# ANNEX IX

## TAXIMETERS (MI-007)

The relevant requirements of Annex I, the specific requirements of this Annex and the conformity assessment procedures listed in this Annex apply to taximeters.

### DEFINITIONS

**Taximeter**

A device that works together with a signal generator[(1)] to make a measuring instrument.

This device measures duration, calculates distance on the basis of a signal delivered by the distance signal generator. Additionally, it calculates and displays the fare to be paid for a trip on the basis of the calculated distance and/or the measured duration of the trip.

**Fare**

The total amount of money due for a trip based on a fixed initial hire fee and/or the length and/or the duration of the trip. The fare does not include a supplement charged for extra services.

**Cross-over speed**

The speed value found by division of a time tariff value by a distance tariff value.

**Normal calculation mode S (single application of tariff)**

Fare calculation based on application of the time tariff below the cross-over speed and application of the distance tariff above the cross-over speed.

**Normal calculation mode D (double application of tariff)**

Fare calculation based on simultaneous application of time tariff and distance tariff over the whole trip.

**Operating position**

The different modes in which a taximeter fulfils the different parts of its functioning. The operating positions are distinguished by the following indications:

| | | |
|---|---|---|
| ‘For Hire’ | : | The operating position in which the fare calculation is disabled |
| ‘Hired’ | : | The operating position in which the fare calculation takes place on the basis of a possible initial charge and a tariff for distance travelled and/or time of the trip |
| ‘Stopped’ | : | The operating position in which the fare due for the trip is indicated and at least the fare calculation based on time is disabled. |

### DESIGN REQUIREMENTS

1. The taximeter shall be designed to calculate the distance and to measure the duration of a trip.

2. The taximeter shall be designed to calculate and display the fare, incrementing in steps equal to the resolution fixed by the Member State in the operation position 'Hired'. The taximeter shall also be designed to display the final value for the trip in the operating position 'Stopped'.

3. A taximeter shall be able to apply the normal calculation modes S and D. It shall be possible to choose between these calculation modes by a secured setting.

4. A taximeter shall be able to supply the following data through an appropriate secured interface(s):

— operation position: 'For Hire', 'Hired' or 'Stopped';

— totaliser data according to point 15.1;

— general information: constant of the distance signal generator, date of securing, taxi identifier, real time, identification of the tariff;

— fare information for a trip: total charged, fare, calculation of the fare, supplement charge, date, start time, finish time, distance travelled;

— tariff(s) information: parameters of tariff(s).

National legislation may require certain devices to be connected to the interface(s) of a taximeter. Where such a device is required; it shall be possible, by secured setting, to inhibit automatically the operation of the taximeter for reasons of the non-presence or improper functioning of the required device.

5. If relevant, it shall be possible to adjust a taximeter for the constant of the distance signal generator to which it is to be connected and to secure the adjustment.

RATED OPERATING CONDITIONS

6.1. The mechanical environment class that applies is M3.

6.2. The manufacturer shall specify the rated operating conditions for the instrument, in particular:

— a minimum temperature range of 80 °C for the climatic environment;

— the limits of the DC power supply for which the instrument has been designed.

MAXIMUM PERMISSIBLE ERRORS (MPEs)

7. The MPE, excluding any errors due to application of the taximeter in a taxi, are:

— For the time elapsed: ± 0,1 %

minimum value of mpe: 0,2 s;

— For the distance travelled: ± 0,2 %

minimum value of mpe: 4 m;

— For the calculation of the fare: ± 0,1 %

minimum, including rounding: corresponding to the least significant digit of the fare indication.

PERMISSIBLE EFFECT OF DISTURBANCES

8. **Electromagnetic immunity**

8.1. The electromagnetic class that applies is E3.

8.2. The MPE laid down in point 7 shall also be respected in the presence of an electromagnetic disturbance.

POWER SUPPLY FAILURE

9. In case of a reduction of the voltage supply to a value below the lower operating limit as specified by the manufacturer, the taximeter shall:

— continue to work correctly or resume its correct functioning without loss of data available before the voltage drop if the voltage drop is temporary, i.e. due to restarting the engine;

— abort an existing measurement and return to the position 'For Hire' if the voltage drop is for a longer period.

OTHER REQUIREMENTS

10. The conditions for the compatibility between the taximeter and the distance signal generator shall be specified by the manufacturer of the taximeter.

11. If there is a supplement charge for an extra service, entered by the driver on manual command, this shall be excluded from the fare displayed. However, in that case a taximeter may display temporarily the value of the fare including the supplementary charge.

12. If the fare is calculated according to calculation mode D a taximeter may have an additional display mode in which only the total distance and duration of the trip are displayed in real time.

13. All values displayed for the passenger shall be suitably identified. These values as well as their identification shall be clearly readable under daylight and night conditions.

14.1. If the fare to be paid or the measures to be taken against fraudulent use can be affected by the choice of functionality from a pre-programmed setting or by free data setting, it shall be possible to secure the instrument settings and data entered.

14.2. The securing possibilities available in a taximeter shall be such that separate securing of the settings is possible.

14.3. The provisions in point 8.3 of Annex I apply also to the tariffs.

15.1. A taximeter shall be fitted with non-resettable totalisers for all of the following values:

— The total distance travelled by the taxi;

— The total distance travelled when hired;

— The total number of hirings;

— The total amount of money charged as supplements;

— The total amount of money charged as fare.

The totalised values shall include the values saved according to point 9 under conditions of loss of power supply.

15.2. If disconnected from power, a taximeter shall allow the totalised values to be stored for one year for the purpose of reading out the values from the taximeter to another medium.

15.3. Adequate measures shall be taken to prevent the display of totalised values from being used to deceive passengers.

16. Automatic change of tariffs is allowed due to the:

— distance of the trip;

— duration of the trip;

— time of the day;

— date;
— day of the week.

17. If properties of the taxi are important for the correctness of the taximeter, the taximeter shall provide means to secure the connection of the taximeter to the taxi in which it is installed.

18. For the purpose of testing after installation, the taximeter shall be equipped with the possibility to test separately the accuracy of time and distance measurement and the accuracy of the calculation.

19. A taximeter and its installation instructions specified by the manufacturer shall be such that, if installed according to the manufacturer's instructions, fraudulent alterations of the measurement signal representing the distance travelled are sufficiently excluded.

20. The general essential requirement dealing with fraudulent use shall be fulfilled in such a way that the interests of the customer, the driver, the driver's employer and the fiscal authorities are protected.

21. A taximeter shall be designed so that it can respect the MPEs without adjustment during a period of one year of normal use.

22. The taximeter shall be equipped with a real-timeclock by means of which the time of the day and the date are kept, one or both can be used for automatic change of tariffs. The requirements for the real-time clock are:

— the timekeeping shall have an accuracy of 0,02 %;
— the correction possibility of the clock shall be not more than 2 minutes per week. Correction for summer and wintertime shall be performed automatically;
— correction, automatic or manually, during a trip shall be prevented.

23. The values of distance travelled and time elapsed, when displayed or printed in accordance with this Directive, shall use the following units:

Distance travelled:

— kilometres;
— miles, in those Member States to which Article (1)(b) of Directive 80/181/EEC applies.

Time elapsed:

— seconds, minutes or hours, as may be suitable; keeping in mind the necessary resolution and the need to prevent misunderstandings.

CONFORMITY ASSESSMENT

The conformity assessment procedures referred to in Article 17 that the manufacturer can choose between are:

B + F or B + D or H1.

(**1**) The distance signal generator is outside the scope of this Directive.