

DIN EN ISO 8041:2006-06 (E)

Human response to vibration - Measuring instrumentation (ISO 8041:2005)

Contents		Page
Foreword		2
1	Scope	5
2	Normative references	5
3	Terms, definitions and symbols	6
3.1	Terms and definitions	6
3.2	Symbols	9
4	Reference environmental conditions	11
5	Performance specifications	11
5.1	General characteristics	11
5.2	Display of signal magnitude	13
5.3	Electrical output	14
5.4	Vibration sensitivity	14
5.5	Accuracy of indication at reference frequency under reference conditions	14
5.6	Frequency weightings and frequency responses	15
5.7	Amplitude linearity	18
5.8	Instrument noise	18
5.9	Signal-burst response	18
5.10	Overload indication	21
5.11	Under-range indication	22
5.12	Time averaging	22
5.13	Running r.m.s. acceleration	22
5.14	Reset	22
5.15	Timing facilities	23
5.16	Electrical cross-talk	23
5.17	Vibration transducer characteristics	23
5.18	Power supply	23
6	Mounting	23
7	Environmental and electromagnetic criteria	24
7.1	General	24
7.2	Air temperature	24
7.3	Surface temperature	24
7.4	Electrostatic discharge	24
7.5	Radio-frequency emissions and public-power-supply disturbances	25
7.6	Immunity to a.c. power-frequency fields and radio-frequency fields	25
7.7	Ingress of water and dust	26
8	Provision for use with auxiliary devices	26
9	Instrument marking	26
10	Instrument documentation	27
11	Testing and calibration	27
12	Pattern evaluation	28

12.1	Introduction	28
12.2	Testing requirements	29
12.3	Submission for testing	29
12.4	Marking of the vibration meter and information in the instrument documentation	29
12.5	Mandatory facilities and general requirements	30
12.6	Initial instrument preparation	30
12.7	Indication at the reference frequency under reference conditions	30
12.8	Electrical cross-talk	31
12.9	Vibration transducer	31
12.10	Amplitude linearity and under-range indication	31
12.11	Frequency weightings and frequency responses	33
12.12	Instrument noise	36
12.13	Signal-burst response	36
12.14	Overload indication	36
12.15	Reset	37
12.16	Combined axis outputs	37
12.17	A.c. electrical output	37
12.18	Timing facilities	37
12.19	Power supply	38
12.20	Environmental, electrostatic and radio-frequency tests	38
12.21	Test report	42
13	Verification tests	42
13.1	Introduction	42
13.2	Testing requirements	42
13.3	Submission for a test	43
13.4	Marking of the vibration meter and information in the instrument documentation	43
13.5	Mandatory facilities and general requirements	43
13.6	Initial instrument preparation	43
13.7	Indication at the reference frequency under reference conditions	43
13.8	Electrical cross-talk	44
13.9	Amplitude linearity and under-range indication	44
13.10	Frequency weightings and frequency responses	45
13.11	Instrument noise	47
13.12	Signal-burst response	47
13.13	Overload indication	47
13.14	Reset	48
13.15	Combined axis outputs	48
13.16	Test report	48
14	In-situ checks	48
14.1	Introduction	48
14.2	Preliminary inspection	49
14.3	Vibration sensitivity (field calibration)	49
Annex A (normative) Specification for vibration field calibrator		50
Annex B (informative) Frequency weightings		53
Annex C (informative) Realization of frequency weighting filters		72
Annex D (informative) Running r.m.s. time averaging		76
Annex E (informative) Vibration transducer characteristics		78
Annex F (informative) Tests for mounting systems		80
Annex G (normative) Instrument documentation		83
Annex H (normative) Phase-response requirements for measurement of non-r.m.s. quantities		88
Bibliography		95