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WStreamLab

Program informatic pentru verificarea metrologica a apometrelor

Manual de Utilizare

Versiune 1.1

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Cuprins

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1.   Introducere

Acest manual de utilizare se refera la aplicatia informatica WStreamLab ce este utilizata la verificarea metrologica a contoarelor de apa. Aceasta aplicatie este dezvoltata de Elcost Company srl si poate fi utilizata impreuna cu o instalatie de verificare a apometrelor in regim manual sau automat. Aplicatia se adreseaza companiilor ce ofera serviciul de verificare metrologica a apometrelor

1.1   Generalitati

Aplicatia WStreamLab ruleaza pe un calculator compatibil PC cu sistem de operare Windows 10/11. Aceasta aplicatie poate fi obtinuta pe mai multe nivele de complexitate in functie de gradul de automatizare solicitat de client. Astfel, aceasta aplicatie poate fi achizitionata folosind un cod de comanda cu urmatoarea structura:

WStreamLab A, B, C

in care valorile A, B si C sunt conform urmatoarei descrieri:

- A: 1 - introducere manuala in aplicatie a valorilor citite folosind tastatura PC

    2 - introducere manuala de la distanta a valorilor citite folosind un terminal radio

- B: 1 - citire manuala a masei/volumului conventional adevarate si a temperaturii apei

    2 - citire prin interfata RS485 Modbus a masei/volumului etalon si a temperaturii apei

- C: 1 - Start/Stop manual folosind panoul electric de comanda a instalatiei de verificare

    2 - Start/Stop automat din aplicatie folosind sisteme de automatizare

Aplicatia WStreamLab permite efectuarea verificarilor metrologice a apometrelor prin doua metode:

- **Metoda volumetrica**, in care valoarea conventional adevarata (de referinta) este un volum de apa determinat de un debitmetru sau un vas etalon,
- **Metoda masica**, in care valoarea conventional adevarata este masa de apa si care este determinata prin cantarire. In acest caz se face o conversie din masa in volum conventional adevarat folosind temperatura apei si densitatea acesteia.

In cazul metodei masice pentru calculul densitatii se foloseste o curba de variatie a acesteia cu temperatura care este apoi compensata cu valoarea reala a densitatii apei utilizata in laborator la temperatura de 20 grade Celsius.

2.   Instalare si configurare

Programul informatic este livrat sub forma unei arhive de instalare ce cuprinde toate fisierele necesare instalarii si functionarii. Instalarea acestei aplicatii se face intr-un mod intuitiv asemanator majoritatii aplicatiior ce se instaleaza pe PC cu sistem de operare Windows. Sistemul de operare recomandat este Windows 10 sau 11.

Dupa instalarea aplicatiei este necesara verificarea configurarii acesteia. Parametri de configurare se gasesc in fisierul *watermeters.cfg* ce este localizat in directorul in care a fost instalata aplicatia. Acest fisier este de tip text si poate fi vizualizat cu un utilitar de tip Notepad. Informatiile din acest fisier arata astfel:

```
1      company=Compania de Utilitati Publice>

2      archive=C:/Stand/Fise>

3      maximum=10>

4      certificate=CE 06.02-355/15>

5      density_20=998.2457>

6      control=fa83d6b2bb1630a263f8656af228e4e4>
```

Primul rand al acestui fisier defineste numele companiei in cadrul careia se foloseste aceasta aplicatie in vederea eliberarii de buletine metrologice de verificare a apometrelor.

Al doilea rand defineste directorul in care se vor arhiva buletinele metrologice in format PDF.

Al treilea rand defineste numarul maxim de apometre DN 15 ce se pot verifica simultan. De regula in cazul in care instalatia este prevazuta cu o linie de masura aceasta valoare este 10 iar in cazul a doua linii de masura aceasta valoare este 20.

Al patrulea rand reprezinta numarul certificatului de etalonare a instalatiei detinute de companie.

Al cincilea rand reprezinta densitatea apei utilizata in instalatie normalizata la temperatura de 20 grade Celsius (Kg/mc).

Al saselea rand reprezinta o suma de control a acestui fisier pe care aplicatia, din motive de securitate, o verifica pentru o functionare corecta a procesului de verificare metrologica. Astfel, modificari ulterioare a acestei configuratii nu mai sunt permise decat doar daca aceasta suma de control este actualizata. Se asigura actualizarea acestei valori ori de cate ori intervine o modificare in configurarea aplicatiei.

3.   Introducerea datelor

Diferite valori numerice ce sunt necesare in timpul efectuarii verificarilor metrologice pot fi introduse utilizand tastatura numerica din dotarea PC sau optional utilizand o tastatura numerica externa ce este conectata la PC prin o legatura radio.
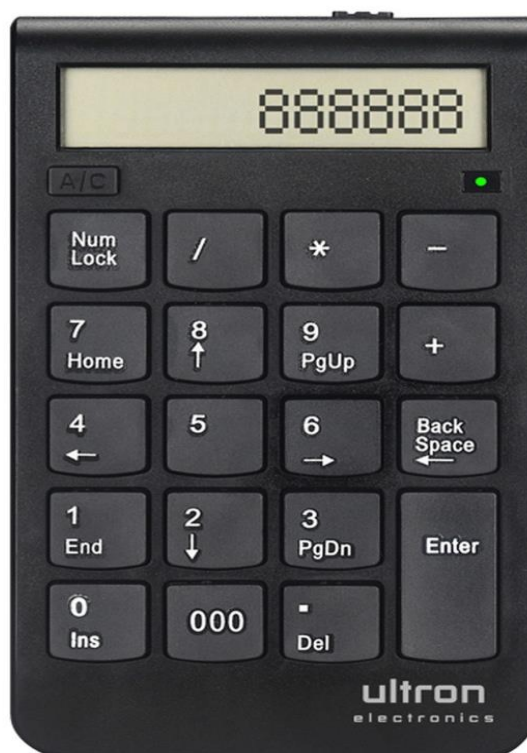
Tastatura numerica externa

In cazul in care valorile numerice introduse necesita zecimale delimitarea acestora de partea intreaga se face utilizand caracterul punct (.). Pentru trecerea intre diferite casute de introducere a datelor se pot utiliza tastele "Tab", "Enter" sau mouse-ul.

4.   Utilizarea programului informatic

La lansarea programului informatic se afiseaza o fereastra ce are aspectul imaginii de mai jos:

In aceasta fereastra se introduc informatiile generale in ceea ce priveste o noua verificare metrologica a unui lot de contoare. Astfel primele informatii ce sunt introduse sunt numarul de contoare si tipul acestora. Tipul contorului se stabileste din o lista ce se afla in baza de date a programului informatic. Se introduc deasemenea si conditiile de laborator de temperatura, umiditate si presiune atmosferica. Tot in aceasta fereastra se selecteaza metoda de masurare Gravimetrica sau Volumetrica si metoda de citire Manual sau prin interfata Modbus RS485 (daca instalatia de verificare si programul informatic sunt in configuratia necesara). In partea de jos a ferestrei sunt afisate principalele caracteristici ale tipului de contor selectat.

Pentru inceperea verificarii metrologice se continua prin apasarea butonului "Sesiune Noua".

4.1   \<Given Function/Feature\>

Instructions: Describe the specific system function or feature in detail and depict graphically by including screen prints and descriptive narrative as appropriate. Ensure each screen print is captioned and has an associated tag providing appropriate alternative text for Section 508 compliance. Describe, in detail, active links on any screen print illustrated so that the user knows what options are available. Provide

information on menus and functionalities that the user must master, expected output/results, and any special instructions. Identify any caveats and exceptions that the user may encounter specific to the system function.

4.1.1   <Given Sub-Function/Sub-Feature>

Instructions: Include additional sub-sections as necessary for system sub-functions or sub-features, if they exist.

5.   Troubleshooting & Support

Instructions: Describe all recovery and error correction procedures, including error conditions that may be generated and corrective actions that may need to be taken. Organize the information in sub-sections as appropriate. The following are common sub-sections that may be included as appropriate.

5.1   Error Messages

Instructions: Identify the error messages that a user may receive and the likely cause(s) and/or possible corrective actions for the error. If the list is extensive, this information may be best provided in an appendix to the document that is referenced here.

5.2   Special Considerations

Instructions: If applicable, describe any special circumstances, actions, caveats, exceptions, etc., that should be considered for troubleshooting.

5.3   Support

Instructions: Provide information on how the user can get emergency assistance and system support (e.g., help desk support, production support, etc.). Include the names of the responsible personnel and organization(s), telephone numbers, and email addresses of the staff who serve as points of contact for system support. The following table is provided as an example and may be modified as needed. Also provide instructions for how identified problems with the system are to be reported. Include instructions for security incident handling, as appropriate.

Table 1 - Support Points of Contact

Contact	Organization	Phone	Email	Role	Responsibility
<Contact Name>	*<Organization>*	*<Phone>*	*<Email>*	*<Role>*	*<Responsibility>*

Appendix A: Record of Changes

Instructions: Provide information on how the development and distribution of the User Manual will be controlled and tracked. Use the table below to provide the version number, the date of the version, the author/owner of the version, and a brief description of the reason for creating the revised version.

Table 2 - Record of Changes

Version Number	Date	Author/Owner	Description of Change
<X.X>	*<MM/DD/YYYY>*	*CMS*	*<Description of Change>*
<X.X>	*<MM/DD/YYYY>*	*CMS*	*<Description of Change>*
<X.X>	*<MM/DD/YYYY>*	*CMS*	*<Description of Change>*

Appendix B: Glossary

Instructions: Provide clear and concise definitions for terms used in this document that may be unfamiliar to readers of the document. Terms are to be listed in alphabetical order.

Table 3 - Glossary

Term	Acronym	Definition
<Term>	*<Acronym>*	*<Definition>*
<Term>	*<Acronym>*	*<Definition>*
<Term>	*<Acronym>*	*<Definition>*

Appendix C: Referenced Documents

Instructions: Summarize the relationship of this document to other relevant documents. Provide identifying information for all documents used to arrive at and/or referenced within this document (e.g., related and/or companion documents, prerequisite documents, relevant technical documentation, etc.).

Table 4 - Referenced Documents

Document Name	Document Location and/or URL	Issuance Date
<Document Name>	*<Document Location and/or URL>*	*<MM/DD/YYYY>*
<Document Name>	*<Document Location and/or URL>*	*<MM/DD/YYYY>*
<Document Name>	*<Document Location and/or URL>*	*<MM/DD/YYYY>*

Appendix D: Approvals

The undersigned acknowledge that they have reviewed the User Manual and agree with the information presented within this document. Changes to this User Manual will be coordinated with, and approved by, the undersigned, or their designated representatives.

Instructions: List the individuals whose signatures are desired. Examples of such individuals are Business Owner, Project Manager (if identified), and any appropriate stakeholders. Add additional lines for signature as necessary.

Table 5 - Approvals

Document Approved By	Date Approved
Name: <Name>, <Job Title> - <Company>	Date
Name: <Name>, <Job Title> - <Company>	Date
Name: <Name>, <Job Title> - <Company>	Date
Name: <Name>, <Job Title> - <Company>	Date

Appendix E: Notes to the Author/Template Instructions

This document is a template for creating a User Manual for a given investment or project. The final document should be delivered in an electronically searchable format. The User Manual should stand on its own with all elements explained and acronyms spelled out for reader/reviewers, including reviewers outside CMS who may not be familiar with CMS projects and investments.

This template was designed based on best practices and information to support CMS governance and IT processes. Use of this template is not mandatory, rather programs are encouraged to adapt this template to their needs by adding or removing sections as appropriate. Programs are also encouraged to leverage these templates as the basis for web-based system development artifacts.

This template includes instructions, boilerplate text, and fields. The author should note that:

- *Each section provides instructions or describes the intent, assumptions, and context for content included in that section. Instructional text appears in blue italicized font throughout this template.*

- *Instructional text in each section should be replaced with information specific to the particular investment.*

- *Some text and tables are provided as boilerplate examples of wording and formats that may be used or modified as appropriate.*

When using this template, follow these steps:

1. *Table captions and descriptions are to be placed left-aligned, above the table.*

2. *Modify any boilerplate text, as appropriate, to your specific project.*

3. *All documents must be compliant with Section 508 requirements.*

4. *Figure captions and descriptions are to be placed left-aligned, below the figure. All figures must have an associated tag providing appropriate alternative text for Section 508 compliance.*

5. *Delete this "Notes to the Author/Template Instructions" page and all instructions to the author before finalizing the initial draft of the document.*