

DIN EN 16147:2011-04 (E)

Heat pumps with electrically driven compressors - Testing and requirements for marking of domestic hot water units

Contents		Page
Foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	5
4	Symbols and abbreviations	6
5	General test requirements	8
5.1	Test apparatus and uncertainties	8
5.2	Test room for the outdoor heat exchanger of air source heat pumps	10
5.3	Setting the external static pressure difference on the air side for heat pumps with duct connection	10
5.3.1	All units	10
5.3.2	Non ducted units	10
5.3.3	Ducted units	11
5.4	Installation and connection of the heat pump	11
5.5	Installation of heat pumps consisting of several parts	12
5.6	Test conditions	12
6	Performance test and determination of the energy consumption	13
6.1	General	13
6.2	Basic principles, scope of the tests	13
6.3	Heating up period	14
6.4	Standby power input	15
6.5	Useful energy, electricity consumption and COP by using reference tapping cycles	15
6.5.1	Reference tapping cycles	15
6.5.2	Determination of the daily useful energy	21
6.5.3	Determination of the daily electricity consumption	23
6.5.4	Coefficient of performance (COPDHW)	25
6.6	Reference hot water temperature and maximum volume of usable hot water	26
6.7	Temperature operating range	27
6.7.1	General	27
6.7.2	Outside the operating range	28
6.8	Safety devices checking test	28
6.8.1	General	28
6.8.2	Shutting off the heat transfer medium flows	28
6.8.3	Complete power supply failure	28
6.8.4	Condensate draining	29
7	Test results and test report	29
7.1	Data to be recorded	29
7.2	Test report	31
7.2.1	General information	31
7.2.2	Main results	31
8	Marking	32
9	Documentation	32

9.1	Technical data sheet	32
9.1.1	General description	32
9.1.2	Performance characteristics	32
9.2	Instructions	33
9.2.1	General	33
9.2.2	Physical description	33
9.2.3	Additional heating devices, if integrated in unit	33
9.2.4	Control and safety	33
9.2.5	Instructions for installation	33
9.2.6	Instructions for maintenance	34
	Bibliography	35