
STATUTORY INSTRUMENTS

1998 No. 1566

ELECTRICITY

The Meters (Certification) Regulations 1998

Made - - - - - *24th June 1998*

Coming into force - - - - - *1st August 1998*

The Director General of Electricity Supply, in exercise of the powers conferred by sections 31 and 60 of, and paragraphs 5(1) and 13(2) of Schedule 7 to, the Electricity Act 1989(3), and with the consent of the Secretary of State in accordance with paragraph 13 of Schedule 7 to the Act, hereby makes the following Regulations:—;

Citation and commencement

1. These Regulations may be cited as the Meters (Certification) Regulations 1998 and shall come into force on 1st August 1998.

Interpretation

2.—(1) In these Regulations—

“the Act” means the Electricity Act 1989;

“approved” means approved by or under regulations made under paragraph 2 of Schedule 7 to the Act;

“authorised examiner” means a person who is authorised in accordance with regulation 5;

“authorised manufacturer” means a person who is authorised in accordance with regulation 3;

“authorised repairer” means a person who is authorised in accordance with regulation 4;

“certification period” means, in the case of a meter of a type specified in columns 1 to 6 of Schedule 4, the period stated in relation thereto in column 7 of that Schedule and, in the case of any other meter, the period of 10 years, the period beginning in each case on the date on which the meter is certified for the purpose of the Act;

“directions” means any directions issued by the Director under paragraph 6(1) of Schedule 7 to the Act;

(1) See paragraph 11(3) of Schedule 17 to the Electricity Act 1989 (c. 29).

(2) See the definitions of “prescribed” and “regulations”.

(3) 1989 c. 29; Schedule 7 was modified by the Measuring Instruments (EC Requirements) (Electrical Energy Meters) Regulations 1995 (S.I. 1995/2607).

“EEA Agreement” means the Agreement on the European Economic Area signed at Oporto on 2nd May 1992⁽⁴⁾ as adjusted by the Protocol signed at Brussels on 17th March 1993⁽⁵⁾;

“EEA State” means a state which, at the date of the entry into force of these Regulations, is a Contracting Party to the EEA Agreement;

“equivalent European provisions” has the meaning given by regulation 8;

“meter examiner” means a person appointed under paragraph 4 of Schedule 7 to the Act;

and

“permitted margins of error” means the margins of error referred to in regulation 7.

(2) Unless the context otherwise requires, any reference in these Regulations to a numbered regulation or Schedule is a reference to the regulation in or the Schedule to these Regulations bearing that number; any reference in a regulation or a Schedule to a numbered paragraph is a reference to the paragraph of that regulation or Schedule bearing that number; and any reference in a Schedule to a numbered table is a reference to the table bearing that number at the end of that Schedule.

Authorised manufacturer

3.—(1) Any person who manufactures meters and satisfies the Director that—

- (a) he owns or has available to him apparatus for the examination, testing and regulation of meters which complies with directions;
- (b) he operates at a manufacturing unit a quality assurance system in respect of every meter manufactured by him at that unit which conforms to the standard contained in European Standard EN ISO 9001:1994⁽⁶⁾ or to any standard, technical regulation, manufacturing method or code of practice accepted in other EEA States conformity with which will achieve an equivalent assurance of quality; and
- (c) he would be capable of complying with the conditions set out in paragraph (2),

may be authorised by the Director for the purpose of these Regulations in respect of meters manufactured by him at that manufacturing unit for a period not exceeding three years but so that any authorisation may be renewed from time to time.

(2) An authorisation granted by the Director to a person who satisfies the provisions of paragraph (1) shall be subject to the following conditions—

- (a) that the authorisation shall only apply in respect of meters which have been examined, tested and regulated using the apparatus referred to in sub-paragraph (a) of paragraph (1);
- (b) that the authorised person shall operate at all times at each manufacturing unit a quality assurance system which conforms to the standard referred to in sub-paragraph (b) of paragraph (1) and shall maintain a record in permanent form of the system which he operates and of the actions taken to comply with that system in respect of the meter or meters which he intends to submit for certification in accordance with regulation 6;
- (c) that the authorised person shall secure that each meter referred to in sub-paragraph (b) of this paragraph shall be examined and tested in accordance with the provisions of Schedule 1 or one of the equivalent European provisions;
- (d) that the authorised person shall cause every meter in respect of which a certificate has been issued under regulation 7 or 9 to be so stored while it remains under his control and so packaged for delivery when it is to be dispatched from his control as to prevent, so far as

⁽⁴⁾ OJ No. L1, 3.1.94, p.1.

⁽⁵⁾ OJ No. L1, 3.1.94, p.572.

⁽⁶⁾ EN ISO 9001:1994, which has the status of a British Standard, is a European Standard entitled “Quality Systems. Model for quality assurance in design, development, production, installation and servicing” and is published by the British Standards Institution.

reasonably practicable, damage which would cause it to operate in a manner which would not conform with the permitted margins of error;

- (e) that the authorised person shall permit the Director or any persons authorised by him to have access to any manufacturing unit and to examine and test all apparatus and to inspect all records referred to in this paragraph at all reasonable times for the purpose of ensuring that the authorised person is complying with the conditions of his authorisation;
- (f) that the authorised person shall comply with directions; and
- (g) that the authorised person shall pay any fee payable by him in accordance with regulation 11.

(3) An authorisation under this regulation may be terminated at any time by the Director upon giving not less than 28 days notice to the authorised person if he is in breach of any condition of his authorisation and, in the case of a breach which is capable of being remedied, has failed to remedy that breach as soon as reasonably practicable after notice has been given to him by the Director specifying the breach.

(4) For the purpose of this regulation and Schedule 2—

- (a) a person shall be treated as manufacturing a meter if he has caused the meter to be assembled so as to comply with the conditions of his authorisation but has not himself manufactured every component part of the meter;
- (b) “assembled” includes the carrying out of repairs or modifications to a meter within a period of twelve months after the date upon which a certificate in respect of that meter was first issued under regulation 7 or 9; and
- (c) “manufacturing unit” means premises specified to the Director in writing (which may identify the premises by reference to a plan) at which meters are manufactured but excludes any premises or that part of any premises which are used, otherwise than as provided in sub-paragraph (b), for the cleaning and repair of meters which have previously been used for measuring the quantity of electricity supplied.

Authorised repairer

4.—(1) Any person who repairs meters and satisfies the Director that—

- (a) he owns or has available to him apparatus for the examination, testing and regulation of meters which comply with directions;
- (b) he operates at a repair unit a quality assurance system in respect of every meter repaired by him at that unit which conforms to the standard contained in European Standard EN ISO 9002:1994(7) or to any standard, technical regulation, manufacturing method or code of practice accepted in other EEA States conformity with which will achieve an equivalent assurance of quality; and
- (c) he would be capable of complying with the conditions set out in paragraph (2),

may be authorised by the Director for the purpose of these Regulations in respect of meters repaired by him at that repair unit for a period not exceeding three years but so that any authorisation may be renewed from time to time.

(2) Any authorisation granted by the Director to a person who satisfies the provisions of paragraph (1) shall be subject to the following conditions—

- (a) that the authorisation shall only apply in respect of meters which have been examined, tested and regulated using the apparatus referred to in sub-paragraph (a) of paragraph (1);

(7) EN ISO 9002:1994, which has the status of a British Standard, is a European Standard entitled “Quality Systems. Model for quality assurance in production, installation and servicing” and is published by the British Standards Institution.

- (b) that the authorised person shall operate at all times at each repair unit a quality assurance system which conforms to the standard referred to in sub-paragraph (b) of paragraph (1) and shall maintain a record in permanent form of the system which he operates and of the action taken to comply with that system in respect of the meter or meters which he intends to submit for certification in accordance with regulation 6;
- (c) that the authorised person shall cause each meter which is repaired at a repair unit to be repaired to a standard and using such materials as would reasonably be expected to enable it to operate within the permitted margins of error for not less than the certification period;
- (d) that the authorised person shall secure that each meter referred to in sub-paragraph (b) of this paragraph shall be examined and tested in accordance with the provisions of Schedule 1 or one of the equivalent European provisions;
- (e) that the authorised person shall cause every meter in respect of which a certificate has been issued under regulation 7 or 9 to be so stored while it remains under his control and so packaged for delivery when it is to be dispatched from his control as to prevent, so far as reasonably practicable, damage which would cause it to operate in a manner which would not conform with the permitted margins of error;
- (f) that the authorised person shall permit the Director or any person authorised by him to have access to any repair unit and to examine and test all apparatus and to inspect all records referred to in this paragraph at all reasonable times for the purpose of ensuring that the authorised person is complying with the conditions of his authorisation;
- (g) that the authorised person shall comply with directions; and
- (h) that the authorised person shall pay any fee payable by him in accordance with regulation 11.

(3) An authorisation under this regulation may be terminated at any time by the Director upon giving not less than 28 days notice to the authorised person if he is in breach of any condition of his authorisation and, in the case of a breach which is capable of being remedied, has failed to remedy that breach as soon as reasonably practicable after notice has been given to him by the Director specifying the breach.

(4) For the purpose of this regulation and Schedule 2 “repair unit” means premises specified to the Director in writing (which may identify the premises by reference to a plan) at which meters which have previously been used for measuring the quantity of electricity supplied are cleaned, repaired, tested or regulated but excluding any premises or that part of any premises which are used for the manufacture or assembly of meters.

Authorised examiner

5.—(1) A public electricity supplier, an authorised manufacturer or an authorised repairer may nominate a person for the purpose of this regulation.

(2) If the Director is satisfied that a person nominated under paragraph (1) is competent to carry out the functions contained or referred to in regulation 7 the Director may authorise that person to be an examiner for the purpose of certifying meters for the purpose of the Act.

(3) A person authorised to be an examiner shall not be authorised to examine any meter which he has wholly or partly manufactured or repaired, or one which he has examined, tested or regulated in a capacity other than that of an examiner authorised under paragraph (2).

(4) An authorisation granted by the Director to a person who satisfies the provisions of paragraph (2) shall be subject to the following conditions—

- (a) that the authorisation shall only apply in respect of meters which have been manufactured or repaired, as the case may be, by the person by whom he was nominated under paragraph (1);

- (b) that, where regulation 9 applies, he shall examine and test not less than the number of meters selected in accordance with a sampling procedure determined by the Director having regard to national or international sampling procedures or plans;
 - (c) that he shall send to the Director not more than seven days after the expiry of each month a report stating the number of meters which have been submitted to him in accordance with regulation 6 and the number of meters in respect of which a certificate has been issued under regulation 7 or 9 during the preceding month; and
 - (d) that he shall retain a copy of each certificate issued by him for a period of not less than one year from the date of issue and shall produce the copy to the Director if requested to do so.
- (5) An authorisation under this regulation may be terminated at any time by the Director upon giving not less than 28 days notice to the authorised person if—
- (a) he is in breach of any condition of his authorisation and, in the case of a breach which is capable of being remedied, has failed to remedy that breach as soon as reasonably practicable after notice has been given to him by the Director specifying the breach;
 - (b) he fails to exercise proper care and attention in performing his functions under regulation 7 or 9; or
 - (c) he is unable, otherwise than temporarily, to perform his functions under regulation 7 or 9.
- (6) Where—
- (a) a person nominated under paragraph (1) and authorised under paragraph (2) is temporarily unable for any reason to act as an authorised examiner;
 - (b) the person by whom he was nominated has nominated another person under paragraph (1) who has been authorised under paragraph (2); and
 - (c) the person referred to in sub-paragraph (a) of this paragraph is again able to act as an authorised examiner,

the Director may give not less than 28 days notice in writing to the authorised person referred to in sub-paragraph (b) of this paragraph terminating his authorisation.

Application for certification

6.—(1) A person who requires a meter to be certified for the purposes of the Act may submit the meter to an authorised examiner who is authorised to certify a meter submitted by that person, or to a meter examiner.

(2) Each meter which is submitted for certification in accordance with regulation 9 shall be accompanied by a report verified and signed by the person in charge of manufacture or repair, as the case may be, or by a person nominated by him.

(3) A report for the purpose of paragraph (2) shall contain the statements and information specified in Schedule 2 including, where that meter is designed to operate with a transformer, the statements and information relating to the transformer.

Procedure for certification

7.—(1) Subject to regulation 9, a meter which is submitted to a meter examiner or an authorised examiner shall not be certified by him unless, in addition to being satisfied as required by paragraph 5(2)(a) of Schedule 7 to the Act that the meter is of an approved pattern or construction, he is satisfied—

- (a) either that the meter has been tested in accordance with the provisions of Schedule 3, conforms to the standards described in that Schedule and can reasonably be expected to operate within the permitted margins of error for not less than the certification period, or

that it has been tested in accordance with and conforms to one of the equivalent European provisions; and

(b) that it has been sealed in accordance with directions.

(2) The permitted margins of error shall be an error not exceeding plus 2.5 per cent. or minus 3.5 per cent. at any load at which the meter is designed to operate.

(3) Where the examiner is satisfied that a meter complies with paragraph (1), he shall issue a certificate of compliance specifying the serial number of the meter, and thereupon that meter shall be a meter certified for the purpose of the Act.

(4) Each certificate under paragraph (3) shall be numbered in the sequence in which it is issued.

Equivalent European provisions

8.—(1) Equivalent European provisions are—

- (a) the provisions as to verification in Council Directive [76/891/EEC](#)(8) as amended by Commission Directive No.[82/621/EEC](#)(9) and Protocol 1 and Part IX of Annex II to the EEA Agreement;
- (b) European Standard EN 61036:1996(10); and
- (c) any standard, technical regulation, manufacturing method or code of practice accepted by other EEA States conformity with which will ensure a level of precision, security, safety, durability and fitness for purpose equivalent to that assured by conformity to Schedule 3.

(2) A meter examiner or an authorised examiner to whom a meter has been submitted under regulation 6 shall take into account the results of the tests carried out by the bodies and laboratories of other EEA States where such bodies and laboratories conform with European Standard EN 45001:1989(11).

Batch certification

9. Where—

- (1) a number of meters have been submitted to a meter examiner or an authorised examiner at the same time by the same person;
- (2) that person is a public electricity supplier, an authorised manufacturer or an authorised repairer;
- (3) each meter is of an approved pattern or construction and is accompanied by the report referred to in regulation 6(2); and
- (4) the examiner has examined and tested a sufficient number of the meters to satisfy himself that it provides a reasonable test of all of them,

he may issue a certificate in respect of all the meters so submitted to him specifying or identifying the serial number of each meter and including all the information contained in the report submitted under regulation 6(2) and thereupon each of those meters shall be a meter certified for the purpose of the Act.

(8) OJ No. L336, 4.12.76, p.30.

(9) OJ No. L252, 27.8.82, p.1.

(10) EN 61036:1996, which has the status of a British Standard, is a European Standard entitled “Alternating current static watt-hour meters for active energy (classes 1 and 2)” and is published by the British Standards Institution.

(11) EN 45001:1989, which has the status of a British Standard, is a European Standard entitled “General criteria for the operation of testing laboratories” and is published by the British Standards Institution.

Duration of certification

10. A meter certified or deemed to be certified for the purpose of the Act shall cease to be so certified or deemed to be so certified—

- (1) if the approval of the pattern or construction of the meter is revoked;
- (2) if it is or becomes installed in a manner which is not an approved manner of installation;
- (3) if any alteration is made to the meter;
- (4) if the meter ceases to operate within the permitted margins of error;
- (5) subject to paragraph (6), at the expiry of its certification period; or
- (6) if the meter is of a type specified in columns 1 to 6 of Schedule 4 and is immediately before the coming into force of these Regulations certified for the purpose of the Act and the effect of paragraph (5) would be to cause the meter to cease to be certified sooner than if these Regulations had not been made, on the expiration of two years from the coming into force of these Regulations or at the expiry of the certification period, whichever is the later.

Fees

11.—(1) Any person who submits a meter for certification under regulation 6 shall pay to the Director in accordance with paragraph (3)—

- (a) in respect of each meter submitted for certification by a meter examiner a fee of 34 pence; or
- (b) in respect of each meter submitted for certification by an authorised examiner a fee of 18 pence.

(2) A person who has submitted a meter to a meter examiner or an authorised examiner under regulation 6 shall, within seven days after the last day of each month in which he does so, deliver to the Director a statement of the number of meters which he has submitted during the preceding month.

(3) A person who has submitted the statement referred to in paragraph (2) shall, within thirty days of the delivery of the statement, pay to the Director a fee calculated in accordance with paragraph (1) in respect of the meters referred to in that statement.

Revocation

12. The Meters (Certification) Order 1987(12) and the Meters (Certification) Regulations 1990(13) are revoked.

2nd June 1998

S. C. Littlechild,
Director General of Electricity Supply

(12) S.I. 1987/730

(13) S.I. 1990/792

I consent

24th June 1998

John Battle,
Minister for Science, Energy and Industry,
Department of Trade and Industry

SCHEDULE 1

Regulations 3(2)(c) and 4(2)(d)

AUTHORISED MANUFACTURERS' AND AUTHORISED REPAIRERS' TESTS AND TESTING METHODS FOR ALTERNATING CURRENT WATTHOUR METERS

Pre-heating

1.—(1) The following tests shall not be carried out until the voltage circuits of meters under test and the voltage circuits of working standard integrating meters have been energised for a period of one hour or half an hour if a current of not less than either 10 per cent. of basic current or 5 per cent. of marked current is applied to the current circuits of the meters, provided that the non-registration and starting current tests may be carried out during the pre-heating period.

(2) Sub-paragraph (1) shall not apply to a meter which the examiner is satisfied is capable of full operation as soon as it is energised.

Non-registration test

Induction meters

Induction meters

2.—(1) Induction meters shall be tested to ensure that when the current circuits are open and a voltage of 110 per cent. of the declared system voltage is applied to the voltage circuits, rotors cease to rotate before completing one revolution.

Static meters

(2) Static meters shall be tested for non-registration by one of the following methods—

Method 1

(a) (i) When subjected to the test conditions specified in paragraph 2(1), the meter shall not emit more than one output pulse over the minimum test period determined in paragraph (ii);

(ii) the minimum test period shall be computed by the formula—

$$t > 480 \times 10^6 \text{ minutes} \frac{k \cdot m \cdot V}{I_m}$$

where

- t = minimum test period
- K = number of pulses per kWh emitted by the meter
- m = number of elements
- V = declared system voltage
- I_m = maximum rated current.

For transformer-operated meters, k and I_m must either both relate to primary values or both relate to secondary values.

Method 2

(b) When static meters are fitted with inhibiting circuits, they may be tested for non-registration with a current which is less than the threshold current in respect of a meter of that type and at a voltage of 100 per cent. of the declared system voltage of the meters under test. Meters shall not emit more than one output pulse over the minimum test period determined as follows—

$$t = 126000 \text{ minutes} \frac{V \times I \times k \times pf}{I_m}$$

Status: This is the original version (as it was originally made).

where

- t = minimum test period
- V = declared system voltage
- I = total current of all phases
- k = number of pulses emitted per kWh by the meter
- pf = power factor.

Method 3

- (c) The period calculated for method 1 or method 2 may be halved if the meters under test do not emit any output pulses during the period of the test.

Accuracy tests

3.—(1) Apparatus used for determining the errors of repaired meters during these tests shall comply with directions.

(2) The rate of advance of a meter over a test period shall be obtained by reading the electro-mechanical register or electronic display on or connected to the meter or by monitoring the rotation of the disc or pulse output of the meter.

(3) For any test load, the load applied to a working standard integrating meter shall not be less than 25 per cent. or more than 125 per cent. of its full load rating.

(4) For a working standard wattmeter, the applied load shall not be less than 40 per cent. or more than 100 per cent. of its full scale or range reading.

Methods of accuracy test

4. The tests in table 2 shall be carried out by one of the following methods—

Method A test

- (1) A long period dial test where the advance of a kWh display, which is part of or connected to a meter under test, is compared with the advance of a precision kilowatt-hour meter;

Method B test

- (2) A short period test where the rate of advance of a meter under test is compared to the rate of advance of a precision kilowatt-hour meter; or

Method C test

- (3) A short period test where the actual rate of advance of a meter, when tested under constant power conditions over a specified test period, is compared to the calculated rate of advance for those conditions.

Reference conditions for all testing

5.—(1) All tests shall be carried out under the reference conditions specified in table 1.

Meter position

(2) The meter position requirement given in table 1 applies to induction meters only. Tolerance applies to a horizontal reference line or edge on the meter, such as the lower edge of the terminal block.

Voltage and current supplies for polyphase meters

(3) When testing polyphase meters—

- (a) the order of the phases shall correspond to the sequence shown on the connection diagram;

- (b) the voltages shall be balanced so that the voltage between any line and neutral or between any two lines shall not differ by more than 1.5 per cent. from the mean of the corresponding voltages;
- (c) the currents shall be balanced so that the current in any conductor shall not differ by more than 2.5 per cent. from the mean of these currents; and
- (d) the phase displacement between the current and corresponding phase to neutral voltage shall not differ from other current and voltage phase displacements by more than 3 degrees at any power factor under any load conditions specified in table 2.

External magnetic induction

(4) The test given in table 1 in respect of external magnetic induction shall be carried out during commissioning or after major modification or refurbishing of a meter testing system. The test is carried out at 0.1 Ib unity power factor with the meters normally connected to determine the errors—

- (a) for single phase meters, after reversing both current and voltage connections, for which half the difference between the two errors is the value of the variation;
- (b) for polyphase meters, by making two additional measurements after each of the connections to the current circuits and to the voltage circuits are changed over 120 degrees but with the phase sequence unaltered, for which the greatest difference between each error determined and the mean of the three errors is the value of the variation.

Dial tests

(5) Where all the errors of repaired meters are determined by the method B or method C test, an additional test in accordance with method A shall be carried out. The method A test shall be carried out at one of the loads used for the method B or method C test. The error obtained by the method A test shall not differ by more than 0.6 per cent. from the error obtained at the same load value by the method B or method C test.

Duration of test

(6) The tests described in paragraph 4 shall continue until the error of meters can be calculated within a tolerance not greater than plus or minus 0.2 per cent.

Conditions for mixing methods of test

(7) The method A test may be used for intermediate and high loads, at unity power factor and at 0.5 power factor, and the method B or method C test for the low load, provided that an additional method B or method C test is carried out at one of the test load values used for the method A test.

Test loads

6.—(1) Every repaired meter shall be tested at each of the loads specified in table 2, except that test number 2 in that table may be omitted.

(2) Every new meter shall be calibrated and tested at a sufficient number of load points so as to ensure that meter errors are not greater than the limits specified in paragraph 9.

(3) A test for starting shall also be carried out on new meters in accordance with test number 7 of table 2.

(4) The ratio errors shall be determined for voltage transformers that are intended for use with meters but are not tested with a meter.

(5) Current transformers intended for use with meters but not tested with a meter shall be tested from 5 per cent. to 120 per cent. of rated current.

Multi-register meters*Induction meters**Induction meters*

- (a) 7. (1) (a) All induction meters with more than one register shall be tested on one register in accordance with paragraphs 5 and 6 and on each and every other register at a low load using the method A, method B or method C test and at an intermediate or high load using the method A test.
- (b) For the same load conditions the maximum permitted difference between the error on one register, expressed as a percentage, and the error on any other register, expressed as a percentage, is 1 per cent.

Static meters

- (a) (2) (a) All static meters with more than one register shall be tested on one register in accordance with paragraphs 5 and 6.
- (b) For repaired static meters with more than one register—
- (i) where the total units are the sum of all the registers, a further test shall be carried out on each and every other register using method A but
 - (ii) where the total units are recorded on one register, only that register is required to be tested in accordance with paragraphs 5 and 6.

Polyphase meters

8.—(1) Every polyphase meter shall be tested on a circuit having a phase relationship for which that meter is designed, provided that three phase, four wire polyphase meters may be tested without current in the neutral conductor.

- (2) Polyphase meters shall be tested by using —
- (a) a polyphase kilowatt-hour energy standard;
 - (b) 2 or 3 single phase kilowatt-hour energy standards; or
 - (c) 2 or 3 single phase wattmeters.

Margins of error

- 9.—(1) The error permitted for—
- (a) single phase and polyphase whole current meters and
 - (b) single phase and polyphase transformer operated meters when tested with transformers connected

shall not exceed plus or minus 1.5 per cent. for test numbers 1, 2, 3 and 4 given in table 2.

(2) The error permitted for both single phase and polyphase transformer operated meters, when tested without transformers connected, shall not exceed plus or minus 1.0 per cent. for test numbers 1, 2, 3 and 4 given in table 2.

(3) The error permitted for polyphase whole current and transformer operated meters, when tested with transformers connected, shall not exceed plus 1.7 per cent. or minus 2.7 per cent. for test numbers 5 and 6 given in table 2.

(4) The error permitted for polyphase transformer operated meters, when tested without transformers connected, shall not exceed plus 1.2 per cent. or minus 2.2 per cent. for test numbers 5 and 6 given in table 2.

(5) Where current and voltage transformers are intended to be used with meters and are not tested connected to a meter then the error of the transformers at any load point throughout the rated range shall not exceed 0.5 per cent.

Insulation property test

10. Each meter shall be tested to demonstrate that the insulation of the meter is of a sufficient standard to enable the meter to operate safely and correctly in the conditions in which it could reasonably be expected to be installed and operated.

TABLE 1

<i>Influence quantities</i>	<i>Reference value</i>	<i>Tolerance</i>
Ambient temperature	Reference temperature or, if not indicated, 23°C.	>15°C to <30°C
Meter position	Vertical	±3°
Voltage	Reference voltage	±1.5%
Frequency	Reference frequency of 50Hz	±0.5%
Voltage and current waveform	Sinusoidal form	Distortion factor <5%
External magnetic induction at the reference frequency (paragraph 5(4))	Zero	Induction value that does not produce a relative error variation of more than ±0.3%

TABLE 2

<i>Test number and load</i>	<i>Power factor</i>	<i>Test load in terms of marked current</i>				<i>Meter type</i>	<i>Polyphase meter load</i>
		<i>Basic/maximum</i>	<i>Maximum continuous</i>	<i>Long range</i>	<i>Short range</i>		
1 (high)	1	I _{max}	100%	100%–200% (Note 1)	100%–125% (Note 1)	Single and polyphase	Balanced
2 (intermediate)	1	I _b or 125%I _b	Any load between 25%–75% of the value specified for test number 1 (Note 1)			Single and polyphase	Balanced
3 (low)	1	5%I _b	1.67% (Note 2)	5%	5%	Single and polyphase	Balanced
4 (inductive)	0.5 (Note 3)	I _b or I _{max}	100%	The same value selected for test number 1		Single and polyphase	Balanced
5 (element)	1	I _b	100%	The same value selected for test number 1		Polyphase	One phase loaded in turn
6 (inductive)	0.5 (Note 3)	I _b	100%	The same value selected for test number 1		Polyphase	One phase loaded in turn

Status: This is the original version (as it was originally made).

<i>Test number and load</i>	<i>Power factor</i>	<i>Test load in terms of marked current</i>				<i>Meter type</i>	<i>Polyphase meter load</i>
		<i>Basic/ maximum</i>	<i>Maximum continuous</i>	<i>Long range</i>	<i>Short range</i>		
7 (starting-current)	1	0.5%I _b to 1.0%I _b	0.5% to 1.0%	0.5% to 1.0%	0.5% to 1.0%	Single and polyphase	Balanced

Note 1 Where a range is given, any value within that inclusive range may be selected.

Note 2 For maximum continuously rated prepayment meters, the low load test value may be twice the value shown.

Note 3 For test numbers 4 and 6, the inductive power factor shall be between 0.45 and 0.55 inclusive.

SCHEDULE 2

Regulation 6(3)

REPORT ON METER TESTS

1. In respect of each meter to which the report refers, a statement—
 - (1) that the meter referred to in the report is accurately described and as to whether it is a new or repaired meter;
 - (2) that the meter has been examined and tested in accordance with Schedule 1 or one of the equivalent European provisions;
 - (3) that the uncertainty of measurement was not greater than plus or minus 0.4 per cent. at unity power factor or greater than plus or minus 0.6 per cent. at 0.5 inductive power factor;
 - (4) that no meter error was greater than any error specified either in the relevant sub-paragraph of paragraph 9 of Schedule 1 or in one of the equivalent European provisions;
 - (5) that the meter did not register when energised on voltage only, whether with or without a current less than the threshold current; and
 - (6) as to whether paragraph 1(2) of Schedule 1 did or did not apply.
2. In respect of each meter to which the report refers, the following information—
 - (1) the name of the person responsible for the manufacture or repair of the meter;
 - (2) the name and address of the manufacturing unit or the repair unit where the meter was examined and tested;
 - (3) the number of the report and any identification marks impressed on the meter seals in accordance with the provisions of directions;
 - (4) the declared system voltage on which the meter is to be used;
 - (5) the make and type of the meter, stating the nominal frequency if other than 50Hz;
 - (6) the marked current and voltage rating of the meter; and
 - (7) the serial number of the meter.
3. A report may include the errors obtained at each test load and an end of test meter reading.
4. In the case of a meter intended for use with and tested with a transformer or transformers, the following additional information—

- (1) the make, output rating, serial number and classification of each transformer to be used with the meter;
 - (2) for a polyphase meter, the phase to which each transformer was connected; and
 - (3) particulars and electrical burdens of any other meter, instrument or external attachments that are to be used in conjunction with a transformer operated meter.
5. Where a transformer intended for use with a meter has been tested, a statement—
- (1) that the transformer referred to in the report is accurately described and as to whether it is a new or used transformer;
 - (2) that the transformer has been examined and tested in accordance with Schedule 1 or, in the case of a current transformer, with Harmonisation Document 553 S2(14) approved by the European Committee for Electrotechnical Standardization on 9th March 1993, or, in the case of a voltage transformer, with Harmonisation Document 554 S1(15) approved by that Committee on 24th March 1992;
 - (3) that the uncertainty of measurement was not greater than plus or minus 0.1 per cent; and
 - (4) that no transformer error was greater than plus or minus 0.5 per cent. at any load from 5 per cent. to 120 per cent. of full load when connected to the maximum rated burden or, if known, the working burden.
6. In a report for a transformer, the following information—
- (1) the name and address of the manufacturing unit or the repair unit where the transformer was examined and tested;
 - (2) the make and type of the transformer;
 - (3) the nominal frequency if other than 50Hz;
 - (4) the marked current or voltage ratio of the transformer and the working or maximum permissible burden that can be connected to the transformer; and
 - (5) the serial number of the transformer.
7. The meter or transformer errors obtained at each test load may also be included on these reports.
8. Before a meter is submitted for certification, the report on the meter and any transformer submitted with it shall be verified and signed by the person in charge of manufacture or repair, as the case may be, or by a person nominated by him.

SCHEDULE 3

Regulation 7(1)(a)

CERTIFICATION TESTS AND TESTING METHODS FOR ALTERNATING CURRENT WATTHOUR METERS

Pre-heating

1.—(1) The following tests shall not be carried out until the voltage circuits of meters under test and the voltage circuits of the working standard integrating meters have been energised for a period of one hour or half an hour if a current of not less than either 10 per cent. of basic current or 5 per cent. of marked current is applied to the current circuits of the meters, provided that the non-registration test may be carried out during the pre-heating period.

(14) Harmonisation Document 553 S2 is entitled “Current Transformers” and is published by the British Standards Institution.

(15) Harmonisation Document 554 S1 is entitled “Voltage Transformers” and is published by the British Standards Institution.

Status: This is the original version (as it was originally made).

(2) Sub-paragraph (1) shall not apply to a meter which the examiner is satisfied is capable of full operation as soon as it is energised.

Non-registration test

Induction meters

2.—(1) Induction meters shall be tested to ensure that when the current circuits are open and a voltage of 110 per cent. of the marked voltage is applied to the voltage circuits, rotors cease to rotate before completing one revolution.

Static meters

(2) Static meters shall be tested for non-registration by one of the following methods—

Method 1

- (a) (i) When subjected to the test conditions specified in paragraph 2(1), the meter shall not emit more than one output pulse over the minimum test period determined in paragraph (ii);
- (ii) the minimum test period shall be computed by the formula—

$$t > 480 \times 10^6 \text{ minutes} \frac{k \cdot m \cdot V \cdot I_m}{\dots}$$

where

- t = minimum test period
k = number of pulses per kWh emitted by the meter
m = number of elements
V = declared system voltage
I_m = maximum current.

For transformer-operated meters, k and I_m must either both relate to primary values or both relate to secondary values.

Method 2

- (b) When static meters are fitted with inhibiting circuits, they may be tested for non-registration with a current which is less than threshold current in respect of a meter of that type and at a voltage of 100 per cent. of the marked voltage of the meters under test. Meters shall not emit more than one output pulse over a minimum test period determined as follows—

$$t = 126000 \text{ minutes} \frac{V \times I \times k \times \text{pf}}{\dots}$$

where

- t = minimum test period
V = declared system voltage
I = total current of all phases
k = number of pulses per kWh emitted by the meter
pf = power factor.

Accuracy tests

3.—(1) Apparatus used for determining the errors of meters during these tests shall comply with directions.

(2) The rate of advance of a meter over a test period shall be obtained by reading the electro-mechanical register or electronic display on or connected to the meter or by monitoring the rotation of the disc or pulse output of the meter.

(3) For any test load applied to the meters under test, the load applied to a working standard integrating meter shall not be less than 25 per cent. or more than 125 per cent. of its full load rating.

(4) For a working standard wattmeter, the applied load shall not be less than 40 per cent. or more than 100 per cent. of its full scale or range reading.

Methods of accuracy test

4. The tests in table 2 shall be carried out by one of the following methods—

Method A test

(1) A long period dial test where the advance of a kWh display, which is part of or connected to a meter under test, is compared with the advance of a precision kilowatt-hour meter;

Method B test

(2) A short period test where the rate of advance of a meter under test is compared to the rate of advance of a precision kilowatt-hour meter; or

Method C test

(3) A short period test where the actual rate of advance of a meter, when tested under constant power conditions over a specified test period, is compared to the calculated rate of advance for those conditions.

Reference conditions for all testing

5.—(1) All tests shall be carried out under the reference conditions specified in table 1.

Ambient temperature

(2) Tests may be carried out at a temperature outside the temperature range given in table 1, but within the range 15 degrees centigrade to 30 degrees centigrade, provided that a correction is made in relation to the reference temperature by using the mean temperature co-efficient of the meters under test and the working standard meter(s) used for determining meter errors.

Meter position

(3) The meter position requirement given in table 1 applies to induction meters only. Tolerance applies to a horizontal reference line or edge on the meter, such as the lower edge of the terminal block.

Voltage and current supplies for polyphase meters

(4) When testing polyphase meters—

(a) the order of the phases shall correspond to the sequence shown on the connection diagram;

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- (b) the voltages shall be balanced so that the voltage between any line and neutral or between any two lines shall not differ by more than 1.5 per cent. from the mean of the corresponding voltages;
- (c) the currents shall be balanced so that the current in any conductor shall not differ by more than 2.5 per cent. from the mean of these currents; and
- (d) the phase displacement between the current and corresponding phase to neutral voltage shall not differ from other current and voltage phase displacements by more than 3 degrees at any power factor under any load condition specified in table 2.

External magnetic induction

(5) The test given in table 1 in respect of external magnetic induction shall be carried out during commissioning or after major modification or refurbishing of a meter testing system. The test is carried out at 0.1 Ib unity power factor with the meters normally connected to determine the errors—

- (a) for single phase meters, after reversing both current and voltage connections, for which half the difference between the two errors is the value of the variation;
- (b) for polyphase meters, by making two additional measurements after each of the connections to the current circuits and to the voltage circuits are changed over 120 degrees but with the phase sequence unaltered, for which the greatest difference between each error determined and the mean of the three errors is the value of the variation.

Dial tests

(6) Where all the errors of meters are determined by the method B or method C test, an additional test in accordance with method A shall be carried out. The method A test shall be carried out at one of the loads used for the method B or method C test. The error obtained by the method A test shall not differ by more than 0.6 per cent. from the error obtained at the same load value by the method B or method C test.

Duration of test

(7) The tests described in paragraph 4 shall continue until the error of meters can be calculated within a tolerance of not greater than plus or minus 0.2 per cent.

Conditions for mixing methods of test

(8) The method A test may be used for intermediate and high loads, at unity power factor and at 0.5 power factor, and the method B or method C test for the low load, provided that an additional method B or method C test is carried out at one of the test load values used for the method A test.

Test loads

- 6.—(1) Every meter shall be tested at each of the loads specified in table 2.
- (2) The ratio errors shall be determined for voltage transformers intended for use with meters but not tested with a meter.
- (3) Current transformers intended for use with meters but not tested with a meter shall be tested from 5 per cent. to 120 per cent. of rated current.

Multi-register meters

Induction meters

- (a) 7. (1) (a) All induction meters with more than one register shall be tested on one register in accordance with paragraphs 5 and 6 and on each and every other register at a low load using the method A, method B or method C test and at an intermediate or high load using the method A test.
- (b) For the same load conditions the maximum permitted difference between the error on one register, expressed as a percentage, and the error on any other register, expressed as a percentage, is 1 per cent.
- (c) Every register change mechanism shall be tested for correct operation with an applied voltage of 90 per cent. of the declared system voltage.

Static meters

- (a) (2) (a) All static meters with more than one register shall be tested on one register in accordance with paragraphs 5 and 6.
- (b) On static meters with more than one register—
 - (i) where the total units are the sum of all the registers, a further test shall be carried out on each and every other register using method A but
 - (ii) where the total units are recorded on one register, only that register is required to be tested in accordance with paragraphs 5 and 6.

Polyphase meters

8.—(1) Every polyphase meter shall be tested on a circuit having a phase relationship for which that meter is designed, provided that three phase, four wire polyphase meters may be tested without current in the neutral conductor.

- (2) Polyphase meters shall be tested by using—
 - (a) a polyphase kilowatt-hour energy standard;
 - (b) 2 or 3 single phase kilowatt-hour energy standards; or
 - (c) 2 or 3 single phase wattmeters.

Margins of error

- 9.—(1) The error permitted for—
 - (a) single phase and polyphase whole current meters and
 - (b) single phase and polyphase transformer operated meters when tested with transformers connected

shall not exceed plus or minus 1.9 per cent. for test numbers 1, 2, 3 and 4 in table 2.

(2) The error permitted for both single phase and polyphase transformer operated meters, when tested without transformers connected, shall not exceed plus or minus 1.4 per cent. for test numbers 1, 2, 3 and 4 given in table 2.

(3) The error permitted for polyphase whole current meters and transformer operated meters, when tested with transformers connected, shall not exceed plus 2 per cent. or minus 3 per cent. for test numbers 5 and 6 given in table 2.

(4) The error permitted for polyphase transformer operated meters, when tested without transformers connected, shall not exceed plus 1.5 per cent. or minus 2.5 per cent. for test numbers 5 and 6 given in table 2.

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(5) Where current and voltage transformers are intended to be used with meters and are not tested connected to a meter then the error of the transformers at any load point throughout the rated range shall not exceed 0.5 per cent.

TABLE 1

<i>Influence quantities</i>	<i>Reference value</i>	<i>Tolerance</i>
Ambient temperature	Reference temperature or, if not indicated, 23°C.	±2°
Meter position	Vertical	±3°
Voltage	Reference voltage	±1.5%
Frequency	Reference frequency of 50Hz	±0.5%
Voltage and current waveform	Sinusoidal form	Distortion factor <5%
External magnetic induction at the reference frequency (paragraph 5(5))	Zero	Induction value that does not produce a relative error variation of more than ±0.3%

TABLE 2

<i>Test number and load</i>	<i>Power factor</i>	<i>Test load in terms of marked current</i>				<i>Meter type</i>	<i>Polyphase meter load</i>
		<i>Basic/ maximum</i>	<i>Maximum continuous</i>	<i>Long range</i>	<i>Short range</i>		
1 (high)	1	I _{max}	100%	100%–200% (Note 1)	125% (Note 1)	Single and polyphase	Balanced
2 (intermediate)	1	I _b or 125%I _b	Any load between 25%–75% of the value specified for test number 1 (Note 1)			Single and polyphase	Balanced
3 (low)	1	5%I _b	1.67% (Note 2)	5%	5%	Single and polyphase	Balanced
4 (inductive)	0.5 (Note 3)	I _b or I _{max}	100%	The same value selected for test number 1		Single and polyphase	Balanced
5 (element)	1	I _b	100%	The same value selected for test number 1		Polyphase	One phase loaded in turn
6 (inductive) (element)	0.5 (Note 3)	I _b	100%	The same value selected for test number 1		Polyphase	One phase loaded in turn

Note 1 Where a range is given, any value within that inclusive range may be selected.

Note 2 For maximum continuously rated prepayment meters, the low load test value may be twice the value shown.

Note 3 For test numbers 4 and 6, the inductive power factor shall be between 0.45 and 0.55 inclusive.

SCHEDULE 4

Regulations 2(1) and 10(6)

CERTIFICATION PERIODS

In the table below—

* indicates that the meter is designed for use on a 1, 2 or 3 phase supply

@ indicates that the meter is designed for use on a 3 or 4 wire supply

indicates that the meter is designed for use on a 2, 3 or 4 wire supply

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
ABB						
M81	1	2	1	Single	846	10
T81	3	4	3	Single	845	10
PM2	3	3	2	Multi	880	10
PM3	*	@	3	Multi	879	10
Ampy						
5028	1	2	1	Multi	789	10
5028L	1	2	1	Multi	820	10
5054	1	2	2	Multi	824	10
5054C	1	2	2	Multi	814	10
5056	1	2	1	Multi	817	10
5057	*	@	3	Multi	866	10
5071	1	2	1	Multi	853	10
5077	1	2	1	Multi	860	10
Aron						
eI	1	2	1	Single	334	15
eN	1	2	1	Single	465	15
G13	1	3	2	Single	442	15
G13P	1	3	2	Single	442	10
G23	2	3	2	Single	442	15
G23P	2	3	2	Single	442	10
G24	2	4	2	Single	442	15
G24P	2	4	2	Single	442	10
G33	3	3	3	Single	442	15
G33P	3	3	2	Single	442	10
G34	3	4	3	Single	442	15

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<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
G34P	3	4	3	Single	448	10
GM13	1	3	2	Single	448	15
GM13P	1	3	2	Single	448	10
GM23	2	3	2	Single	448	15
GM23P	2	3	2	Single	448	10
GM24	2	4	2	Single	448	15
GM24P	2	4	2	Single	448	10
GM33	3	3	2	Single	448	15
GM33P	3	3	2	Single	448	10
GM34	3	4	3	Single	448	15
GM34P	3	4	3	Single	448	10
GTM13	1	3	2	Single	448	15
GTM13P	1	3	2	Single	448	10
GTM23	2	3	2	Single	448	15
GTM23P	2	3	2	Single	448	10
GTM24	2	4	2	Single	448	15
GTM24P	2	4	2	Single	448	10
GTM33	3	3	2	Single	448	15
GTM33P	3	3	2	Single	448	10
GTM34	3	4	3	Single	448	15
GTM34P	3	4	3	Single	448	10
CEWE						
2243	3	3	2	Multi	841	10
2343	3	4	3	Multi	839	10
3243	3	3	2	Multi	842	10
3343	3	4	3	Multi	840	10
CE	3	3	2	Single	796	10
CE	3	3	2	Single	791	10
CE	3	4	3	Single	795	10
CE	3	4	3	Single	790	10
Chamberlain & Hookham						
K	1	2	1	Single	338	15

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
PT2	*	@	2	Single	462	15
PT2D	*	@	2	Single	462	10
PT4	3	4	3	Single	462	20
PT4D	3	4	3	Single	462	10
Dennis Ferranti						
B1V7	1	2	1	Multi	864	10
TM3c	1	2	1	Single	481	20
EE/GEC						
B31B	1	2	1	Single	358	15
C11B	1	2	1	Single	603	20
C11B-D	1	2	1	Single	615	10
C11B-D/M	1	2	1	Single	615	10
C11B-DR	1	2	1	Multi	615	10
C11B-DR/ M	1	2	1	Multi	615	10
C11B-R	1	2	1	Multi	613	10
C11B-R/M	1	2	1	Multi	613	20
C11B/M	1	2	1	Single	627	25
C11B2	1	2	1	Single	628	20
C11B2-D	1	2	1	Single	637	10
C11B2-DR	1	2	1	Multi	637	10
C11B2-R	1	2	1	Multi	628	20
C11B2A	1	2	1	Single	628	20
C11B2A-R	1	2	1	Multi	628	15
C11B2C	1	2	1	Single	632	10
C11B2C-R	1	2	1	Multi	632	10
C11B3	1	2	1	Single	847	10
C11B3C	1	2	1	Single	848	10
C21B	1	2	1	Single	577	20
C21B-R	1	2	1	Multi	585	10
C21B-R/M	1	2	1	Multi	585	15
C21B/M	1	2	1	Single	577	20

Status: This is the original version (as it was originally made).

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
C31B	1	2	1	Single	509	20
C31B-D	1	2	1	Single	524	10
C31B-D/M	1	2	1	Single	524	10
C31B-DR	1	2	1	Multi	580	10
C31B-DR/ M	1	2	1	Multi	580	10
C31B-R	1	2	1	Multi	503	15
C31B-R/M	1	2	1	Multi	503	15
C31B/M	1	2	1	Single	509	25
CM1	1	2	1	Multi	764	10
CM2	1	2	1	Multi	783	10
CM4	1	2	1	Multi	793	10
CM5	1	2	1	Multi	794	10
CM6	1	2	1	Multi	812	10
CM7	1	2	1	Multi	813	10
D42B	*	@	2	Single	494	15
D42B-D	*	@	2	Single	510	10
D42B-D/M	*	@	2	Single	510	10
D42B-DR	*	@	2	Multi	510	10
D42B-DR/ M	*	@	2	Multi	510	10
D42B-R	*	@	2	Multi	507	10
D42B-R/M	*	@	2	Multi	507	10
D42B/M	*	@	2	Single	494	15
D42BC	*	@	2	Single	570	15
D42BC-D	*	@	2	Single	570	10
D42BC-D/ M	*	@	2	Single	570	10
D42BC/M	*	@	2	Single	570	15
D42F	*	@	2	Single	497	15
D42F-D	*	@	2	Single	510	10
D42F-D/M	*	@	2	Single	510	10
D42F-DR	*	@	2	Multi	510	10

Status: This is the original version (as it was originally made).

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
D42F-DR/ M	*	@	2	Multi	510	10
D42F-R	*	@	2	Multi	507	10
D42F-R/M	*	@	2	Multi	507	10
D42F/M	*	@	2	Single	497	15
D43B	3	4	3	Single	495	15
D43B-R	3	4	3	Multi	495	10
D43B-R/M	3	4	3	Multi	495	10
D43B/M	3	4	3	Single	495	15
D43F	3	4	3	Single	548	15
D43F/M	3	4	3	Single	548	15
E42B	*	@	2	Single	590	15
E42B-D	*	@	2	Single	592	10
E42B-D/M	*	@	2	Single	592	10
E42B-DR	*	@	2	Multi	594	10
E42B-DR/ M	*	@	2	Multi	594	10
E42B-R	*	@	2	Multi	594	10
E42B-R/M	*	@	2	Multi	594	10
E42B/M	*	@	2	Single	590	15
E42B2	*	@	2	Single	645	15
E42B2-D	*	@	2	Single	649	10
E42B2-DR	*	@	2	Multi	651	10
E42B2-R	*	@	2	Multi	647	10
E42B3	*	@	2	Single	510	15
E42B3-D	*	@	2	Single	510	10
E42B3-DR	*	@	2	Multi	510	10
E42B3-R	*	@	2	Multi	510	10
E42B4	*	@	2	Single	510	15
E42B4-D	*	@	2	Single	510	10
E42B4-DR	*	@	2	Multi	510	10
E42B4-R	*	@	2	Multi	510	10
E42BC	*	@	2	Single	597	15

Status: This is the original version (as it was originally made).

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
E42BC-D	*	@	2	Single	600	10
E42BC-D/ M	*	@	2	Single	600	10
E42BC/M	*	@	2	Single	597	10
E42C-2D	*	@	2	Single	619	10
E42C-2D/ M	*	@	2	Single	619	10
E42C-2DR	*	@	2	Multi	620	10
E42C-2DR/ M	*	@	2	Multi	620	10
E42F	*	@	2	Single	602	15
E42F-D	*	@	2	Single	622	10
E42F-D/M	*	@	2	Single	622	10
E42F-DR	*	@	2	Multi	623	10
E42F-DR/ M	*	@	2	Multi	623	10
E42F-R	*	@	2	Multi	623	10
E42F-R/M	*	@	2	Multi	623	10
E42F3	*	@	2	Single	510	15
E42F3-D	*	@	2	Single	510	10
E42F3-DR	*	@	2	Multi	510	10
E42F3-R	*	@	2	Multi	510	10
E42F4	*	@	2	Single	510	15
E42F4-D	*	@	2	Single	510	10
E42F4-DR	*	@	2	Multi	510	10
E42F4-R	*	@	2	Multi	510	10
E43B	3	4	3	Single	591	15
E43B-D	3	4	3	Single	595	10
E43B-D/M	3	4	3	Single	595	15
E43B-DR	3	4	3	Multi	595	10
E43B-DR/ M	3	4	3	Multi	595	10
E43B-R	3	4	3	Multi	595	10
E43B-R/M	3	4	3	Multi	595	10

Status: This is the original version (as it was originally made).

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
E43B/M	3	4	3	Single	591	20
E43B2	3	4	3	Single	644	15
E43B2-D	3	4	3	Single	646	10
E43B2-DR	3	4	3	Multi	646	10
E43B2-R	3	4	3	Multi	646	10
E43B3	3	4	3	Single	749	15
E43B3-D	3	4	3	Single	749	10
E43B3-DR	3	4	3	Multi	749	10
E43B3-R	3	4	3	Multi	591	10
E43B4	3	4	3	Single	749	15
E43B4-D	3	4	3	Single	749	10
E43B4-DR	3	4	3	Multi	749	10
E43B4-R	3	4	3	Multi	591	10
E43C-2D	3	4	3	Single	617	10
E43C-2D/ M	3	4	3	Single	617	10
E43C-2DR	3	4	3	Multi	618	10
E43C-2DR/ M	3	4	3	Multi	618	10
E43F	3	4	3	Single	621	15
E43F-D	3	4	3	Single	623	10
E43F-DR	3	4	3	Multi	623	10
E43F-R	3	4	3	Multi	623	10
E43F3	3	4	3	Single	749	15
E43F3-D	3	4	3	Single	749	10
E43F3-DR	3	4	3	Multi	749	10
E43F3-R	3	4	3	Multi	591	10
E43F4	3	4	3	Single	749	15
E43F4-D	3	4	3	Single	749	10
E43F4-DR	3	4	3	Multi	749	10
E43F4-R	3	4	3	Multi	749	10
EP2	3	3	2	Multi	849	10
EP2J	3	3	2	Multi	850	10

Status: This is the original version (as it was originally made).

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
EP3	*	#	3	Multi	851	10
EP3J	*	#	3	Multi	852	10
HA1	1	2	1	Single	773	10
HA1	1	2	1	Multi	773	10
LSA01-001	3	4	3	Single	771	10
LSA02-001	3	4	3	Single	786	10
LSA02-002	3	4	3	Single	772	10
PM1	1	2	1	Multi	800	10
PM2	3	3	2	Multi	832	10
PM3	*	#	3	Multi	833	10
SC2B	1	2	1	Multi	843	10
TM1	1	2	1	Multi	809	10
TM2	1	2	2	Multi	810	10
UVE	1	2	1	Single	310	10
Ferranti/ FML/ Siemens						
F2K-100	1	2	1	Single	677	20
F2K-100-2	1	2	1	Multi	681	15
F2K-100H- 9	1	2	1	Single	871	10
F2K-100I	1	2	1	Single	688	20
F2K-100I- 2	1	2	1	Multi	688	15
F2K-100L	1	2	1	Single	685	20
F2K-100L- 2	1	2	1	Multi	685	15
F2K-11B	1	2	1	Single	703	20
F2K-11B-2	1	2	1	Multi	713	10
F2K-500	1	2	1	Single	710	10
F2K-500C	1	2	1	Single	717	10
F2K-500C- 2	1	2	1	Multi	717	10
F2K-500C- 9	1	2	1	Multi	717	10

Status: This is the original version (as it was originally made).

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
F2K-500D	1	2	1	Multi	736	10
F2K-500D- 2	1	2	1	Multi	743	10
F2K-500D- 9	1	2	1	Multi	743	10
F2K-50B	1	2	1	Single	702	10
F2Q-100	1	2	1	Single	630	20
F2Q-10D	1	2	1	Single	672	10
F2Q-10W	1	2	1	Multi	668	10
F2Q-11B	1	2	1	Single	638	20
F2Q-11D	1	2	1	Single	673	10
F3K-100	*	@	2	Single	705	15
F3K-100-2	*	@	2	Multi	705	10
F3K-100I	*	@	2	Single	730	15
F3K-100I-2	*	@	2	Multi	730	10
F3K-100L	*	@	2	Single	705	15
F3K-100L- 2	*	@	2	Multi	729	10
F3K-10B	*	@	2	Single	734	15
F3K-10B-2	*	@	2	Multi	734	10
F3K-11B	*	@	2	Single	733	15
F3K-11B-2	*	@	2	Multi	733	10
F3K-11BL	*	@	2	Single	733	15
F3K-11BL- 2	*	@	2	Multi	733	15
F4K-100	3	4	3	Single	695	15
F4K-100-2	3	4	3	Multi	704	10
F4K-100I	3	4	3	Single	730	15
F4K-100I- 2	3	4	3	Multi	730	10
F4K-100L	3	4	3	Single	729	15
F4K-100L- 2	3	4	3	Multi	729	10
F4K-10B	3	4	3	Single	712	15

Status: This is the original version (as it was originally made).

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
F4K-10B-2	3	4	3	Multi	712	10
F4K-10BI	3	4	3	Single	730	15
F4K-10BI- 2	3	4	3	Multi	730	10
F4K-10BL	3	4	3	Single	729	15
F4K-10BL- 2	3	4	3	Multi	729	10
F4K-11B	3	4	3	Single	696	15
F4K-11B-2	3	4	3	Multi	704	10
F4K-11BI	3	4	3	Single	730	15
F4K-11BI- 2	3	4	3	Multi	730	10
F4K-11BL	3	4	3	Single	729	15
F4K-11BL- 2	3	4	3	Multi	729	10
FM	1	2	1	Single	323	15
FMm	1	2	1	Single	342	15
FMMD	1	2	1	Single	443	10
FMmMD	1	2	1	Single	443	10
FMmP	1	2	1	Single	364	10
FMmP2	1	2	1	Single	402	10
FMmX	3	4	3	Single	415	15
FMmXT	3	4	3	Single	415	15
FMmY	*	@	2	Single	414	15
FMmYT	*	@	2	Single	414	15
FMP	1	2	1	Single	350	10
FMP2	1	2	1	Multi	406	10
FMQ	1	2	1	Single	549	20
FMT	1	2	1	Multi	455	10
FMX	3	4	3	Single	415	20
FMXa	3	4	3	Single	488	15
FMXaT	3	4	3	Multi	518	10
FMXMD	3	4	3	Single	434	10
FMXMDR2	3	4	3	Multi	667	10

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
FMXT	3	4	3	Multi	457	10
FMY	*	@	2	Single	414	15
FMYMDR2	*	@	2	Multi	667	10
FN12	1	2	1	Single	527	20
FN12D	1	2	1	Single	553	10
FN12P	1	2	1	Single	535	10
FN12PF	1	2	1	Single	536	10
FN12Q	1	2	1	Single	528	20
FN12QD	1	2	1	Single	579	10
FN12QP	1	2	1	Single	541	10
FN12QPF	1	2	1	Single	542	10
FN12R2	1	2	1	Multi	549	10
FN33	*	@	2	Single	540	15
FN33D	*	@	2	Single	666	10
FN33Q	*	@	2	Single	540	15
FN33QR2	*	@	2	Multi	552	10
FN33R2	*	@	2	Multi	552	10
FN34	3	4	3	Single	538	15
FN34D	3	4	3	Single	554	10
FN34DR2	3	4	3	Multi	666	10
FN34Q	3	4	3	Single	545	15
FN34QD	3	4	3	Single	554	10
FN34QR2	3	4	3	Multi	538	10
FN34R2	3	4	3	Multi	551	10
FNA33	*	@	2	Single	589	15
FNA33D	*	@	2	Single	560	10
FNA33Q	*	@	2	Single	589	15
FNA33QR2	*	@	2	Multi	589	10
FNA33R2	*	@	2	Multi	589	10
FNA34	3	4	3	Single	545	15
FNA34D	3	4	3	Single	560	10
FNA34Q	3	4	3	Single	545	20

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<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
FNA34QD	3	4	3	Single	606	10
FNA34QR2	3	4	3	Multi	551	10
FNA34R2	3	4	3	Multi	543	10
FNAB33	*	@	2	Single	656	15
FNAB33D	*	@	2	Single	659	10
FNAB33Q	*	@	2	Single	656	15
FNAB33QR2*		@	2	Multi	657	10
FNAB33R2	*	@	2	Multi	657	10
FNAB34	3	4	3	Single	652	15
FNAB34D	3	4	3	Single	659	10
FNAB34Q	3	4	3	Single	652	20
FNAB34QD	3	4	3	Single	659	10
FNAB34QR23		4	3	Multi	652	15
FNAB34R2	3	4	3	Multi	653	10
FNE12	1	2	1	Single	527	20
FNE12D	1	2	1	Single	553	10
FNE12P	1	2	1	Single	535	10
FNE12PF	1	2	1	Single	536	10
FNE12Q	1	2	1	Single	528	20
FNE12QD	1	2	1	Single	579	10
FNE12QP	1	2	1	Single	541	10
FNE12QPF	1	2	1	Single	542	10
FNE12QR2	1	2	1	Multi	550	10
FNE12R2	1	2	1	Multi	550	10
FNE33	*	@	2	Single	540	15
FNE33D	*	@	2	Single	554	10
FNE33Q	*	@	2	Single	540	15
FNE33QD	*	@	2	Single	554	10
FNE33QR2	*	@	2	Multi	552	10
FNE33R2	*	@	2	Multi	552	10
FNE34	3	4	3	Single	538	15
FNE34D	3	4	3	Single	554	10

Status: This is the original version (as it was originally made).

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
FNE34Q	3	4	3	Single	545	15
FNE34QD	3	4	3	Single	554	10
FNE34QR2	3	4	3	Multi	551	10
FNE34R2	3	4	3	Multi	551	10
FNEA33	*	@	2	Single	543	15
FNEA33D	*	@	2	Single	560	10
FNEA33Q	*	@	2	Single	543	15
FNEA33QD	*	@	2	Single	560	10
FNEA33QR2	*	@	2	Multi	589	10
FNEA33R2	*	@	2	Multi	589	10
FNEA34	3	4	3	Single	543	15
FNEA34D	3	4	3	Single	560	10
FNEA34Q	3	4	3	Single	545	15
FNEA34QD	3	4	3	Single	560	10
FNEA34QR2	3	4	3	Multi	551	10
FNEA34R2	3	4	3	Multi	551	10
FNN2	1	2	1	Single	574	20
FNN2Q	1	2	1	Single	574	25
FNN2QC	1	2	1	Single	689	20
FNN2QD	1	2	1	Single	626	10
FPQ-102	1	2	1	Single	639	10
Q4N	*	@	3	Multi	885	10
S2A-100	1	2	1	Multi	862	10
S2A-200	1	2	1	Single	870	10
S2AS	1	2	1	Multi	887	10
S2S-500A1	1	2	1	Single	754	10
S2S-500A2	1	2	1	Multi	754	10
S2S-600A	1	2	1	Multi	762	10
S2S-601A	1	2	1	Multi	827	10
S2S-700A	1	2	1	Multi	758	10
S2S-720A	1	2	1	Multi	856	10
S2S-730A	1	2	2	Multi	857	10

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<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
S4S-100RP	3	4	3	Multi	805	10
S4S-11BP	3	4	3	Multi	787	10
S4S-11BRP	3	4	3	Multi	787	10
Ganz						
GE24	1	2	1	Single	760	10
GH42	3	4	3	Single	761	10
Horstmann						
NU 076	1	2	1	Multi	836	10
NU 076 2	1	2	2	Multi	837	10
NU070	1	2	1	Multi	803	10
NU070 2	1	2	2	Multi	803	10
NU077-1	1	2	1	Multi	873	10
NU077-2	1	2	2	Multi	874	10
Iskra						
E89E2	1	2	1	Single	766	10
E89ED2	1	2	1	Multi	767	10
E96E2	1	2	1	Single	808	10
T31AT2	3	4	3	Single	769	10
T31ATD2	3	4	3	Multi	770	10
T37E2	3	4	3	Single	780	10
TE33	3	3	2	Multi	881	10
TE44	*	@	3	Multi	882	10
Landis & Gyr						
CF6	1	2	1	Single	511	15
CH1	1	2	1	Single	466	20
CH1d	1	2	1	Multi	466	10
CL127	1	2	1	Single	675	20
CL127d	1	2	1	Multi	675	10
CL147	1	2	1	Single	686	20
CL147d	1	2	1	Multi	687	15
CL17	1	2	1	Single	508	20
CL17d	1	2	1	Multi	508	10

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<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
CL27	1	2	1	Single	533	25
CL27.1	1	2	1	Single	575	25
CL27.1d	1	2	1	Multi	575	10
CL27.2	1	2	1	Single	614	25
CL27.2d	1	2	1	Multi	614	20
CL27d	1	2	1	Multi	533	20
CL28	1	2	1	Single	546	20
CL28d	1	2	1	Multi	546	10
CL7	1	2	1	Single	463	25
CL7d	1	2	1	Multi	463	15
CM147	1	2	1	Single	735	20
CM147d	1	2	1	Multi	735	10
CM147dk10	1	2	1	Multi	737	10
CM147k10	1	2	1	Single	737	10
DF3	*	@	2	Single	475	15
DF34	*	@	2	Single	515	15
DF34dm	*	@	2	Multi	515	10
DF3d	*	@	2	Multi	475	10
FF10	3	3	2	Single	811	10
FF34	*	@	2	Single	515	15
HF3	*	@	2	Single	475	15
HF34	*	@	2	Single	515	10
HF34dm	*	@	2	Single	515	10
HF3d	*	@	2	Multi	441	10
MF10	3	4	3	Single	811	10
MF3	3	4	3	Single	425	15
MF34	3	4	3	Single	515	15
MF34dm	3	4	3	Multi	516	10
MF3d	3	4	3	Multi	425	15
MH1	3	4	3	Single	479	10
MH1dm	3	4	3	Multi	479	10
ML240	3	4	3	Multi	831	10

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<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
ML240xtf3	3	4	3	Multi	831	10
VL11	*	@	2	Single	588	15
VL11.5	*	@	2	Single	588	15
VL11.5d	*	@	2	Multi	588	10
VL11101	3	3	2	Single	811	10
VL11d	*	@	2	Multi	588	10
VL122	*	@	2	Single	654	15
VL122d	*	@	2	Multi	654	10
VL123c>*	@	2	Single	654	15	
VL123d	*	@	2	Multi	654	10
VL124	*	@	2	Single	654	15
VL124d	*	@	2	Multi	654	10
VL125	*	@	2	Single	654	15
VL125dm	*	@	2	Multi	654	10
YL1	3	4	3	Single	525	15
YL11	3	4	3	Single	531	20
YL11101	3	4	3	Single	811	10
YL11d	3	4	3	Multi	532	15
YL11dm	3	4	3	Multi	532	10
YL120	3	4	3	Single	654	15
YL120dm	3	4	3	Multi	654	10
YL121	3	4	3	Single	654	15
YL121d	3	4	3	Multi	654	15
YL1d	3	4	3	Multi	525	10
ZCA405	1	2	1	Single	799	10
ZCB120	1	2	1	Single	757	10
ZCB120d	1	2	1	Multi	757	10
ZCB127	1	2	1	Multi	781	10
ZCB127	1	2	2	Multi	782	10
ZCB220K	1	2	1	Single	822	10
ZCB221K	1	2	1	Multi	884	10
ZFA405	3	3	2	Single	797	10

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<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
ZMA405	3	4	3	Single	798	10
ZMB120K	3	4	3	Multi	872	10
ZMB127	*	#	3	Single	788	10
ZMB127d	*	#	3	Multi	788	10
Met Vick & AEI						
NF5	1	2	1	Single	409	20
NQ	1	2	1	Single	493	20
NQ/M	1	2	1	Single	530	20
PRI/SIFAM						
CALMU C3D	3	4	3	Multi	750	10
CALMU C3D+	3	4	3	Multi	854	10
CALMU C3T	*	#	3	Multi	751	10
CALMU C3T+	*	#	3	Multi	834	10
CALMU C3TV	3	3	2	Multi	752	10
CALMU C3V+	3	3	2	Multi	835	10
P3TA23	3	4	3	Multi	891	10
S3DXP410	3	4	3	Multi	886	10
Sangamo/ Schlumberger						
CBA	1	2	1	Multi	747	10
FX221	1	2	1	Single	756	10
H10	1	2	1	Single	806	10
HMT	1	2	1	Single	346	15
KBA	1	2	1	Multi	745	10
KBB	1	2	1	Single	816	10
KBC	1	2	1	Single	863	10
KXB	1	2	1	Multi	861	10
MBA	3	4	3	Multi	838	10

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<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
MTA	1	2	1	Multi	774	10
MTB	1	2	1	Multi	875	10
MTN	1	2	1	Multi	804	10
P5A	3	3	2	Multi	869	10
P5A	*	@	3	Multi	868	10
P6A	*	@	3	Multi	867	10
PIA	*	@	3	Multi	886	10
PPA-1	3	4	3	Multi	763	10
PPA-2	3	4	3	Multi	765	10
PPB	*	@	3	Multi	858	10
PXA	3	3	2	Multi	802	10
PXA	3	4	3	Multi	779	10
S200.13	1	2	1	Single	454	20
S200.16	1	2	1	Single	482	25
S200.28	1	2	1	Single	572	20
S200.30	1	2	1	Single	557	20
S200.31	1	2	1	Single	683	25
S200.32	1	2	1	Single	582	25
S200.33	1	2	1	Single	583	20
S200.38	1	2	1	Single	573	25
S200.4	1	2	1	Single	436	20
S200.7	1	2	1	Single	436	20
S203.1	3	4	3	Single	519	15
S204.16	1	2	1	Single	496	15
S204.7	1	2	1	Multi	496	15
S206.16	1	2	1	Single	492	10
S206.7	1	2	1	Single	492	10
S207.2	1	2	1	Single	514	10
S207.4	1	2	1	Single	514	10
S210	1	2	1	Single	844	10
S220	1	2	1	Single	876	10
S29.12	*	@	2	Single	450	15

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
S29.13	3	4	3	Single	451	15
S29.14	*	@	2	Single	450	15
S29.15	3	4	3	Single	450	15
S29.2	*	@	2	Single	353	15
S29.3	3	4	3	Single	354	15
S300.1	*	@	2	Single	587	15
S300.3	*	@	2	Single	640	15
S301.1	3	4	3	Single	563	15
S301.6	3	4	3	Single	563	20
S301.9	3	4	3	Single	641	15
S304	1	2	1	Single	561	10
S304.1	1	2	1	Single	561	10
S304.10	1	2	1	Single	612	10
S304.11	1	2	1	Single	612	10
S304.2	1	2	1	Single	561	10
S304.4	1	2	1	Single	561	10
S304.5	1	2	1	Single	561	10
S304.50	1	2	1	Single	680	10
S304.51	1	2	1	Single	699	10
S304.60	1	2	1	Single	714	10
S304.61	1	2	1	Single	714	10
S304.9	1	2	1	Single	567	10
S309.1	1	2	1	Multi	568	15
S309.2	1	2	1	Multi	584	20
S309.3	1	2	1	Multi	584	20
S309.5	1	2	1	Multi	721	20
S320.1	3	4	3	Single	670	15
S320.1	3	4	3	Multi	670	10
S320.4	3	4	3	Single	671	15
S320.7	3	4	3	Single	674	15
S320.7	3	4	3	Multi	674	10
S320.75	*	@	2	Multi	679	10

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<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
S321.1	3	4	3	Single	586	15
S321.6	3	4	3	Single	586	20
S321.9	3	4	3	Single	642	15
S322.12	3	4	3	Single	663	10
S322.15	3	4	3	Single	664	10
S322.6	3	4	3	Single	633	10
S322.9	3	4	3	Single	633	10
S323.1	3	4	3	Multi	607	10
S323.12	3	4	3	Multi	660	10
S323.6	3	4	3	Multi	607	10
S323.9	3	4	3	Multi	665	10
S325.3	*	@	2	Single	643	15
S326.1	*	@	2	Single	634	10
S326.6	*	@	2	Single	665	10
S326.9	*	@	2	Single	669	10
S327.3	*	@	2	Multi	661	10
S327.6	*	@	2	Multi	662	10
S330.1	3	4	3	Multi	691	10
SBB	1	2	1	Single	823	10
SPA01	1	2	1	Single	728	10
SPA02	1	2	1	Multi	728	10
SPA03	1	2	1	Multi	731	10
SPA11	1	2	1	Single	728	10
SPA13	1	2	1	Multi	731	10
SPB	1	2	1	Single	855	10
SPC	1	2	1	Multi	865	10
SPX	1	2	1	Single	821	10
ST—Q220	3	4	3	Multi	775	10
ST—Q230	3	4	3	Multi	792	10
TRA	1	2	2	Multi	768	10
TRX	1	2	2	Multi	825	10
Smith						

<i>Type</i>	<i>Phase</i>	<i>Meter Wire</i>	<i>Element</i>	<i>Number of Registers</i>	<i>Approval Number</i>	<i>Certification Period in Years</i>
1	2	3	4	5	6	7
AM	1	2	1	Single	348	15
APJ	1	2	1	Single	611	10
APM	1	2	1	Single	361	10
APNE	1	2	1	Single	564	10
APNEQ	1	2	1	Single	564	10
APQ	1	2	1	Single	611	10
Jugmera						
EE 3000 M	1	2	1	Single	859	10

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations set out the procedure for enabling meters, other than meters deemed to be certified under the measuring Instruments (EC Requirements) (Electrical Energy Meters) Regulations 1995 (S.I. 1995/2607), used for the purpose of measuring the quantity of electricity supplied to customers to be certified and provide for the circumstances in which certification and deemed certification are terminated. They consolidate with amendments the Meters (Certification) Order 1987 (S.I. 1987/730) and the Meters (Certification) Regulations 1990 (S.I. 1990/792). In addition to minor and drafting amendments, they make the following amendments of substance—

the requirement that an authorised examiner may not examine any meter which he has examined tested or regulated has been extended to meters which he has manufactured or repaired (regulation 5(3));

amendments to the procedure for certification require the meter to have been sealed before it is certified, but omit the requirement for it to be accompanied by a report (regulation 7(1)) and the requirement for a meter submitted for certification to be accompanied by a report now applies only to a meter submitted for batch certification (regulation 9(3));

tests and testing methods which accord with the equivalent European provisions specified in regulation 8 may be relied upon as alternative to those described in Schedules 1 and 3 (regulations 3(2)(c), 4(2)(d), 7(1)(a) and Schedule 2);

the provision that a meter ceases to be certified if any alteration is made to it no longer has an exception for any alteration to the demand indicator mechanism in a maximum demand meter (regulation 10(3));

detailed changes are made to the period for which a meter remains certified in that periods of between 10 and 25 years are specified for meters listed in Schedule 4 (previously periods of 15 or 20 years were generally specified), and 10 years is specified for other meters (previously 10 or 20 years, depending on type) (regulation 10); a meter shall not be certified unless it can

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be expected to operate within the permitted margins of error for this period or has been tested in accordance with one of the equivalent European provisions (regulation 7(1)(a)); and the fee charged where certification is by a meter examiner is increased from 29p to 34p, and where certification is by an authorised examiner it is increased from 17p to 18p (regulation 11(1)).

Provisions have been omitted that a certificate signed by an examiner is conclusive evidence of certification; that a copy of a certificate signed by an examiner is sufficient evidence; and that a meter ceases to be certified if it is moved.

The provisions requiring the recognition of European Standards have been extended to cover standards accepted in EEA States to reflect the effect of article 11 of the Agreement on the European Economic Area signed at Oporto on 2nd May 1992 (OJ No. L1, 3.1.94, p.1), as itself amended by the Protocol adjusting that Agreement signed at Brussels on 17th March 1993 (OJ No. L1, 3.1.94, p.572) (regulations 2(1), 3(1)(b), 4(1)(b), 8(1) and 8(2)).

These Regulations were notified in draft to the European Commission in accordance with Council Directive [83/189/EEC](#) (OJ No. L109, 26.4.83, p.8) (as amended by Council Directive [88/182/EEC](#) (OJ No. L81, 26.3.88, p.75) and Council Directive [94/10/EC](#) (OJ No. L100, 19.4.94, p.100)).

Attention is drawn to the provisions of the Measuring Instruments (EC Requirements) (Electrical Energy Meters) Regulations 1995, the effect of which is to ensure that, for the purpose of Schedule 7 to the Electricity Act 1989, instruments bearing the mark of EC initial verification are treated in the same way as instruments certified under these Regulations.

Copies of European Standards EN ISO 9001: 1994 (referred to in regulation 3(1)(b)), EN ISO 9002: 1994 (referred to in regulation 4(1)(b)), EN 61036: 1996 (referred to in regulation 8(1)(b)), EN 45001: 1989 (referred to in regulation 8(2)) and Harmonisation Documents 553 S2 and 554 S1 (referred to in paragraph 5(2) of Schedule 2) may be obtained from the British Standards Institution at 389 Chiswick High Road, London W4 4AL.

A compliance cost assessment of the effect of this instrument on the cost of business is available from the Office of Electricity Regulation, Hagley House, Hagley Road, Edgbaston, Birmingham B16 8QG. Copies have been placed in the libraries of both Houses of Parliament.