INDEX

A GENERAL WARNINGS

Important precautions

To ensure operator safety and to protect the pump from potential damage, workers must be fully acquainted with this instruction manual before performing any operation.

Symbols used in the manual

The following symbols will be used throughout the manual to highlight safety information and precautions of particular importance:

WARNING
This symbol indicates safe working practices for operators and/or potentially exposed persons.

NOTICE
This symbol indicates that there is risk of damage to the equipment and/or its components.

NOTE
This symbol indicates useful information.

Manual preservation

This manual should be complete and legible throughout. It should remain available to end users and specialist installation and maintenance technicians for consultation at any time.

Reproduction rights

B SAFETY INSTRUCTIONS

B.1 SAFETY WARNINGS

Mains - preliminary checks before installation

WARNING
EQUIPMENT MISUSE HAZARD
You must avoid any contact between the electrical power supply and the fluid that needs to be dispensed.

Maintenance control

Before any checks or maintenance work are carried out, disconnect the power source.

B.2 FIRST AID RULES

Contact with the product

In the event of problems developing following EYE/SKIN CONTACT, INHALATION or INGESTION of the treated product, please refer to the SAFETY DATA SHEET of the fluid handled.

B.3 WARNINGS

The following warnings are for the setup, use, grounding, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear thoughout the body of this manual where applicable.

⚠ WARNING

FIRE AND EXPLOSION	When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode. To help prevent fire and explosion:	Use equipment only in well ventilated area.
		Eliminate all ignition sources, such as cigarettes and portable electric lamps.
		Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline.
		Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.
		Ground all equipment in the work area.
		Stop operation immediately if static sparking occurs or if you feel a shock. Do not use equipment until you identify and correct the problem.
		Keep a working fire extinguisher in the work area.
EQUIPMENT MISUSE	Misuse can cause death or serious injury	Do not operate the unit when fatigued or under the influence of drugs or alcohol.
		Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Data in all equipment manuals.
		Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
		Do not leave the work area while equipment is energized or under pressure.
		Turn off all equipment when equipment is not in use.
		Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
		Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
		Make sure all equipment is rated and approved for the environment in which you are using it.
		Use equipment only for it intended purpose. Call your distributor for information.
		Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
		Do not kink or over bend hoses or use hoses to pull equipment.
		Keep children and animals away from work area.
		Comply with all applicable safety regulations.

Toxic Fluid or Fumes Hazard	Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.	Read MSDS's to know the specific hazards of the fluids you are using.
		Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
		Prolonged contact with the treated product may cause skin irritation: always wear protective gloves during dispensing.
Personal Protective Equipment	Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns.	This equipment includes but is not limited to:
		Protective eyewear, safety shoes, close-fitting clothing and hearing protection.
		Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.
		Wear protective equipment that is suited to the operations that need to be performed and resistant to cleaning products.

B.4 PACKAGE CONTENTS/PRE-INSPECTION

FOREWORD To open the packaging, use a pair of scissors or a cutter, being careful not to damage the dispensing system or its components.

WARNING ***EQUIPMENT MISUSE HAZARD***
Check that the data on the plate correspond to the desired specifications. In the event of any anomaly, contact the supplier immediately, indicating the nature of the defects. Do not use equipment which you suspect might not be safe.

NOTE In the event that one or more of the components described below are missing from inside the package, please contact your Graco distributor

C BECOMING ACQUAINTED WITH THE DEF TURBINE METER

FOREWORD Electronic digital meter featuring a turbine measurement system, designed for precise measuring of DEF and water METER – with LCD display and calibration buttons

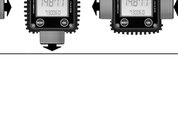
C.1 COMPATIBLE LIQUIDS

Turbine measurement system The turbine is placed inside a hole through the body of the meter, fitted with M-M threaded inlet and outlet. The supplied F-F bushing enables several combinations of threads. the meter has 2 rubber protections, designed to act as gaskets too.

P.N. 127663 The liquids compatible with the meter:
Water
Aus 32 (D.E.F., Ad-Blue)

Main components: K24 Meter

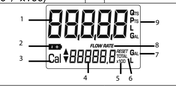
1	LCD display
2	RESET key
3	CAL key
4	F-F bushing



C.2 DISPLAY LCD

FOREWORD The "LCD" of the METER features two numerical registers and various indications displayed to the user only when the applicable function so requires.

1	Partial register (5 figures with moving comma FROM 0.1 to 99999) indicating the volume dispensed since the reset button was last pressed	6	Indication of type of total, (TOTAL / Reset TOTAL);
2	Indication of battery charge	7	Indication of unit of measurement of Totals: L=Litres Gal=Gallons
3	Indication of calibration mode	8	Indication of Flow Rate mode
4	Totals register (6 figures with moving comma FROM 0.1 to 999999), that can indicate two types of Total: 4.1. General Total that cannot be reset (TOTAL) 4.2. Resettable total (Reset TOTAL)	9	Indication of unit of measurement of Partial: Qts=Quarts Pts=Pints L=Litres Gal=Gallons
5	Indication of total multiplication factor (x10 / x100)		



C.3 DISPLAY POSITIONING

FOREWORD The square shape of the meter body allows the display to be rotated in its housing, thus ensuring great versatility in positioning.
This allows easy display readings in any position. The display housing is closed by a plastic cover sealed through a rubber protection acting as a gasket as well. This can be easily removed unscrewing the 4 screws that fix both the cover and the display (1).

NOTICE ***When reattaching the meter display make sure not to pinch the red and black battery cables between the electronic board and the meter housing.***

C.4 USERS BUTTONS

FOREWORD The METER features two buttons (RESET and CAL) which individually perform two main functions and, together, other secondary functions.

MAIN FUNCTIONS PERFORMED - for the RESET key, resetting the partial register and Reset Total
- for the CAL key, entering instrument calibration mode

SECONDARY FUNCTIONS Used together, the two keys permit entering configuration mode where the desired unit of measurement can be set.

LEGEND CALIBRATE MEANS PERFORMING ACTIONS ON THE METER KEYS. BELOW IS THE LEGEND OF THE SYMBOLS USED TO DESCRIBE THE ACTIONS TO BE PERFORMED

SHORT PRESSURE OF CAL KEY	***LONG PRESSURE OF cal KEY***	***SHORT PRESSURE OF RESET KEY***	***LONG pressure of reset key***
			

D OPERATING MODES

OPERATING MODES The user can choose between two different operating modes:
The meter features a non-volatile memory for storing the dispensing data, even in the event of a complete power break for long periods.
The measurement electronics and the LCD display are fitted in the top part of the meter which remains isolated from the fluid-bath measurement chamber and sealed from the outside by means of a cover.

1 - Normal Mode Normal Mode: Mode with display of Partial and Total dispensed quantities

2 - Flow rate Mode Flow Rate Mode: Mode with display of Flow Rate, as well as Partial dispensed quantity.

E INSTALLATION

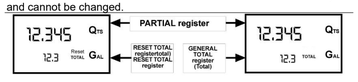
FOREWORD The meter features a threaded, inlet and outlet (1" BSP male and female that can be combined together). It has been designed to be easily installed in any position: fixed in-line or mobile on a dispensing nozzle. In order to improve the life of the turbine, it is recommended to fit a strainer before the meter itself

NOTICE An F/F coupling, complete with its gasket, is supplied for installations on male couplings. Always screw the side with gasket on the meter.
It is up to the installer to use another gasket on the other side of the coupling.
The gasket used has the following characteristics: flat seal id=24, od=35.5 , thick=2 Material: NBR 70 SH
For installations on system, position the meter so that the battery housing can be easily reached.

F DAILY USE

FOREWORD The only operations that need to be done for daily use are partial and/or resettable total register resetting. The user should use only the dispensing system of the meter. Occasionally the meter may need to be configured or calibrated. To do so, please refer to the relevant sections of this manual.

Below are the two typical normal operation displays. One display page shows the partial and reset total registers. The other shows the partial and general total. Switchover from resettable total to general total display is automatic and tied to phases and times that are in factory set and cannot be changed.



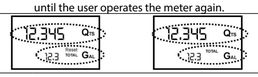
NOTE ***6 digits are available for Totals, plus two icons x 10 / x100. The increment sequence is the following:***
0.0 -> 99999.9 -> 999999 -> 100000 x 10 -> 999999 x 10 -> 100000 x 100 -> 999999 x 100

F.1 DISPENSING IN NORMAL MODE

FOREWORD Normal mode is the standard dispensing. While the count is made, the partial and resettable total are displayed at the same time (reset total).

NOTE Should one of the keys be accidentally pressed during dispensing, this will have no effect.

STAND BY A few seconds after dispensing has ended, on the lower register, the display switches from resettable total to general total: the word reset above the word total disappears, and the reset total is replaced by the general total. This situation is called standby and remains stable until the user operates the meter again.

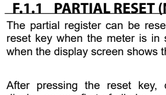


G CALIBRATION

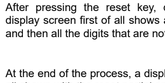
When operating close to extreme use or flow rate conditions (close to minimum or maximum acceptable values), an in-field calibration may be required to suit the real conditions in which the meter is required to operate.

F.1.1 PARTIAL RESET (NORMAL MODE)

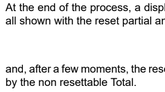
The partial register can be reset by pressing the reset key when the meter is in standby, meaning when the display screen shows the word "TOTAL".



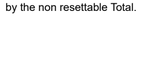
After pressing the reset key, during reset, the display screen first of all shows all the lit-up digits and then all the digits that are not lit up.



At the end of the process, a display page is first of all shown with the reset partial and the reset total

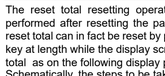


and, after a few moments, the reset total is replaced by the non resettable Total.



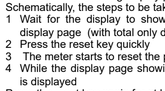
F.1.2 RESETTING THE RESET TOTAL

The reset total resetting operation can only be performed after resetting the partial register. The reset total can in fact be reset by pressing the reset key at length while the display screen shows reset total as on the following display page:

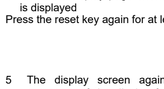


Schematically, the steps to be taken are:

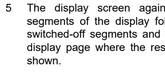
1 Wait for the display to show normal standby display page (with total only displayed)
2 Press the reset key quickly
3 The meter starts to reset the partial
4 While the display page showing the reset total is displayed



Press the reset key again for at least 1 second



5 The display screen again shows all the segments of the display followed by all the switched-off segments and finally shows the display page where the reset Reset Total is shown.



F.2 DISPENSING WITH FLOW RATE MODE DISPLAY

It is possible to dispense fluids, displaying at the same time::

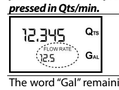
1 the dispensed partial
2 the Flow Rate in [Partial Unit / minute] as shown on the following display page:

Procedure for entering this mode:

1 wait for the Remote Display to go to Standby, meaning the display screen shows Total only
2 quickly press the CAL key.
3 Start dispensing

The flow rate is updated every 0.7 seconds. Consequently, the display could be relatively unstable at lower flow rates. The higher the flow rate, the more stable the displayed value.

NOTE ***The flow rate is measured with reference to the unit of measurement of the Partial. For this reason, in case of the unit of measurement of the Partial and Total being different, as in the example shown below, it should be remembered that the indicated flow rate relates to the unit of measurement of the partial. In the example shown, the flow rate is expressed in Qts/min.***



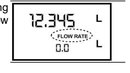
The word "Gal" remaining alongside the flow rate refers to the register of the Totals (Reset or NON Reset) which are again displayed when exiting from the flow rate reading mode.

To return to "Normal" mode, press the CAL key again. If one of the two keys RESET or CAL is accidentally pressed during the count, this will have no effect.

NOTE ***Even though in this mode they are not displayed, both the Reset Total and the General Total (Total) increase. Their value can be checked after dispensing has terminated, returning to "Normal" mode, by quickly pressing CAL.***

F.2.1 PARTIAL RESET (FLOW RATE MODE)

To reset the Partial Register, finish dispensing and wait for the Remote Display to show a Flow Rate of 0.0 as indicated in the illustration then quickly press RESET



G.1 DEFINITIONS

CALIBRATION FACTOR OR "K FACTOR" FACTORY K FACTOR Multiplication factor applied by the system to the electrical pulses received, to transform these into measured fluid units.
Factory-set default factor. It is equal to 1,000. This calibration factor ensures utmost precision in the following operating conditions:
Fluid water/urea solution
Temperature: 20°C
Flow rate: 10 - 30 ltr/min
Even after any changes have been made by the user, the factory k factor can be restored by means of a simple procedure.

USER K FACTOR: Customized calibration factor, meaning modified by calibration.

G.2 CALIBRATION MODE

Why calibrate?

1 Display the currently used calibration factor;
2 Return to factory calibration (Factory K Factor) after a previous calibration by the user
3 Change the calibration factor using one of the two previously indicated procedures

FOREWORD Two procedures are available for changing the Calibration Factor:

1 In-Field Calibration, performed by means of a dispensing operation
2 Direct Calibration, performed by directly changing the calibration factor

In calibration mode, the partial and total dispensed quantities indicated on the display screen take on different meanings according to the calibration procedure phase.
In calibration mode, the meter cannot be used for normal dispensing operations.
In "Calibration" mode, the totals are not increased

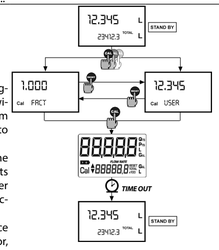
NOTE ***The meter features a non-volatile memory that keeps the data concerning calibration and total dispensed quantity stored for an indefinite time, even in the case of a long power break; after changing the batteries, calibration need not be repeated.***

G.2.1 DISPLAY OF CURRENT CALIBRATION FACTOR AND RESTORING FACTORY FACTOR.

By pressing the CAL key while the meter is in Standby, the display page appears showing the current calibration factor used. If no calibration has ever been performed, or the factory setting has been restored after previous calibrations, the following display page will appear: The word "Fact" abbreviation for "factory" shows that the factory calibration factor is being used

If, on the other hand, calibrations have been made by the user, the display page will appear showing the currently used calibration factor (in our example 0,998) .
The word "user" indicates a calibration factor set by the user is being used..

The flow chart alongside shows the switchover logic from one display page to another
In this condition, the Reset key permits switching from User factor to Factory factor.
To confirm the choice of calibration factor, quickly press CAL while "User" or "Fact" are displayed.
After the restart cycle, the K24 uses the calibration factor that has just been confirmed



NOTE When the Factory Factor is confirmed, the old User factor is deleted from the memory

Instructions

GRACO

ELECTRONIC TURBINE 333467G
METER FOR DIESEL EXHAUST
FLUID (DEF) (ISO 22241) EN

NOT APPROVED FOR USE IN EXPLOSIVE ATMOSPHERES OR HAZARDOUS LOCATIONS

MODEL 127663
MAX WPR 1.0 kPa (10 bar) (145 psi)

Important Safety Instructions
Read all warnings and instructions in this manual. Save these instructions.

PROVEN QUALITY. LEADING TECHNOLOGY.

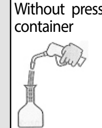
G.2.2 IN FIELD CALIBRATION

FOREWORD This procedure calls for the fluid to be dispensed into a graduated sample container in real operating conditions (flow rate, viscosity, etc.) requiring maximum precision.

NOTE ***For correct meter calibration, it is most important to:***

1. When the Factory Factor is confirmed, the old User factor is deleted from the memory
2. use a precise Sample Container with a capacity of not less than 5 litres, featuring an accurate graduated indicator.
3. ensure calibration dispensing is done at a constant flow rate equivalent to that of normal use, until the container is full;
4. Not reduce the flow rate to reach the graduated area of the container during the final dispensing stage (the correct method during the final stages of sample container filling consists in making short top-ups at normal operation flow rate) ;
5. after dispensing, wait a few minutes to make sure any air bubbles are eliminated from the sample container; only read the Real value at the end of this stage, during which the level in the container could drop.
6. Carefully follow the procedure indicated below.

G.2.2.1 IN-FIELD CALIBRATION PROCEDURE

ACTION		DISPLAY
1	NONE Meter in Standby	12.345 L 1345 TOTAL L
2	LONG CAL key keying The Meter enters calibration mode, shows <<CAL>> and displays the calibration factor in use instead of partial. The words "Fact" and "USER" indicate which of the two factors (factory or user) is currently in use. Important: This factor is that which the instrument also uses for field calibration measurement operations	1.000 L Cal FACT (USER) L
3	LONG RESET key keying The Meter shows "CAL" and the partial at zero. The Meter is ready to perform in-field calibration.	0.000 L Cal FIELD
4	DISPENSING INTO SAMPLE CONTAINER Without pressing any key, start dispensing into the sample container  Dispensing can be interrupted and started again at will. Continue dispensing until the level of the fluid in the sample container has reached the graduated area. There is no need to 9.800 L / Cal. 0.0000 L — 9.86 Indicated value — Real value	9.800 L Cal FIELD
5	SHORT RESET key keying The Meter is informed that the calibration dispensing operation is finished. Make sure dispensing is correctly finished before performing this operation. To calibrate the Meter, the value indicated by the partial totaliser (example 9.800) must be forced to the real value marked on the graduated sample container. In the bottom left part of the display an arrow appears (upwards and downwards), that shows the direction (increase or decrease) of the value change displayed when the following operations 6 or 7 are performed.	9.800 L Cal▲ FIELD
6	SHORT RESET key keying The arrow changes direction. The operation can be repeated to alternate the direction of the arrow.	9.800 L Cal▼ FIELD
7	SHORT/LONG CAL key keying The indicated value changes in the direction indicated by the arrow - one unit for every short CAL key keying - continually if the CAL key is kept pressed. The speed increase rises by keeping the key pressed. If the desired value is exceeded, repeat the operations from point (6).	9.860 L Cal▲ FIELD
8	LONG RESET key keying The Meter is informed that the calibration procedure is finished. Before performing this operation, make sure the INDICATED value is the same as the REAL value. 9.860 L / Cal▲ FACT — 9.86 Indicated value — Real value The Meter calculates the new USER K FACTOR ; this calculation could require a few seconds, depending on the correction to be made ATTENTION: If this operation is performed after action (5), without changing the indicated value, the USER K FACTOR would be the same as the FACTORY K FACTOR, thus it is ignored.	----- L Cal END
9	NO OPERATION At the end of the calculation, the new USER K FACTOR is shown for a few seconds, after which the restart cycle is repeated to finally achieve standby condition. IMPORTANT: From now on, the indicated factor will become the calibration factor used by the Meter and will continue to remain such even after a battery change	1.015 L Cal END
10	NO OPERATION The Meter stores the new work calibration factor and is ready to begin dispensing, using the USER K FACTOR that has just been calculated..	0.000 L Cal 13456 TOTAL L

G.2.3 DIRECT MODIFICATION OF K FACTOR

If normal Meter operation shows a mean percentage error, this can be corrected by applying to the currently used calibration factor a correction of the same percentage. In this case, the percentage correction of the USER K FACTOR must be calculated by the operator in the following way

$$\text{New cal. Factor} = \text{Old Cal Factor} * \left(\frac{100 - E\%}{100}\right)$$

Example:
Error percentage found: E% - 0.9 %
CURRENT calibration factor: 1.000
New USER K FACTOR: 1.000 * [(100 – (- 0.9))/100] = 1.000 * [(100 + 0.9)/100] = 1.009

If the Meter indicates less than the real dispensed value (negative error) the new calibration factor must be higher than the old one as shown in the example. The opposite applies if the Meter shows more than the real dispensed value (positive error).

ACTION		DISPLAY
1	NONE METER in Standby.	12.345 L 13456 TOTAL L
2	LONG CAL KEY KEYING Meter enters calibration mode, shows "CAL" and displays the calibration factor being used instead of the partial. The words "Fact" and "User" indicate which of the two factors (factory or user) is currently being used.	1.000 Cal FACT (USER)
3	LONG RESET KEY KEYING The Meter shows "CAL" and the zero partial total. Meter is ready to perform in-field calibration by dispensing – see previous paragraph.	1.000 L Cal FIELD
4	LONG RESET KEY KEYING We now go on to Direct change of the calibration factor: the word "Direct" appears together with the Currently Used calibration factor. In the bottom left part of the display, an arrow appears (upwards or downwards) defining the direction (increase or decrease) of change of the displayed value when subsequent operations 5 or 6 are performed.	1.000 L Cal▲ DIRECT
5	SHORT RESET KEY KEYING Changes the direction of the arrow. The operation can be repeated to alternate the direction of the arrow.	1.000 Cal▼ DIRECT
6	SHORT/LONG CAL KEY KEYING The indicated value changes in the direction indicated by the arrow - one unit for every short CAL key keying - continually if the CAL key is kept pressed. The speed increase rises by keeping the key pressed. If the desired value is exceeded, repeat the operations from point (5).	1.003 L Cal▲ DIRECT
7	LONG RESET KEY KEYING The Meter is informed that the calibration procedure is finished. Before performing this operation, make sure the INDICATED value is that required.	----- L Cal END
8	NO OPERATION At the end of the calculation, the new USER K FACTOR is shown for a few seconds, after which the restart cycle is repeated to finally achieve standby condition. IMPORTANT: From now on, the indicated factor will become the calibration factor used by the Meter and will continue to remain such even after a battery change	1.003 L Cal END
9	NO OPERATION The Meter stores the new work calibration factor and is ready to begin dispensing, using the USER K FACTOR that has just been changed.	0.000 L 13456 TOTAL L

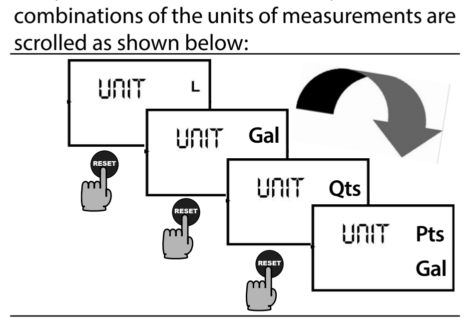
H METER CONFIGURATION

The METER feature a menu with which the user can select the main measurement unit, Quarts (Qts), Pints (Pts), Litres (Lit), Gallons (Gal);
The combination of the unit of measurement of the Partial register and that of the Totals is predefined according to the following table:

Combination no.	Unit of Measurement Partial Register	Unit of Measurement Totals Register
1	Litres (L)	Litres (L)
2	Gallons (Gal)	Gallons (Gal)
3	Quarts (Qts)	Gallons (Gal)
4	Pints (Pts)	Gallons (Gal)

To choose between the 4 available combinations:

1. Wait for the METER to go to Standby
2. Then press the CAL and RESET keys together. Keep these pressed until the word "UNIT" appears on the screen together with the unit of measurement set at that time (in this example Litres / Litres)
3. Every short press of the RESET key, the various combinations of the units of measurements are scrolled as shown below:



4. By pressing the CAL key at length, the new settings will be stored, the METER will pass through the start cycle and will then be ready to dispense in the set units.

NOTE ***The Reset Total and Total registers will be automatically changed to the new unit of measurement.***
NO new calibration is required after changing the Unit of Measurement.

I MAINTENANCE

BATTERY REPLACEMENT Use 2x1.5 V alkaline batteries size AAA

WARNING ***FIRE AND EXPLOSION HAZARD***
Battery replacement may create a static discharge which has the potential to ignite an explosive atmosphere. Always replace batteries in a non-explosive atmosphere (non hazardous location)

The meter features two low-battery alarm levels:

1 (12.345 Qts / 23412.3 TOTAL Gal) When the battery charge falls below the first level on the LCD, the fixed battery symbol appears. In this condition, meter continues to operate correctly, but the fixed icon warns the user that it is ADVISABLE to change the batteries.

2 If meter operation continues without changing the batteries, the second battery alarm level will be reached which will prevent operation. In this condition the battery icon starts to flash and is the only one to remain visible on the LCD.

To change the batteries, with reference to the exploded diagram positions, proceed as follows

1. Press RESET to update all the totals
2. Loosen the 4 fixing screws of the lower cover
3. Remove the old batteries
4. Place the new batteries in the same position as the old ones
5. close the cover again, by positioning the rubber protection as a gasket
6. Meter will switch on automatically and normal operation can be resumed

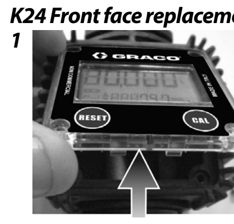
The meter will display the same Reset Total, the same Total and the same Partial indicated before the batteries were changed.
After changing the batteries, the meter does not need calibrating again.

CLEANING Only one operation is necessary to clean the meter. After removing meter from the system where it was installed in, any residual elements can be removed by flushing and rinsing with water If this operation does not restore a smooth rotation of the turbine, it will have to be replaced.

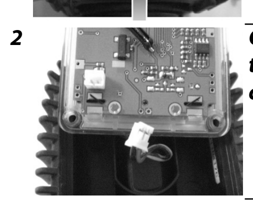
NOTICE ***Do not discard the old batteries in the environment. Refer to local disposal regulations.***

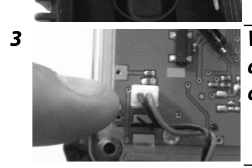
Do not use compressed air onto the turbine in order to avoid its damage because of an excessive rotation

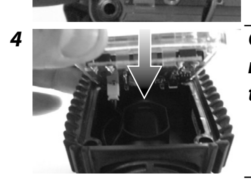
K24 Front face replacement

1 

Carefully remove the screws from the corners of the front panel, and then carefully lift the front cover up away from the main body of the meter.

2 
Carefully remove the screws from the corners of the front panel, and then carefully lift the front cover up away from the main body of the meter.

3 
When the new panel is fitted make sure the power adapter is fitted correctly with the location pin in the correct way

4 
Carefully refit the display panel back onto the main body making sure the wire is tucked into the corner and replace the screws

J MALFUNCTIONS

Problem	Possible cause	Remedial Action
LCD: no indication	Bad battery contact	Check battery contacts
Not enough measurement precision	Wrong K FACTOR	With reference to paragraph H, check the K FACTOR
	The meter works below minimum acceptable flow rate.	Increase the flow rate until an acceptable flow rate range has been achieved
Reduced or zero flow rate	TURBINE blocked	Clean the TURBINE
The meter does not count, but the flow rate is correct	Incorrect installation of gears after cleaning	Repeat the reassembly procedure
	Possible electronic card problems	Contact your dealer

K DISPOSAL

Foreword If the system needs to be disposed, the parts which make it up must be delivered to companies that specialize in the recycling and disposal of industrial waste and, in particular:

Disposing of packing materials The packaging consists of biodegradable cardboard which can be delivered to companies for normal recycling of cellulose.

Metal Parts Disposal Metal parts, whether paint-finished or in stainless steel, can be consigned to scrap metal collectors.

Disposal of electric and electronic components These must be disposed of by companies that specialize in the disposal of electronic components, in accordance with the indications of directive 2012/19/EU (see text of directive below).

Information regarding the environment for clients residing within the European Union European Directive 2012/19/EU requires that all equipment marked with this symbol on the product and/or packaging not be disposed of together with non-differentiated urban waste. The symbol indicates that this product must not be disposed of together with normal household waste. It is the responsibility of the owner to dispose of these products as well as other electric or electronic equipment by means of the specific refuse collection structures indicated by the government or the local governing authorities.

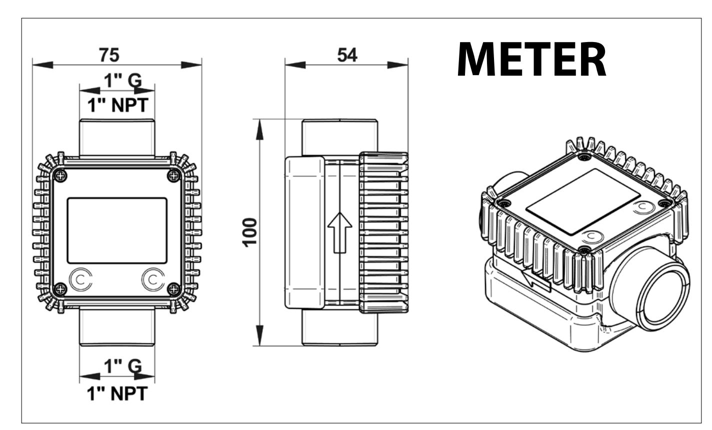
Disposing of RAEE equipment as household wastes is strictly forbidden. Such wastes must be disposed of separately.

Any hazardous substances in the electrical and electronic appliances and/or the misuse of such appliances can have potentially serious consequences for the environment and human health.

In case of the unlawful disposal of said wastes, fines will be applicable as defined by the laws in force.

Miscellaneous parts disposal Other components, such as pipes, rubber gaskets, plastic parts and wires, must be disposed of by companies specialising in the disposal of industrial waste.

L OVERALL DIMENSIONS



M EC/UKCA-DECLARATION OF CONFORMITY

EU-DECLARATION OF CONFORMITY

EU-CONFORMITEITSVERKLARING, DÉCLARATION UE DE CONFORMITÉ, EU-KONFORMITÄTSERKLÄRUNG DICHIARAZIONE DI CONFORMITÀ UE, EU-OVERENSSTEMMELSESERKLÆRING, ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ ΕΕ, DECLARAÇÃO UE DE CONFORMIDADE, DECLARACIÓN UE DE CONFORMIDAD, EU-VAATIMUSTENMUKAISUUSVAKUUTUS, EU-FÖRSÄKRAN OM ÖVERENSSTÄMMELSE, EU PROHLÁŠENÍ O SHODĚ, ELI VASTAVUSDEKLARATSIOON, EU-MEGFELELŐSÉGI NYILATKOZAT, ES ATBILSTĪBAS DEKLARĀCIJA, ES ATITIKTIES DEKLARACIJA DEKLARACJA ZGODNOŚCI UE, DIKJARAZZJONI TA' KONFORMITÀ TAL-UE, EU IZJAVA O SUKLADNOSTI, EÚ VYHLÁSENIE O ZHODE, ЕС ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ, DECLARAȚIA UE DE CONFORMITATE

ISO 9001 Registered

Model DEF METER
Modèle, Modell, Modello, Μοντέλο, Modelo, Malli, Mudel, Modelis, Mudell, Модел, Samhail

Part 127663
Bestelnr., Type, Teil, Codice, Del, Μέρος, Peça, Referencia, Osa, Součást, Részegység, Daļa, Dalis, Część, Taqsima, Časť, Част, Páirt, Parte

Complies With The EC Directives:
Voldoet aan de EG-richtlijnen, Conforme aux directives CE, Entspricht den EG-Richtlinien, Conforme alle direttive CE, Overholder EF-direktiverne, Σύμφωνα με τις Οδηγίες της ΕΚ, Em conformidade com as Directivas CE, Cumple las directivas de la CE, Täyttää EY-direktiivien vaatimukset, Uppfyller EG-direktiven, Shoda se směrnicemi ES, Vastab EÜ direktiividele, Kielégíti az EK irányelvek követelményeit, Atbilst EK direktīvām, Atitinka šias ES direktyvas, Zgodność z Dyrektywami UE, Konformi mad-Direttivi tal-KE, V skladu z direktivami ES, Je v súlade so smernicami ES, Съвместимост с Директиви на ЕО, Tá ag teacht le Treoracha an CE, Respectă directivele CE

2014/30/EU EMC Directive, 2011/65/EU Restriction of Hazardous Substances (RoHS2) Directive with Amendment 2015/863

Standards Used:
Gebruikte maatstaven, Normes respectées , Verwendete Normen, Norme applicate, Anvendte standarder , Πρότυπα που χρησιμοποιήθηκαν, Normas utilizadas, Normas aplicadas, Sovellettavat standardit, Tillämpade standarder, Použité normy, Rakendatud standardid, Alkalmazott szabványok, Izmantotie standarti, Taikyti standartai, Użyte normy, Standards Użati, Uporabljeni standardi, Použité normy, Използвани стандарти, Caighdeáin arna n-úsáid , Standarde utilizate

EN 63000

Approved By:
Goedgekeurd door, Approuvé par, Genehmigt von, Approvato da, Godkendt af , Έγκριση από, Aprovado por, Aprobado por, Hyväksynyt, Intygas av, Schválil, Kinnitanud, Jóváhagyta, Apstiprināts, Patvirtino, Zatwierdzone przez, Approvat minn, Odobril, Schválené, Одобрено от, Faofa ag, Aprobat de

12MAY2021 | 199509 L

Hans van Cranenbroek
Operations director-EMEA

Manufactured By:
GRACO INC.
88 - 11th Avenue N.E.
Minneapolis, MN 55413
USA

Authorized Representative:
GRACO DISTRIBUTION BVBA
Slakweidestraat 31
3630 Maasmechelen
BELGIUM

GREAT BRITAIN (UKCA) DECLARATION OF CONFORMITY

UK CA

ISO 9001 Registered

Model DEF METER

Part 127663

Complies with UK Statutory Instruments:

2016 No. 1091 Electromagnetic Compatibility Regulations 2016, 2012 No. 3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Standards Used:
EN 63000

Approved By:

12MAY2021 | 199509 L

Hans van Cranenbroek
Operations director-EMEA

Manufactured By:
GRACO INC.
88 - 11th Avenue N.E.
Minneapolis, MN 55413
USA

Responsible Person:
Graco Ltd.
Central Square 5th Floor
29 Wellington St
Leeds, England
LS1 4DL

This declaration of conformity is issued under the sole responsibility of the manufacturer.

N TECHNICAL DATA

Measurement system		TURBINE
Flow Rate (Range)	Flow-rates	5 - 100 (Litres/minute) FOR WATER/ UREA SOLUTION..
Operating pressure (Max)		10 (Bar) 145 (psi)
Storage temperature (Range)		-20 - + 70 (°C) -4 - + 158 (°F)
Storage humidity (Max)		95 (% RU)
Operating temperature (Range)		-10 - + 50 (°C) 14 - + 122 (°F)
Flow resistance		0.30 Bar at 100 lit/min. 5 psi at 26.4 gpm
Permissible Viscosity (Range)		2 - 5.35 cSt
Accuracy		±1% after calibration within 10- 90 (litres/min) 2.65 - 23.8 (gallons/min) range
Reproducibility (Typical)		±0,3 (%)
Screen		Liquid crystals LCD. Featuring: - 5-figure partial - 6-figure Reset Total plus x10 / x100 6-figure non reset Total plus x10 / x100
Power Supply		2x1.5 V alkaline batteries size AAA
Battery life		18 - 36 months
Weight		0.25 Kg / 0.6 lb (included batteries)
Protection		IP65

NOTE ***The wetted materials used in this device are : stainless steel, plastic and rubber suitable for Ad-Blue.***

Graco Extended Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twenty-four months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS
The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

Graco Information

For the latest information about Graco products, visit www.graco.com.

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.
Phone: 612-623-6928 **or Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590

All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 333467/M0300

Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA

www.graco.com
May 2021