

DIN EN 13203-4:2022-10 (E)

Gas-fired domestic appliances producing hot water - Part 4: Assessment of energy consumption of gas combined heat and power appliances (mCHP) producing hot water and electricity

Contents		Page
European foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	6
4	General test conditions	8
4.1	Reference conditions	8
4.2	Measurement uncertainties	8
4.2.1	General	8
4.2.2	Steady state conditions	8
4.3	Test conditions	8
4.3.1	General	8
4.3.2	Test room	8
4.3.3	Water supply	8
4.3.4	Initial adjustment of the appliance	8
4.3.5	Conditions for the determination of the maximum load profile	8
4.3.6	Electrical supply	8
4.3.7	Delivered electrical energy	8
5	Determination of the energy consumption and electrical energy generation of the appliance	8
5.1	General	8
5.2	Load profiles	9
5.3	Determination of the energy recovered by the useful water	9
5.4	Calculation of gas energy	9
5.4.1	Calculation of the daily gas energy consumption in summer mode	9
5.4.2	Calculation of daily gas energy consumption in winter mode	9
5.4.3	Daily gas energy consumption seasonally weighted	9
5.5	Calculation of the daily electrical energy	9
5.5.1	Calculation of the delivered electrical energy	10
5.5.2	Calculation of the produced electrical energy	12
5.5.3	Calculation of electrical auxiliary energy	13
5.6	Measurement of energy consumption and production in standby mode	13
5.6.1	General	13
5.6.2	Calculation of daily gas energy consumption in standby mode	14
5.6.3	Calculation of daily auxiliary electrical energy consumption in standby mode	14
5.7	Determination of the daily auxiliary electrical energy consumption in off mode	15
6	Determination of the ratio of wasted water to total water	15
7	Eco design Related Product Data	15
7.1	Water heating energy efficiency	15
7.2	Smart control factor (SFC) and smart	16
7.3	Annual fuel consumption (AFC)	16

7.4	Annual electricity delivery (AED)	16
7.5	Mixed water at 40 °C (V40) for storage water heaters	16
	Annex A (informative) test conditions	17
	Annex B (informative) Examples of test rig and measurement devices	18
	Annex C (informative) Declaration of the Maximum Load Profile	19
	Annex D (normative) Test points	20
	Annex ZA (informative) Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EU) n° 814/2013 [OJEU L239 of 6 September 2013] aimed to be covered	22
	Annex ZB (informative) Relationship between this European Standard and the energy labelling requirements of Commission Delegated Regulation (EU) No 812/2013 [OJEU L239 of 6 September 2013] aimed to be covered	23
	Annex ZC (informative) Relationship between this European Standard and the Ecodesign requirements of Commission Regulation (EU) n° 813/2013 [OJEU L239 of 6 September 2013] aimed to be covered	24
	Annex ZD (informative) Relationship between this European Standard and the energy labelling requirements of Commission Delegated Regulation (EU) No 811/2013 [OJEU L239 of 6 September 2013] aimed to be covered	25
	Bibliography	26