

Documento: VR1527001SPMA-ITA.doc Rev. 0 Pag. 67 di 117

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Type: Random Run Folder: \RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Control RMS: 5.616270 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time: 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:48, martedì, settembre 22, 2015



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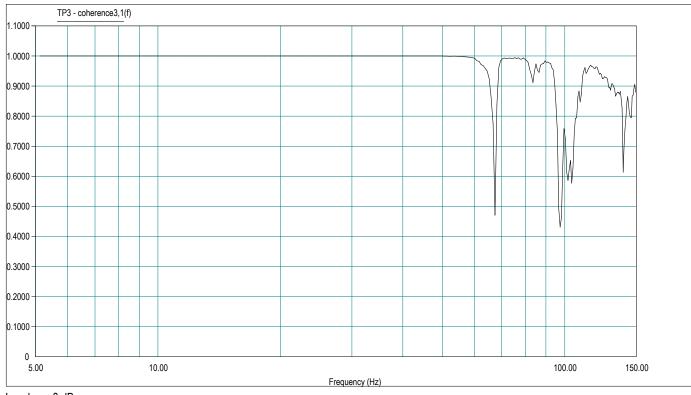
Test

Rev. 0 Pag. 68 di 117

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Type: Random Run Folder: \RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Demand RMS:

Control RMS: 5.616270 m/s²

1.365333 Seconds

5.626908 m/s²

n/s² Remaining Time:

Full Level Elapsed Time:

04:59:59

Lines:

200 Frame Time:

00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:49, martedì, settembre 22, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0

Pag. 69 di 117

<u>ALLEGATO 2.3</u>

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

SHOCK TEST - UP DIRECTION -PROFILO LONGITUDINALE (3 PLOTS)



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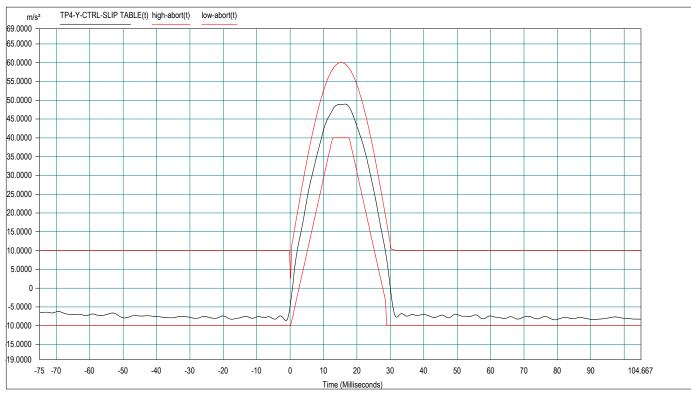
Documento: VR1527001SPMA-ITA.doc

Pag. 70 di 117 Rev. 0

Project File Name: TRANSVERSAL Y - SHOCK.prj

RUN 08 SHOCK TEST ON TRANSVERSAL (Y) - UP DIRECTION - PROFILO LONGITUDINALE Profile Name:

Type: Classical Shock Run Folder: .\RUN 08 SHOCK Y - UP Sep 22, 2015 15-02-24



0 dB Block Size: 2048 Elapsed Pulses: 18

Frame Time: 3

0.682667 Seconds Control Peak:

48.963539

Control RMS:

Demand RMS:

8.750772 Full Level Elapsed Pulses:

Test

50.000000 dT: 0.000333 Seconds Demand Peak: Pulse Type: Half Sine Amplitude:

50.000000

8.770651 Remaining Pulses: 0

Pulse Width: 29.999999 ms

Data saved at 03:03:58 PM, Tuesday, September 22, 2015

Report created at 03:04:03, martedì, settembre 22, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

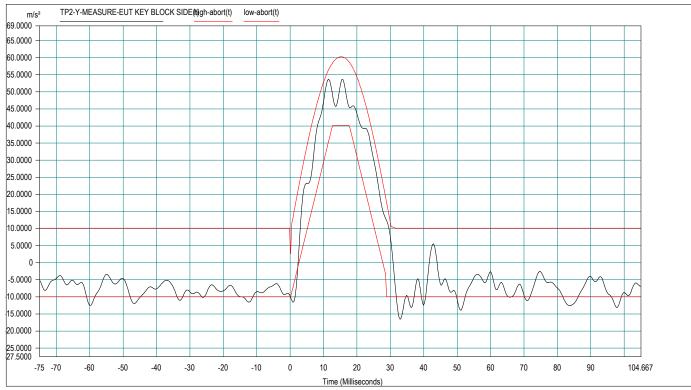
Test

Pag. 71 di 117 Rev. 0

Project File Name: TRANSVERSAL Y - SHOCK.prj

Profile Name: RUN 08 SHOCK TEST ON TRANSVERSAL (Y) - UP DIRECTION - PROFILO LONGITUDINALE

.\RUN 08 SHOCK Y - UP Sep 22, 2015 15-02-24 Type: Classical Shock Run Folder:



0 dBBlock Size: 2048 Elapsed Pulses: 18 Level:

8.750772 Full Level Elapsed Pulses: 48.963539 Frame Time: 0.682667 Seconds Control Peak: Control RMS:

3 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: 50.000000

8.770651 Remaining Pulses: 0 Demand RMS:

29.999999 ms Pulse Width:

Data saved at 03:03:58 PM, Tuesday, September 22, 2015 Report created at 03:04:04, martedì, settembre 22, 2015



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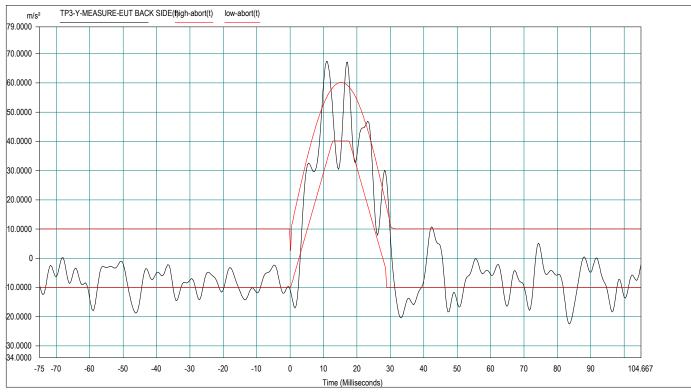
Test

Rev. 0 Pag. 72 di 117

Project File Name: TRANSVERSAL Y - SHOCK.prj

Profile Name: RUN 08 SHOCK TEST ON TRANSVERSAL (Y) - UP DIRECTION - PROFILO LONGITUDINALE

Type: Classical Shock Run Folder: .\RUN 08 SHOCK Y - UP Sep 22, 2015 15-02-24



Level: 0 dB Block Size: 2048 Elapsed Pulses: 18

Frame Time: 0.682667 Seconds Control Peak: 48.963539 Control RMS: 8.750772 Full Level Elapsed Pulses: 3

Data saved at 03:03:58 PM, Tuesday, September 22, 2015 Report created at 03:04:04, martedì, settembre 22, 2015



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EARTHING SWITCH E402A CAF **RELAZIONE SU TEST MECCANICI** Elaborato per: SPII S.p.A.

Documento: VR1527001SPMA-ITA.doc Rev. 0 Pag. 73 di 117

ALLEGATO 2.4

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

SHOCK TEST - DOWN DIRECTION -



dT:

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Rev. 0

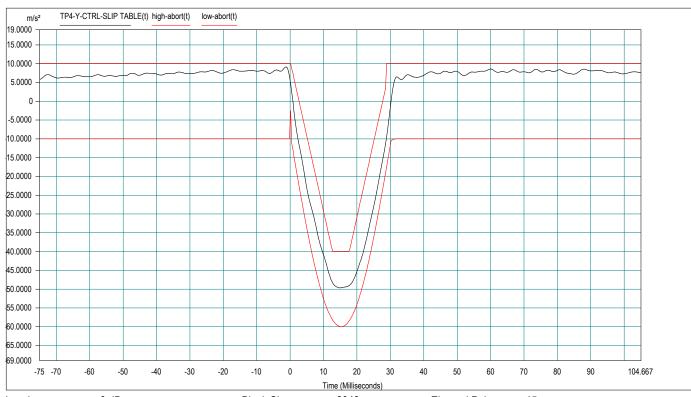
Pag. 74 di 117

Test

Project File Name: TRANSVERSAL Y - SHOCK.prj

RUN 09 SHOCK TEST ON TRANSVERSAL (Y) - DOWN DIRECTION - PROFILO LONGITUDINALE Profile Name:

Type: Classical Shock Run Folder: .\RUN 09 SHOCK Y - DOWN Sep 22, 2015 15-06-06



0 dB Block Size: 2048 Elapsed Pulses: 15

Frame Time: 0.682667 Seconds Control Peak: 49.674400 3

50.000000 0.000333 Seconds Demand Peak: Demand RMS: 8.770651 Remaining Pulses: 0

Control RMS:

8.814052 Full Level Elapsed Pulses:

50.000000 Pulse Width: 29.999999 ms Pulse Type: Half Sine Amplitude:

Report created at 03:07:25, martedì, settembre 22, 2015 Data saved at 03:07:24 PM, Tuesday, September 22, 2015



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Rev. 0

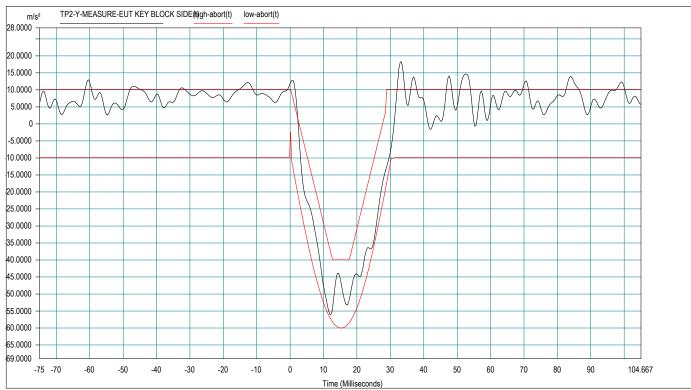
Pag. 75 di 117

Test

Project File Name: TRANSVERSAL Y - SHOCK.prj

Profile Name: RUN 09 SHOCK TEST ON TRANSVERSAL (Y) - DOWN DIRECTION - PROFILO LONGITUDINALE

.\RUN 09 SHOCK Y - DOWN Sep 22, 2015 15-06-06 Type: Classical Shock Run Folder:



0 dBBlock Size: 2048 Elapsed Pulses: 15 Level:

8.814052 Full Level Elapsed Pulses: Frame Time: 0.682667 Seconds Control Peak: 49.674400 Control RMS:

3 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: 50.000000

8.770651 Remaining Pulses: 0 Demand RMS:

29.999999 ms Pulse Width:

Data saved at 03:07:24 PM, Tuesday, September 22, 2015 Report created at 03:07:26, martedì, settembre 22, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test

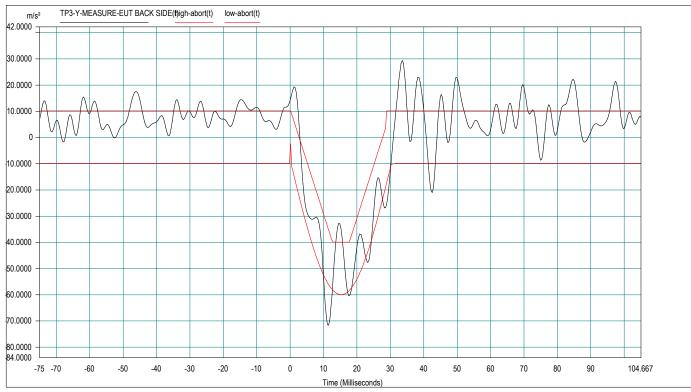
8.770651 Remaining Pulses: 0

Pag. 76 di 117 Rev. 0

Project File Name: TRANSVERSAL Y - SHOCK.prj

RUN 09 SHOCK TEST ON TRANSVERSAL (Y) - DOWN DIRECTION - PROFILO LONGITUDINALE Profile Name:

.\RUN 09 SHOCK Y - DOWN Sep 22, 2015 15-06-06 Type: Classical Shock Run Folder:



0 dBBlock Size: 2048 Elapsed Pulses: 15 Level:

8.814052 Full Level Elapsed Pulses: Frame Time: 0.682667 Seconds Control Peak: 49.674400 Control RMS:

3 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: 50.000000

29.999999 ms Pulse Width:

Demand RMS:

Data saved at 03:07:24 PM, Tuesday, September 22, 2015 Report created at 03:07:26, martedì, settembre 22, 2015



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EARTHING SWITCH E402A CAF **RELAZIONE SU TEST MECCANICI** Elaborato per: SPII S.p.A.

Pag. 77 di 117 Rev. 0

ALLEGATO 2.5

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

FINAL MEASUREMENTS - PROFILO **ENDURANCE VERTICALE**



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Rev. 0

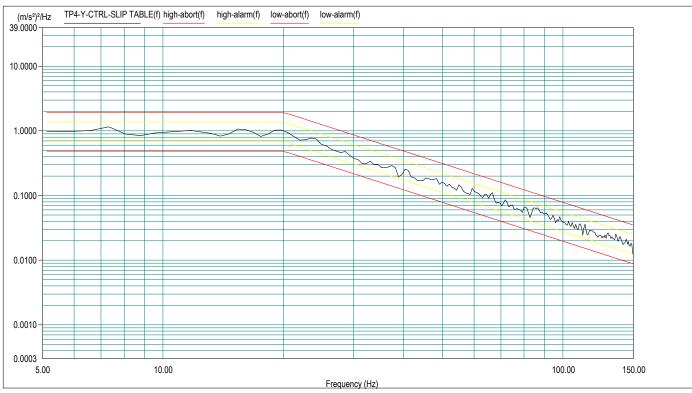
Pag. 78 di 117

Test Type:

Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Random Run Folder: .\RUN 10 F.M. - Y Sep 22, 2015 15-10-02



Level: 0 dB

Control RMS: 5.602522 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:35, martedì, settembre 22, 2015



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Documento: VR1527001SPMA-ITA.doc

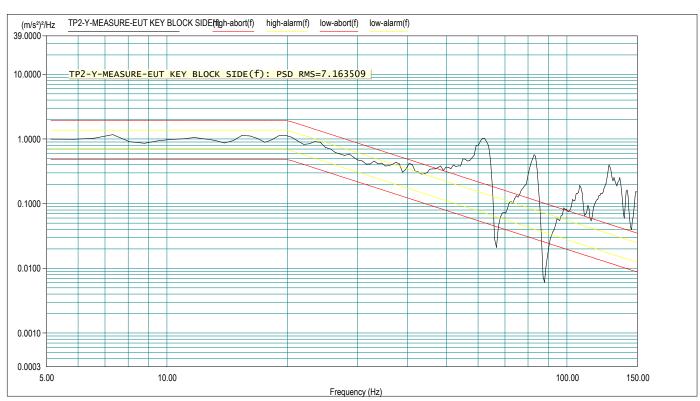
Pag. 79 di 117 Rev. 0

Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

Run Folder:

RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE Profile Name: .\RUN 10 F.M. - Y Sep 22, 2015 15-10-02

Test Type:



0 dBLevel:

Demand RMS:

5.602522 m/s² Control RMS:

1.365333 Seconds 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00

Lines:

200 Frame Time:

00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:35, martedì, settembre 22, 2015



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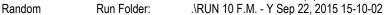
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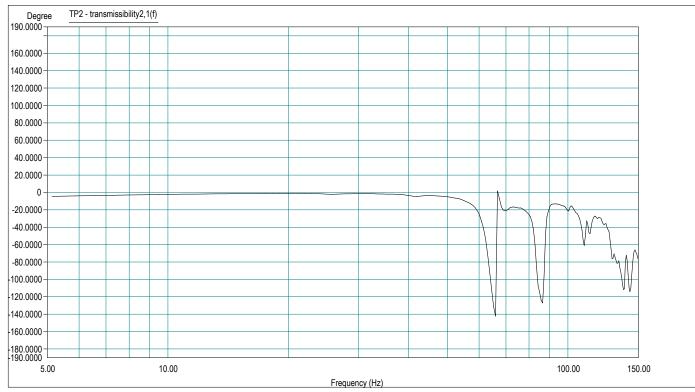
Pag. 80 di 117 Rev. 0

Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE Profile Name:

Test Type:





Level: 0 dB

5.602522 m/s² Control RMS:

Full Level Elapsed Time:

00:02:00

Lines:

200 Frame Time:

1.365333 Seconds Demand RMS: 0.732422 Hz

5.626908 m/s²

Remaining Time:

00:00:00

DOF:

dF:

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:35, martedì, settembre 22, 2015

154



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Test Type:

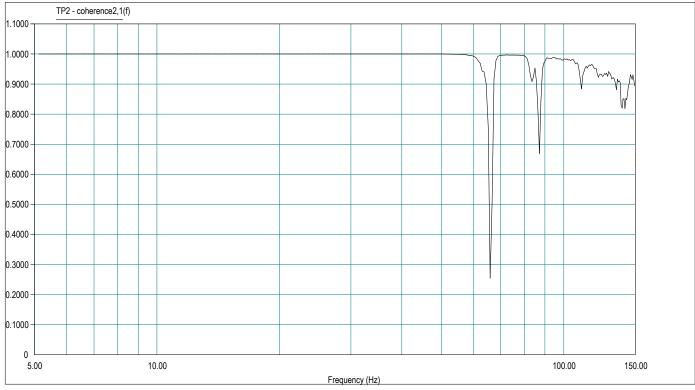
Pag. 81 di 117 Rev. 0

Documento: VR1527001SPMA-ITA.doc

Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE Profile Name:

.\RUN 10 F.M. - Y Sep 22, 2015 15-10-02 Run Folder:



Level: 0 dB

Demand RMS:

5.602522 m/s² Control RMS:

1.365333 Seconds

5.626908 m/s²

Remaining Time:

Full Level Elapsed Time:

00:02:00

00:00:00

Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:35, martedì, settembre 22, 2015



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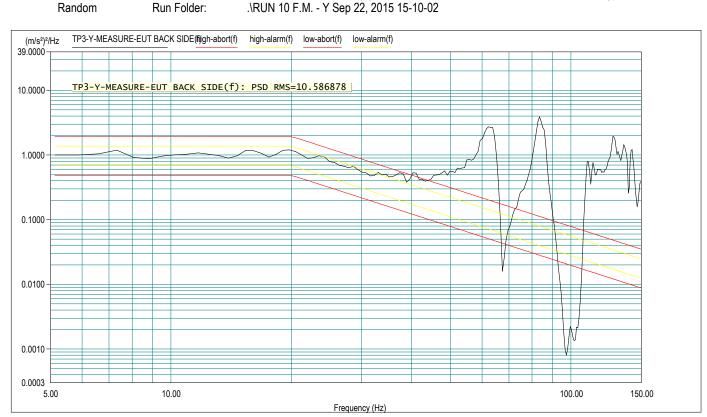
Pag. 82 di 117 Rev. 0

Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

Run Folder:

RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE Profile Name:

Test Type:



0 dBLevel:

Demand RMS:

5.602522 m/s² Control RMS:

1.365333 Seconds 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00

Lines:

200 Frame Time:

00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:36, martedì, settembre 22, 2015



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E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961

EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 83 di 117

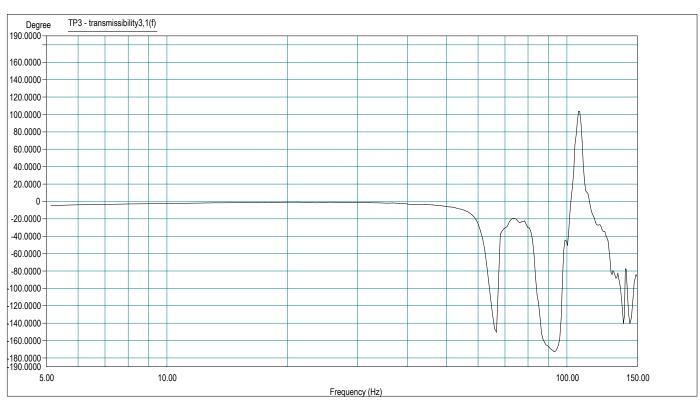
Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

Run Folder:

Documento: VR1527001SPMA-ITA.doc

Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:



.\RUN 10 F.M. - Y Sep 22, 2015 15-10-02

Level: 0 dB

Demand RMS:

Control RMS: 5.602522 m/s²

1.365333 Seconds

5.626908 m/s²

Full Level Elapsed Time:

Remaining Time:

00:02:00

00:00:00

Lines:

DOF:

200 Frame Time:

154 dF:

0.732422 Hz

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:36, martedì, settembre 22, 2015



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Rev. 0 Pag. 84 di 117

Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

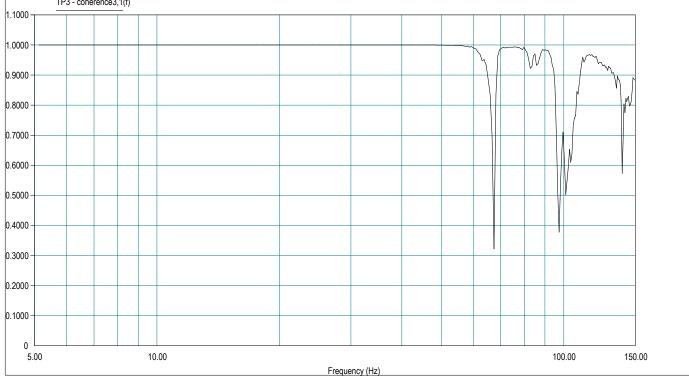
Run Folder:

Documento: VR1527001SPMA-ITA.doc

Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:





.\RUN 10 F.M. - Y Sep 22, 2015 15-10-02

Level: 0 dB

Control RMS: 5.602522 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:36, martedì, settembre 22, 2015



Tel. 0255305888

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Rev. 0 Pag. 85 di 117

<u>ALLEGATO 3.1</u>

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)

INITIAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE (7 PLOTS)



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

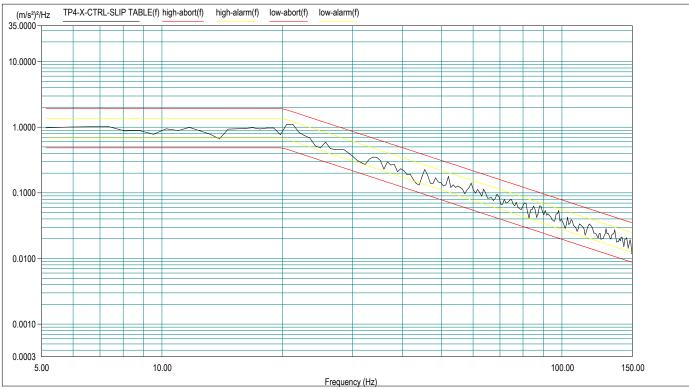
Rev. 0 Pag. 86 di 117

Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Random Run Folder: .\RUN 11 I.M. - X Sep 23, 2015 09-09-06

Test Type:



Level: 0 dB

Control RMS: 5.518383 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 09:13:01 AM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

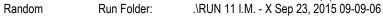
Documento: VR1527001SPMA-ITA.doc

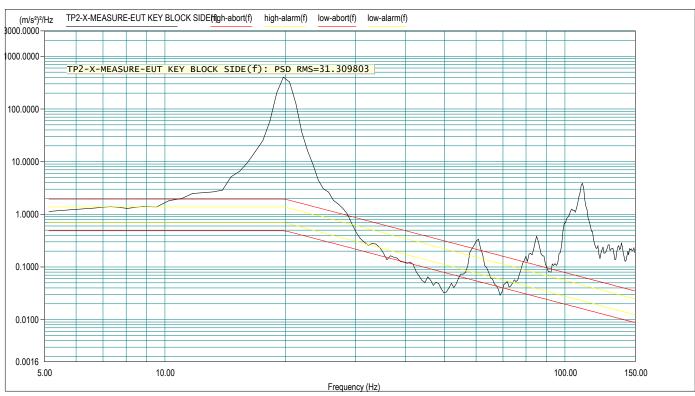
Rev. 0 Pag. 87 di 117

Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:





Level: 0 dB

Demand RMS:

Control RMS: 5.518383 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00 00:00:00 Lines: 200

Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 09:13:01 AM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Pag. 88 di 117 Rev. 0

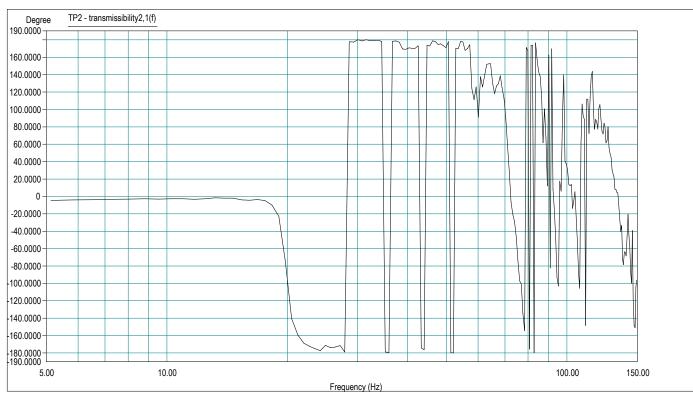
Documento: VR1527001SPMA-ITA.doc

Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE Profile Name:

Test Type:

.\RUN 11 I.M. - X Sep 23, 2015 09-09-06 Random Run Folder:



Level: 0 dB

Control RMS: 5.518383 m/s²

1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines:

200 Frame Time:

Demand RMS: 0.732422 Hz

5.626908 m/s²

Remaining Time:

00:00:00

DOF: 154 dF:

Data saved at 09:13:01 AM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0

Pag. 89 di 117

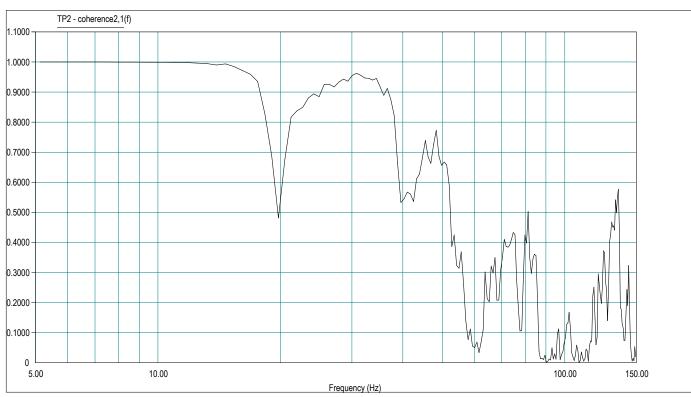
Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Documento: VR1527001SPMA-ITA.doc

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random Run Folder: .\RUN 11 I.M. - X Sep 23, 2015 09-09-06



Level: 0 dB

Control RMS: 5.518383 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 09:13:01 AM, Wednesday, September 23, 2015



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E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961 EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0 Pag. 90 di 117

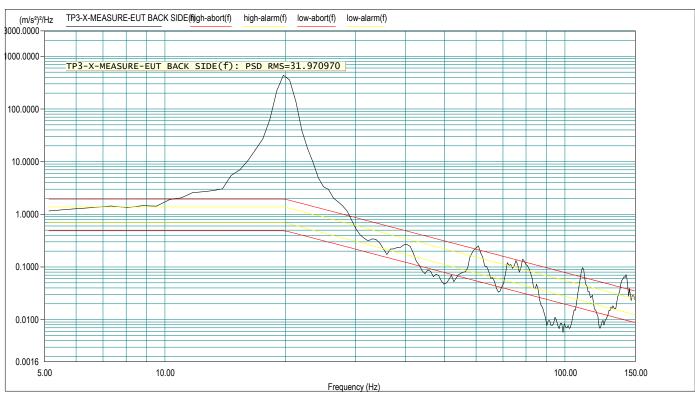
Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Documento: VR1527001SPMA-ITA.doc

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random Run Folder: .\RUN 11 I.M. - X Sep 23, 2015 09-09-06



Level: 0 dB

Demand RMS:

Control RMS: 5.518383 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00 00:00:00 Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 09:13:01 AM, Wednesday, September 23, 2015



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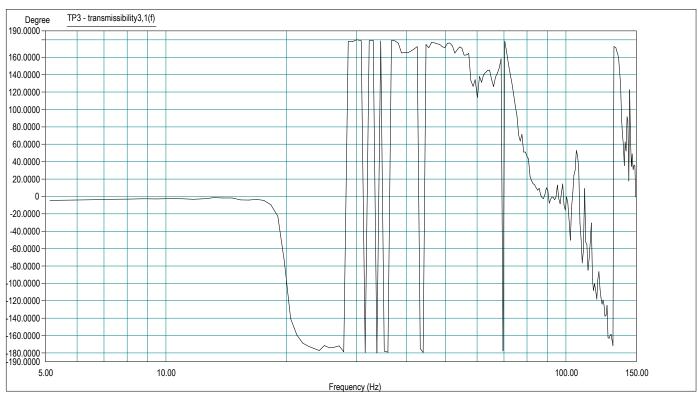
Pag. 91 di 117 Documento: VR1527001SPMA-ITA.doc Rev. 0

Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE Profile Name:

Test Type:

.\RUN 11 I.M. - X Sep 23, 2015 09-09-06 Random Run Folder:



Level: 0 dB

Control RMS: 5.518383 m/s² 1.365333 Seconds

0.732422 Hz

Full Level Elapsed Time:

00:02:00

Lines:

200 Frame Time:

Demand RMS:

5.626908 m/s² Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 09:13:01 AM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Pag. 92 di 117 Rev. 0

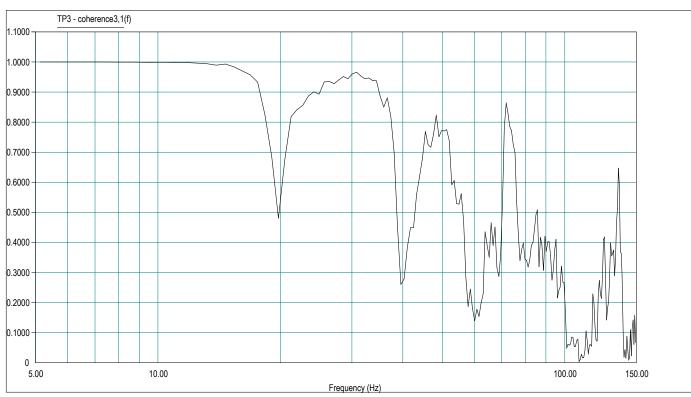
Documento: VR1527001SPMA-ITA.doc

Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE Profile Name:

Test Type:

.\RUN 11 I.M. - X Sep 23, 2015 09-09-06 Random Run Folder:



Level: 0 dB

5.518383 m/s² Full Level Elapsed Time: 00:02:00 Control RMS: 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 09:13:01 AM, Wednesday, September 23, 2015

Report created at 09:13:07, mercoledì, settembre 23, 2015

200

Lines:

Frame Time:



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EARTHING SWITCH E402A CAF **RELAZIONE SU TEST MECCANICI** Elaborato per: SPII S.p.A.

Rev. 0

Pag. 93 di 117

ALLEGATO 3.2

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)

ENDURANCE TEST - PROFILO



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Documento: VR1527001SPMA-ITA.doc

EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

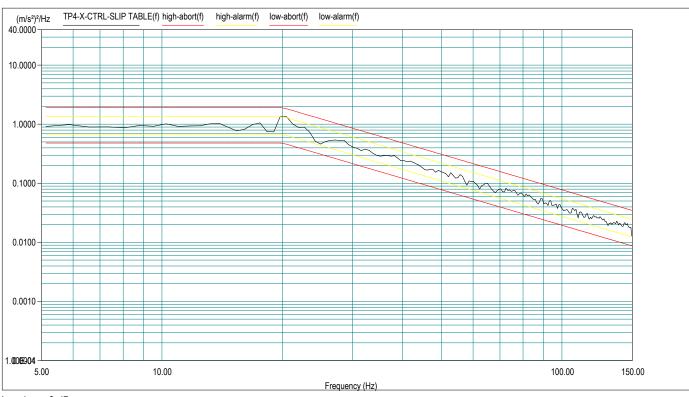
Test

Rev. 0 Pag. 94 di 117

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Type: Random Run Folder: .\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Control RMS: 5.653069 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 02:19:11 PM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test

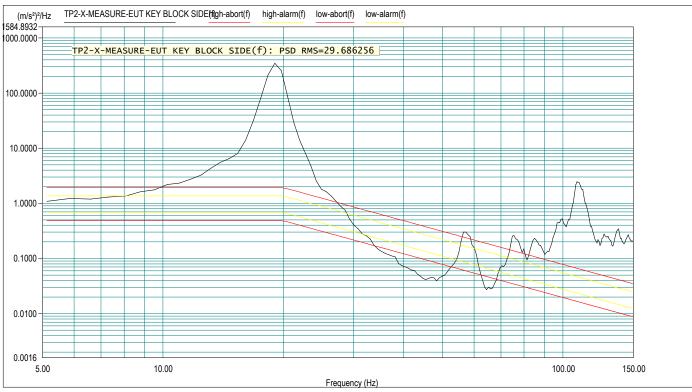
Rev. 0 Pag. 95 di 117

Documento: VR1527001SPMA-ITA.doc

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Type: Random Run Folder: \RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Demand RMS:

Control RMS: 5.653069 m/s²

1.365333 Seconds

5.626908 m/s² Remail

Remaining Time:

Full Level Elapsed Time:

04:59:59

Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 02:19:11 PM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test

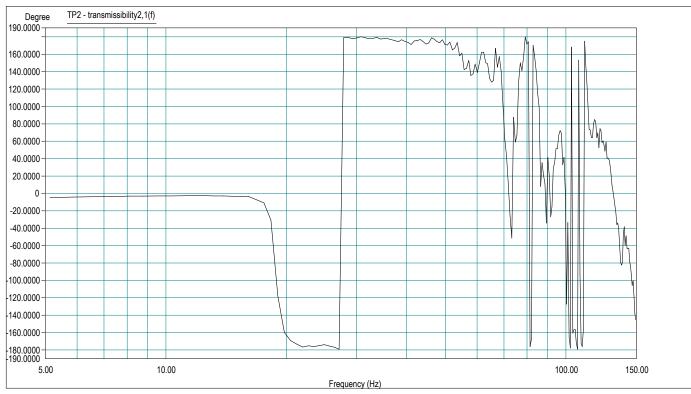
Rev. 0 Pag. 96 di 117

Documento: VR1527001SPMA-ITA.doc

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Type: Random Run Folder: \RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Demand RMS:

Control RMS: 5.653069 m/s²

1.365333 Seconds

5.626908 m/s²

Full Level Elapsed Time:

Remaining Time:

04:59:59

Lines:

200 Frame Time:

00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 02:19:11 PM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test

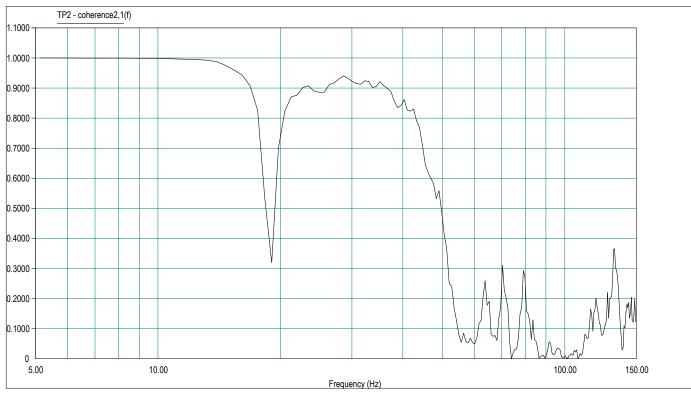
Documento: VR1527001SPMA-ITA.doc

Rev. 0 Pag. 97 di 117

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Type: Random Run Folder: \RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Demand RMS:

Control RMS: 5.653069 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

04:59:59

Lines:

200 Frame Time:

Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 02:19:11 PM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test

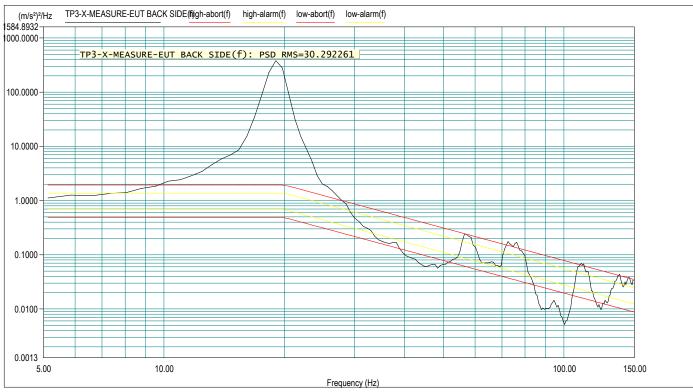
Documento: VR1527001SPMA-ITA.doc

Pag. 98 di 117 Rev. 0

Project File Name: LONGITUDINAL X - ENDURANCE.prj

RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE Profile Name:

.\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20 Type: Random Run Folder:



Level: 0 dB

Demand RMS:

Control RMS:

5.653069 m/s²

1.365333 Seconds 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

04:59:59 00:00:00 Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 02:19:11 PM, Wednesday, September 23, 2015



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20060 Masate (MI)

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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test

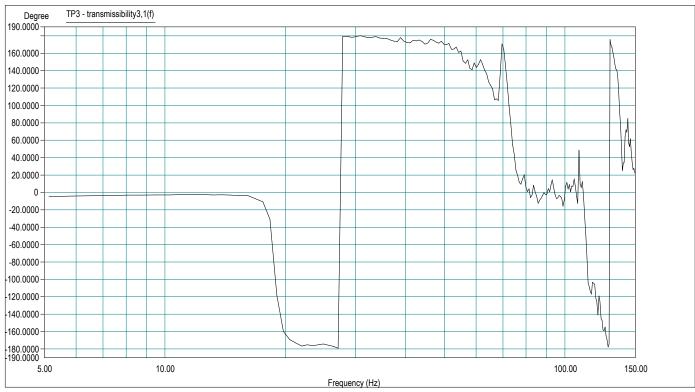
Pag. 99 di 117 Rev. 0

Documento: VR1527001SPMA-ITA.doc

Project File Name: LONGITUDINAL X - ENDURANCE.prj

RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE Profile Name:

.\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20 Type: Random Run Folder:



Level: 0 dB

5.653069 m/s² Control RMS:

1.365333 Seconds

Full Level Elapsed Time:

04:59:59

Lines:

200 Frame Time:

Demand RMS: 0.732422 Hz

5.626908 m/s²

Remaining Time:

00:00:00

DOF:

dF:

Data saved at 02:19:11 PM, Wednesday, September 23, 2015

Report created at 02:19:18, mercoledì, settembre 23, 2015

154



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

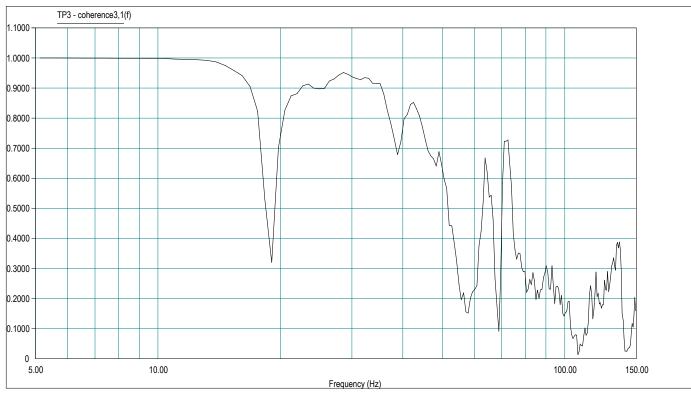
Test

Rev. 0 Pag. 100 di 117

Documento: VR1527001SPMA-ITA.doc

Project File Name: LONGITUDINAL X - ENDURANCE.prj
Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Type: Random Run Folder: .\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Control RMS: 5.653069 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time: 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 02:19:11 PM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF **RELAZIONE SU TEST MECCANICI** Elaborato per: SPII S.p.A.

Pag. 101 di 117 Rev. 0

ALLEGATO 3.3

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)



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20060 Masate (MI)

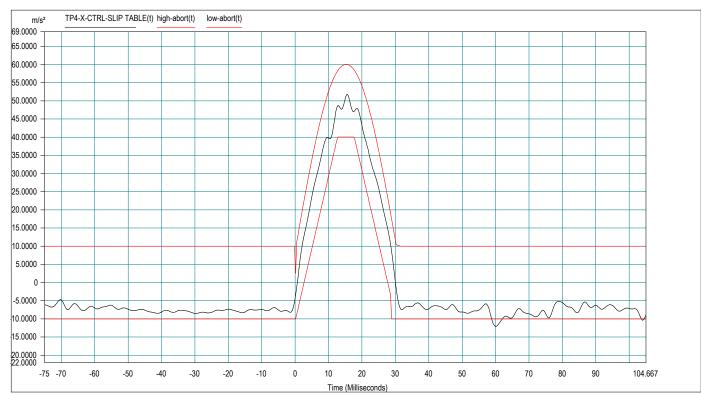
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Documento: VR1527001SPMA-ITA.doc

Pag. 102 di 117 Rev. 0

Project File Name: LONGITUDINAL X - SHOCK.prj

RUN 13 SHOCK TEST ON ASSE LONGITUDINALE (X) - UP DIRECTION - PROFILO LONGITUDINALE Profile Name: Test Type: Classical Shock Run Folder: .\RUN 13 SHOCK X - UP Sep 23, 2015 14-43-35



0 dB Block Size: 2048 Elapsed Pulses: 17

Frame Time: 3

0.682667 Seconds Control Peak:

51.767784

Control RMS:

8.793738 Full Level Elapsed Pulses:

50.000000 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: Data saved at 02:45:04 PM, Wednesday, September 23, 2015

Demand RMS: Pulse Width:

8.770651 Remaining Pulses: 0 29.999999 ms



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Documento: VR1527001SPMA-ITA.doc

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20060 Masate (MI)

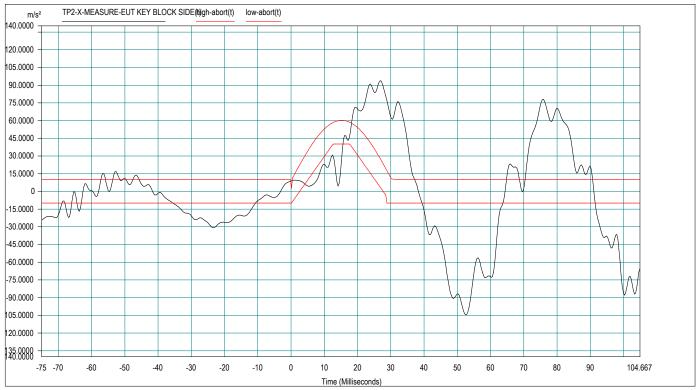
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Rev. 0

Pag. 103 di 117

Project File Name: LONGITUDINAL X - SHOCK.prj

RUN 13 SHOCK TEST ON ASSE LONGITUDINALE (X) - UP DIRECTION - PROFILO LONGITUDINALE Profile Name: .\RUN 13 SHOCK X - UP Sep 23, 2015 14-43-35 Test Type: Classical Shock Run Folder:



0 dBBlock Size: 2048 Elapsed Pulses: 17 Level:

8.793738 Full Level Elapsed Pulses: Frame Time: 0.682667 Seconds Control Peak: 51.767784 Control RMS:

3 8.770651 Remaining Pulses: 0 dT: 0.000333 Seconds Demand Peak: 50.000000 Demand RMS: Pulse Type: 29.999999 ms Half Sine Amplitude: 50.000000 Pulse Width:

Data saved at 02:45:04 PM, Wednesday, September 23, 2015 Report created at 02:45:10, mercoledì, settembre 23, 2015



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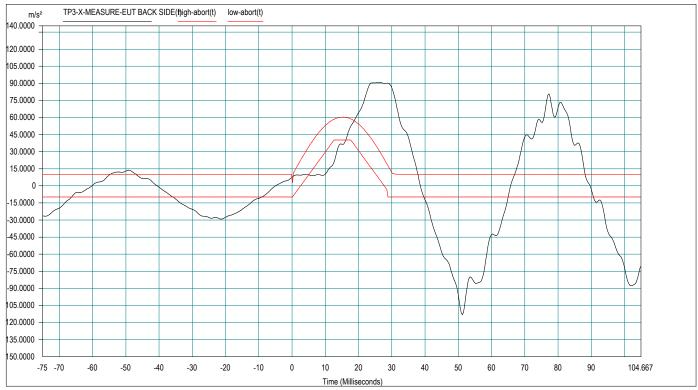
EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Documento: VR1527001SPMA-ITA.doc

Pag. 104 di 117 Rev. 0

Project File Name: LONGITUDINAL X - SHOCK.prj

RUN 13 SHOCK TEST ON ASSE LONGITUDINALE (X) - UP DIRECTION - PROFILO LONGITUDINALE Profile Name: Test Type: .\RUN 13 SHOCK X - UP Sep 23, 2015 14-43-35 Classical Shock Run Folder:



0 dBBlock Size: 2048 Elapsed Pulses: 17 Level:

8.793738 Full Level Elapsed Pulses: Frame Time: 0.682667 Seconds Control Peak: 51.767784 Control RMS:

3 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: 50.000000

Demand RMS: 8.770651 Remaining Pulses: 0

29.999999 ms Pulse Width:

Data saved at 02:45:04 PM, Wednesday, September 23, 2015 Report created at 02:45:11, mercoledì, settembre 23, 2015



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Rev. 0

Pag. 105 di 117

<u>ALLEGATO 3.4</u>

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)

SHOCK TEST - DOWN DIRECTION PROFILO LONGITUDINALE (3 PLOTS)



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20060 Masate (MI)

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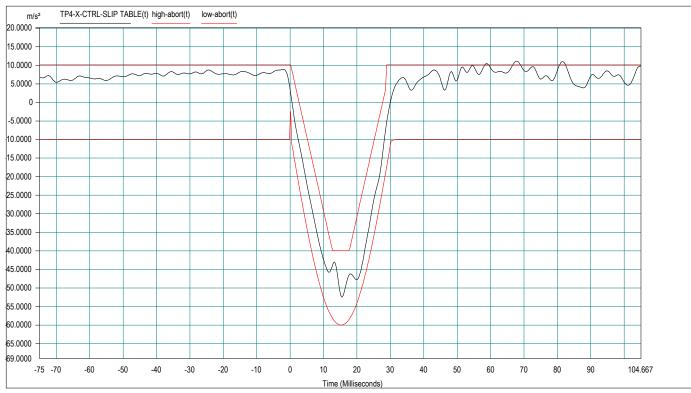
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Pag. 106 di 117 Rev. 0

Project File Name: LONGITUDINAL X - SHOCK.prj

RUN 14 SHOCK TEST ON LONGITUDINAL (X) AX - DOWN DIRECTION - PROFILO LONGITUDINALE Profile Name:

Test Type: Classical Shock Run Folder: .\RUN 14 SHOCK X - DOWN Sep 23, 2015 14-45-49



0 dB Block Size: 2048 Elapsed Pulses: 18

Frame Time: 3

Pulse Type:

0.682667 Seconds Control Peak:

52.482666

Control RMS:

8.871209 Full Level Elapsed Pulses:

50.000000

Demand RMS:

8.770651 Remaining Pulses: 0

Pulse Width: 29.999999 ms

dT:

Half Sine

0.000333 Seconds Demand Peak:

Amplitude:

50.000000 Data saved at 02:47:21 PM, Wednesday, September 23, 2015



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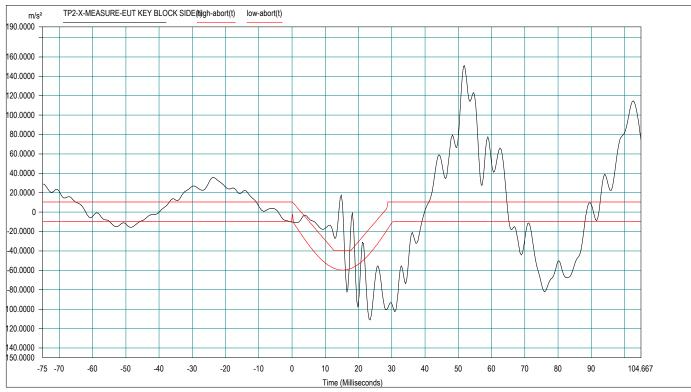
Pag. 107 di 117

Project File Name: LONGITUDINAL X - SHOCK.prj

Profile Name: RUN 14 SHOCK TEST ON LONGITUDINAL (X) AX - DOWN DIRECTION - PROFILO LONGITUDINALE

20060 Masate (MI)

Test Type: Classical Shock Run Folder: \RUN 14 SHOCK X - DOWN Sep 23, 2015 14-45-49



Level: 0 dB Block Size: 2048 Elapsed Pulses: 18

Frame Time: 0.682667 Seconds Control Peak: 52.482666 Control RMS: 8.871209 Full Level Elapsed Pulses:

3 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: 50.000000 Data saved at 02:47:21 PM, Wednesday, September 23, 2015

Demand RMS: 8.770651 Remaining Pulses: 0

Pulse Width: 29.999999 ms



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20060 Masate (MI)

EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

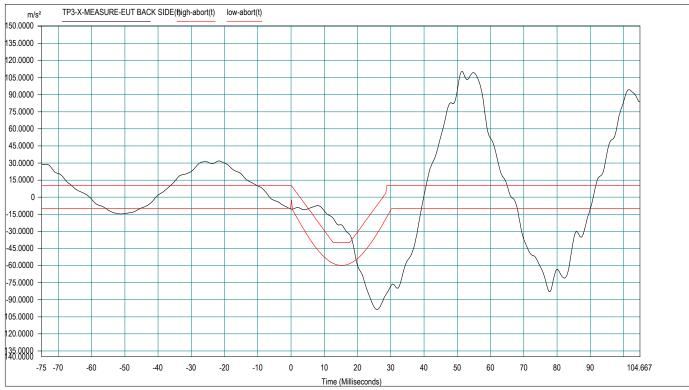
Documento: VR1527001SPMA-ITA.doc Rev. 0

Pag. 108 di 117

Project File Name: LONGITUDINAL X - SHOCK.prj

RUN 14 SHOCK TEST ON LONGITUDINAL (X) AX - DOWN DIRECTION - PROFILO LONGITUDINALE Profile Name:

Test Type: .\RUN 14 SHOCK X - DOWN Sep 23, 2015 14-45-49 Classical Shock Run Folder:



0 dBBlock Size: 2048 Elapsed Pulses: 18 Level:

8.871209 Full Level Elapsed Pulses: Frame Time: 0.682667 Seconds Control Peak: 52.482666 Control RMS:

3 dT: 0.000333 Seconds Demand Peak: 50.000000 Pulse Type: Half Sine Amplitude: 50.000000

Demand RMS: 8.770651 Remaining Pulses: 0

29.999999 ms Pulse Width:

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Rev. 0

Pag. 109 di 117

ALLEGATO 3.5

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)

FINAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE (7 PLOTS)



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

Test Type:

Pag. 110 di 117 Rev. 0

Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE Profile Name:

Random Run Folder: .\RUN 15 F.M. - X Sep 23, 2015 14-49-47

TP4-X-CTRL-SLIP TABLE(f) high-abort(f) low-abort(f) low-alarm(f) high-alarm(f) $(m/s^2)^2/Hz$ 35.0000 10.0000 1.0000 www.www. 0.1000 0.0100 0.0030 5.00 10.00 100.00 150.00 Frequency (Hz)

Level: 0 dB

Control RMS: 5.650515 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

5.626908 m/s² 00:00:00 dF: Demand RMS: Remaining Time: DOF: 154

0.732422 Hz

Data saved at 02:53:41 PM, Wednesday, September 23, 2015



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EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.

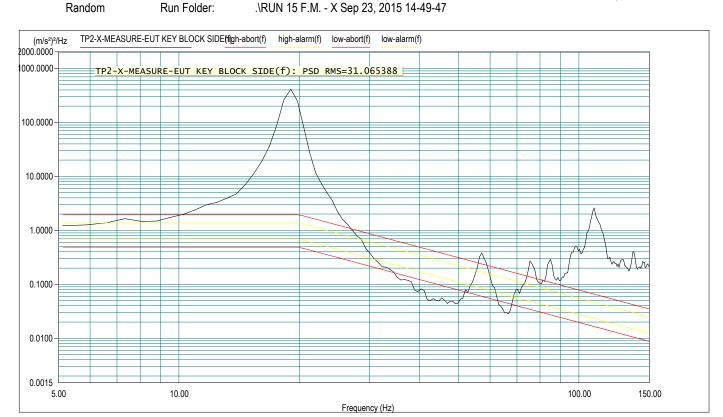
Rev. 0 Pag. 111 di 117

Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Documento: VR1527001SPMA-ITA.doc

Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:



Level: 0 dB

Demand RMS:

Control RMS: 5.650515 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00 00:00:00 Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 02:53:41 PM, Wednesday, September 23, 2015



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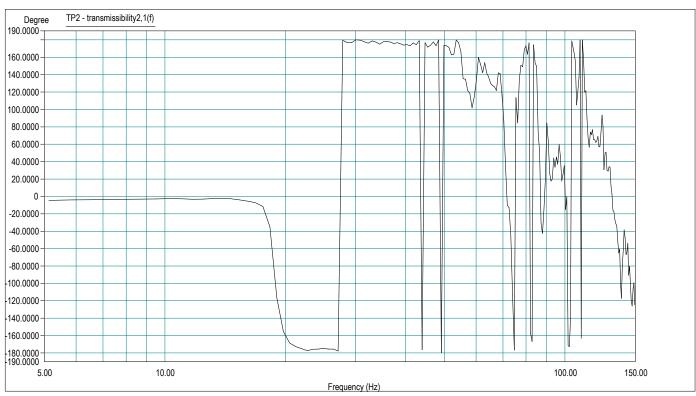
Pag. 112 di 117 Rev. 0

Documento: VR1527001SPMA-ITA.doc

Project File Name: LONGITUDINAL X - FINAL MEASURE.prj RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE Profile Name:

Test Type:

.\RUN 15 F.M. - X Sep 23, 2015 14-49-47 Random Run Folder:



Level: 0 dB

Demand RMS:

Control RMS: 5.650515 m/s²

1.365333 Seconds 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00

Lines:

200 Frame Time:

00:00:00 DOF: 154 dF:

0.732422 Hz

Data saved at 02:53:41 PM, Wednesday, September 23, 2015



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Rev. 0

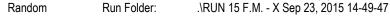
Pag. 113 di 117

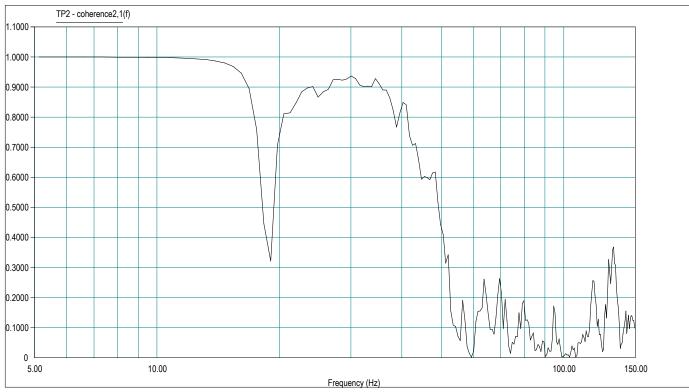
Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

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Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:





Level: 0 dB

Control RMS: 5.650515 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:

1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:

0.732422 Hz

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RELAZIONE S

Elaborato

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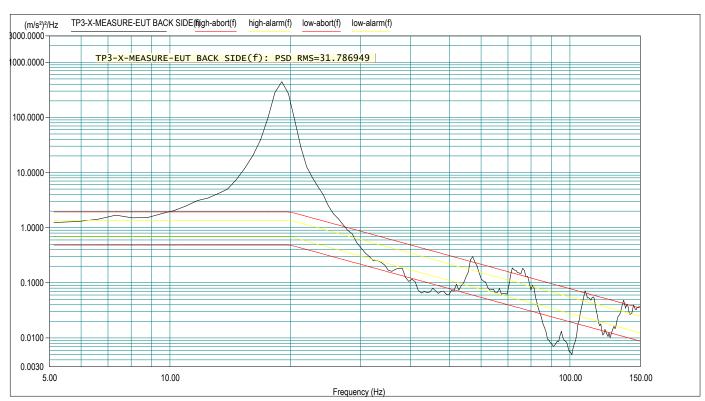
Pag. 114 di 117

Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Run Folder:

Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:



.\RUN 15 F.M. - X Sep 23, 2015 14-49-47

Level: 0 dB

Demand RMS:

Control RMS: 5.650515 m/s²

1.365333 Seconds RMS: 5.626908 m/s² Full Level Elapsed Time:

Remaining Time:

00:02:00 00:00:00 Lines:

200 Frame Time:

DOF: 154 dF:

0.732422 Hz

Data saved at 02:53:41 PM, Wednesday, September 23, 2015



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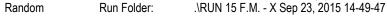
Pag. 115 di 117 Rev. 0

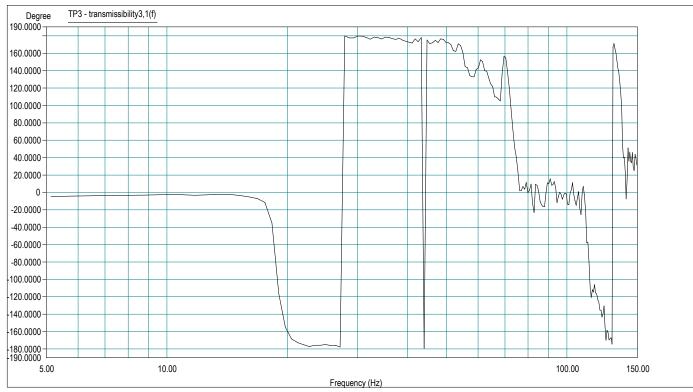
Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Documento: VR1527001SPMA-ITA.doc

RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE Profile Name:

Test Type:





Level: 0 dB

Control RMS: 5.650515 m/s²

1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines:

200 Frame Time:

Demand RMS: 0.732422 Hz

5.626908 m/s²

Remaining Time:

00:00:00

DOF: 154 dF:

Data saved at 02:53:41 PM, Wednesday, September 23, 2015



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Pag. 116 di 117 Rev. 0

Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

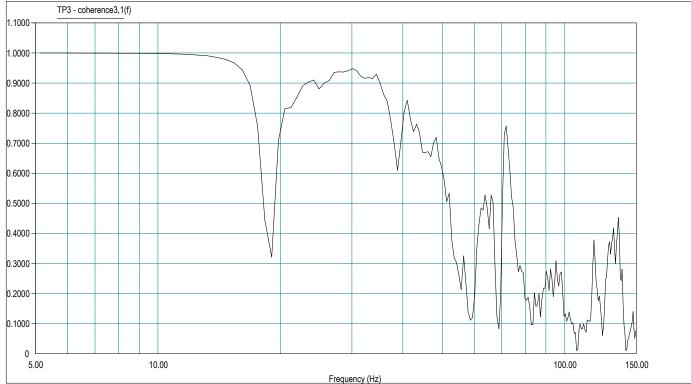
Run Folder:

Documento: VR1527001SPMA-ITA.doc

RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE Profile Name:

Test Type:





Level: 0 dB

5.650515 m/s² Control RMS:

1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines:

200

Frame Time:

Demand RMS: 5.626908 m/s² 0.732422 Hz

Remaining Time:

00:00:00

DOF:

dF:

Data saved at 02:53:41 PM, Wednesday, September 23, 2015

Report created at 02:53:44, mercoledì, settembre 23, 2015

154



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Rev. 0 Pag. 117 di 117

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