

National Measurement Office

Market Surveillance: MI Directive
Trim Reference: U/0901/0011/0006

Annual report on NMO's market surveillance activities under the Measuring Instruments Directive 2004/24/EC, covering Active Electrical Energy Meters for the period April 2011 to March 2012.

Michael Worrell

May 2012

Contents

1.	Executive Summary
2.	Introduction and Background
3.	Methodology
4.	Project1: Active Electrical Energy Meters
5.	Conclusions
6.	Recommendations

1. Executive Summary

Directive 2004/22/EC, relating to measuring instruments (MID) requires that Member States shall take all reasonable steps necessary to ensure that instruments placed on the market meet the requirements of the directive. As part of NMO's overarching corporate objectives, the Utilities team have initiated the UK's first market surveillance project in relation to Active Electrical Energy Meters approved under Annex MI-003 of the Measuring Instruments Directive.

Feedback from stakeholders has indicated very few (MID) approved gas and electricity meters have been placed onto the UK market since the introduction and implementation of the Directive in 2006. However MID meters are becoming more commercially available and as such can be purchased in retail outlets and online, prompting NMO's test purchasing of meters to ensure they are in compliance with the directive.

Ten MID approved single phase domestic electricity meters were purchased via the internet, consisting of two sets of five from two different manufacturers. The meters underwent a visual examination for conformance with the essential requirements in relation to markings. The meters were then sent to an approved laboratory and tested for accuracy in line with the requirements for a class B meter.

On visual examination, meters from set 1 were found to be in accordance with the essential requirements of the directive bearing all the relevant metrological markings and in accordance with the Type Approval Certificate. The meters also passed the relevant laboratory accuracy tests.

Meters from set 2 failed the visual examinations. The CE markings were not the required height as specified in Article 17 of the MID and the supplementary metrology markings were not the required height and did not immediately follow the CE marking. One meter from the set failed the accuracy tests for a class B meter. In addition the meters purchased were marked M11, however the approval of the Notified Body expired in December 2010.

These issues were elevated to the authorities responsible for Market Surveillance and designation of Notified Bodies in the relevant member state. The responsible authority fully co-operated with the UK and has undertaken successful corrective actions.

The project was a successful implementation of the UK's first market surveillance activity in relation to Active Electrical Energy Meters. It was also a good example of enforcement authorities co-operating and working together to ensure manufacturer compliance.

NMO will continue to focus project areas on potentially problematic areas identified using information received from metering stakeholders, and will utilise a risk based approach in line with the requirements of WELMEC Guide 5.3.

2. Introduction & Background

The MID and EU Regulation 2005/765/EC create an obligation for Member States to carry out market surveillance. Market surveillance considers compliance of instruments with the essential requirements of the Directives that apply to them when they are first placed on the market, or put into service. In the UK, market surveillance in relation to electricity and gas meters is conducted by the National Measurement Office (NMO).

Market surveillance is an essential tool in the underpinning of the concept of New Approach Directives and is detailed in EU Regulation 2005/765/EC 'Regulation Accreditation and Market Surveillance (RAMS)'. The principles are also outlined in the "Guide to the implementation of Directives based on the New Approach and the Global Approach". This guide is referred to colloquially as the "Blue Guide" as a result of the colour of the cover. Market surveillance is expected to be carried out between the point in time at which the instrument is placed on the market and put into use.

A market surveillance report on a particular instrument should contain the following information:

1. CE marking and its affixing
2. The availability of the CE declaration of conformity
3. The information accompanying the product
4. Whether the conformity assessment procedures were correct
5. Details of how the essential requirements of the MID are met.

3. Methodology

Market surveillance is a critical element of New Approach Directives, which not only gives confidence in the level of product conformity, but also helps to ensure that correct procedures are followed. MID places emphasis on market surveillance which requires increased cooperation among Member States. The activities undertaken should confirm that the conformity assessment procedures are working and, if this is found not to be the case, quickly identify problems to ensure consumers are protected. The NMO process for implementing market surveillance projects consists of planning, investigation and a corrective action stage.

4. Project1: Active Electrical Energy Meters

The purchasing and installation of MID approved Active Electrical Energy Meters into the UK market place has been relatively small since the introduction of the MID in 2006, with suppliers preferring to purchase or refurbish UK certified electricity meters. With the MID entering its fifth year of implementation MID approved electricity meters are becoming more widely available and numbers being installed are gradually increasing. The NMO has initiated the test purchasing of ten domestic single phase electricity meters approved under the MID from an online retailer. Two different types of meters, from two different manufacturers were purchased with the meters being randomly selected.

Objectives

The objective of this market surveillance was to:

- ascertain if the meters purchased meet the essential requirements of Annex 1 and the instrument specific requirements of Annex MI-003 of the Directive 2004/22/EC,
- visually inspect all meters to ensure the meters bear the correct markings, i.e. notified body marking, CE mark, etc,
- ensure meters are in accordance with their Type Approval Certificate,
- Have the meters tested for accuracy in line with the essential requirements at an accredited laboratory.

Method

It was deemed that a test purchase of meters would be the most appropriate method given relatively little knowledge of meters being sold and installed on to the UK market, due to the low volumes of purchases and installations.

Meters were selected and purchased at random, with five being purchased of each of the two meter types selected.

Meter type 1

All five meters purchased, passed the visual examination and were found to bear the correct metrological markings. The meters on visual inspection were also found to be in accordance with their Type Approval Certificate.

The meters were then sent to an accredited laboratory and tested in line with the MPE requirements in MI-003 (in this case the accuracy requirements of EN50470) with all meters passing the relevant accuracy tests.

Meter Type 2

All five meters failed the visual examinations. The meters were not marked in accordance with Article 17 of the MID. The C.E marking on the meter was only 2 mm in height not the required 5 mm and the supplementary metrology markings did not follow the CE marking as required by Article 17.2. On further investigation, the designation of the notified body had expired in 2010 but the meters were marked 'M11'. One of the meters sent accuracy testing failed when tested at three differing power factors, failing all but two of the different current variations applied. Meters were sealed in accordance with the Type Approval Certificate.

5. Conclusions

As the notified body responsible was designated outside of the jurisdiction of the UK, NMO approached the relevant Member State with the findings of the project. The co-operation between the two member states brought about successful corrective action. With the responsible Member State acting on the UK findings and successfully working with the responsible parties to ensure manufacturer compliance.

This exercise has successfully demonstrated the effectiveness of market surveillance as an enforcement tool in monitoring weighing and measuring equipment being placed on to the UK market. It has also served to highlight how market surveillance authorities can co-operate effectively on enforcement issues and work together to ensure manufacturer compliance on instruments that are freely traded across the European market.

6. Recommendations

The findings of this project are not only useful in terms of piloting and running our first utility meter project. The results relating to accuracy will help and give support to NMO's In Service Testing scheme, which will hopefully demonstrate the importance of regular accuracy monitoring, even if metering assets haven't been in service for a sustained period.

The 2012/13 Market Surveillance project will look to incorporate a risk based approach in line with the criteria set out in WELMEC Guide 5.3 and use stakeholder intelligence in selecting areas to focus on. Future projects will consider the findings of this report but will not be wholly influenced, largely due to the risk of constant duplication. Budget restraints in the current financial climate mean testing purchasing of meters in large volumes is not the best allocation of resources and instead NMO will continue to be innovative with its market surveillance projects ensuring allocated budgets achieve maximum results.