

DIN EN 12102-1:2018-02 (E)

Air conditioners, liquid chilling packages, heat pumps, process chillers and dehumidifiers with electrically driven compressors - Determination of the sound power level - Part 1: Air conditioners, liquid chilling packages, heat pumps for space heating and cooling, dehumidifiers and process chillers

Contents		Page
European foreword		4
Introduction		5
1	Scope	7
2	Normative references	7
3	Terms, definitions and symbols	8
3.1	Terms and definitions	8
3.2	Symbols, subscripts and units	9
3.2.1	General	9
3.2.2	Non ducted units	9
3.2.3	Ducted units	9
4	Measuring instruments	10
5	Operation of the unit	11
6	Installation of the unit	12
6.1	General	12
6.2	Ducted units	13
6.2.1	Installation	13
6.2.2	Duct end correction	14
6.2.3	Bend correction	15
6.2.4	Pressure and airflow measurements	15
6.2.5	Casing radiated test	16
6.3	Wall mounted units	16
6.4	Ceiling mounted units	16
6.5	Window-type units	16
6.6	Multisplit systems	16
6.7	Single duct units	17
6.7.1	Noise radiated by the casing	17
6.7.2	Noise from duct outlet	17
7	Acoustic measurement methods	17
7.1	Frequency range	17
7.2	Method selection	17
7.2.1	General	17
7.2.2	Target of measurement	18
7.3	Diffuse field methods	18
7.3.1	General	18
7.3.2	Non ducted units	18
7.3.3	Ducted units	19
7.4	Installation of the free field over a reflecting plane method	20
7.4.1	General	20
7.4.2	Reference surface	20
7.4.3	Measuring surface	20

8	Uncertainty of measurement results	22
9	Test report	22
9.1	General	22
9.2	Unit specification	22
9.3	Operating conditions, installation and environmental conditions	23
9.4	Measurement instruments	23
9.5	Measured values and results	23
	Annex A (normative) Specific measurement for variable speed units	25
A.1	General requirements	25
A.2	Test mode	25
A.3	Measurements process	25
A.4	Additional requirements applying to Ecodesign and Energy labelling regulations	25
	Annex B (informative) Typical configurations of air conditioners and heat pumps	26
B.1	General	26
B.2	Air-to-air units	26
B.3	Air-to-water(brine) units	28
B.4	Water(brine)-to-water(brine) units	29
B.5	Water(brine)-to-air units	30
	Annex ZA (informative) Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EU) No 206/2012 aimed to be covered	31
	Annex ZB (informative) Relationship between this European Standard and the energy labelling requirements of Commission Delegated Regulation (EU) No 626/2011 aimed to be covered	32
	Annex ZC (informative) Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EU) No 813/2013 aimed to be covered	33
	Annex ZD (informative) Relationship between this European Standard and the energy labelling requirements of Commission Regulation (EU) No 811/2013 aimed to be covered	34
	Bibliography	35