USER MANUAL

DAZ

Digital display with code access
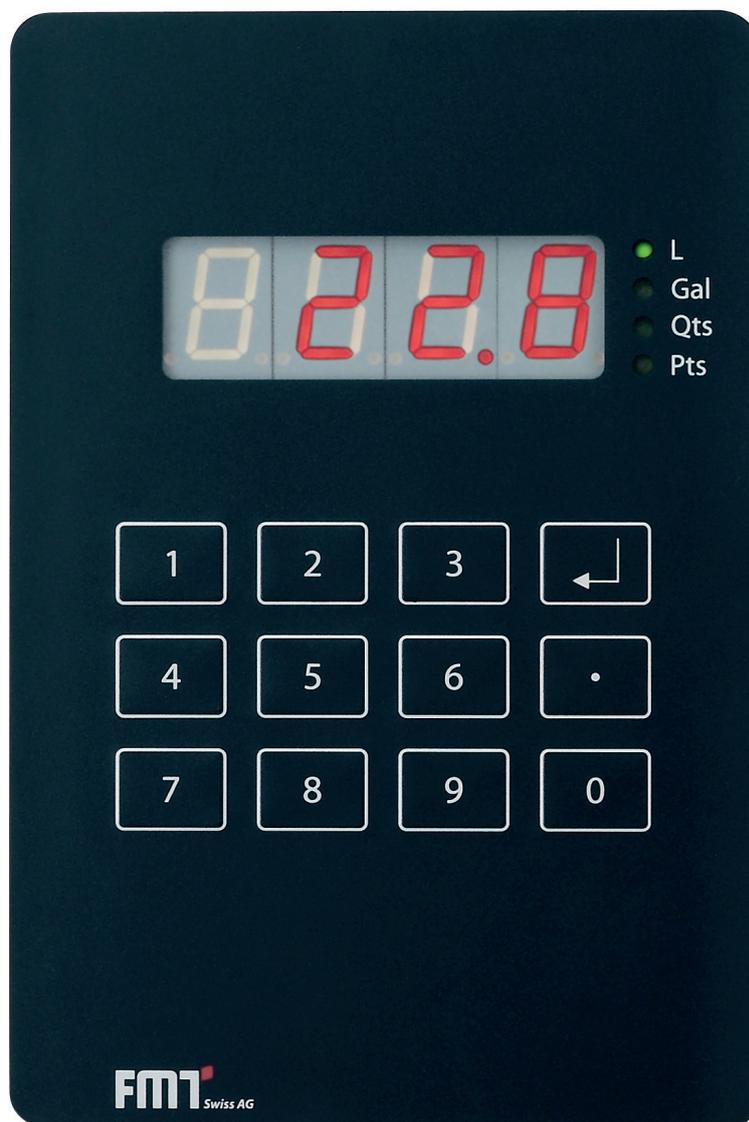
FMT *Swiss AG*

Table of contents

1.   Introduction

This document describes the design and the handling of the DAZ with code access.

The DAZ allows to restrict the access to a dispenser to certain users only. The fuelling operations are not logged. In addition, there are no sensors which could prevent dispensing operations (e.g. leakage, temperature).

2.   Design

2.1   7-segment display

The data are visualized on a 7-segment display with 4 blocks.

2.2   Configuration

The following configurations can be made on the DAZ:

- PIN code entry required (enable/disable)
- Unit of measurement (litres, gallons, quarters, pints)

FMT *Swiss AG*

2.3   Users

■ Pin code (4 digits)
■ Type (service, standard)

The DAZ allows the management of up to 100 users. A PIN code can be assigned only once. The PIN code "1368" is permanently stored in the firmware and cannot be changed. It is needed for service purposes, if there are no other users or if a service user is not yet known.

2.4   Memory

Since the DAZ neither has a battery for the RTC nor an SD card, the data must be stored in the non-volatile RAM.

The following data are stored in the RAM:

■ Configuration
■ Users (max. 100)
■ Calibration
■ Sum total

3.   Operation

The DAZ features two different operating modes: refuelling and service. The user logs in with his PIN code. According to the user type, only refuelling operations or settings in the service level are allowed.

During the pin code entry, the display shows the digits 1, 2, 3, 4. They signalize the keystroke on the display. The digits do not correspond to the PIN code.

3.1   Start up

After start up, the firmware's version number is displayed for approx. 2 seconds.

3.2   Idle mode

In the idle mode, the system waits for the PIN code entry. If the PIN code entry is not enabled, the system will switch to the refuelling mode as soon as the nozzle is picked up.

The idle mode is made visible by the 4 points on the display appearing if no entry is required.
"Pin" signalizes that the PIN code must be entered.

If a wrong PIN code is entered, "Err" will be displayed for approx. 5 seconds. Then, the system will switch back to the idle mode.

3.3   Refuelling

Upon successful verification of the user, the screen is cleared. When the nozzle is picked up, the pump starts to pump. The display shows the current fuel quantity during refuelling. At the end of the refuelling operation (when the nozzle is returned to its hang-up) the pump is stopped and the value remains on the display for approx. 30 seconds.

FMT *Swiss AG*

4. Service

The service level is signalized by "1" on the display. The service level is only accessible by PIN code.

1			

The service level is divided in the four areas configuration, calibration, user management and sum total. The system switches to an area when the corresponding digit is entered. When ENTER is pressed, the system always switches back to one level lower.
If there is no keypad entry in the service area for 120 seconds, the service area is left and the system returns to the idle mode for safety reasons.

4.1 Configuration (1, 1)

1	1		

The configuration area allows to set whether a PIN is required for login.

4.1.1 Configuration / PIN code (1,1,1)

Press "1" to change/display the PIN code setting.

1	1	1	

If the PIN code setting is enabled, "1" appears as the fourth digit, if it is disabled, "0" appears on the screen.

1	1	1	0

Example for disabled pin code setting

Press "1" to enable and "0" to disable the pin code setting. The fourth digit indicates the newly set status.

1	1	1	1

Example for enabled PIN code setting

The change is accepted and after approx. 2 seconds, the system switches to the configuration level.

1	1		

4.2 Calibration (1, 2)

1	2		

During calibration, the pump is started by lifting the dispensing nozzle. The counted pulses are shown on the display. If the dispensing nozzle is hung up again, the pump is also stopped. Ensure that the quantity dispensed for calibration is not too large, because there are only 4 digits available to indicate the number of pulses. There is no internal limitation.

1	2	3	4

The entry of the dispensed quantity is started by pressing "2".

1	2	2	

With the entry of the first digit, the screen is cleared and the entered digit is shown. The system adopts the entry when the ENTER key is pressed. Now, the unit of measurement still needs to be defined. The display shows 123.

1	2	3	

FMT *Swiss AG*

The following 4 units of measurement are supported and adopted by the system when the corresponding digit is pressed.

- 1) Litres (L)
- 2) Gallons (Gal)
- 3) Quarters (Qts)
- 4) Pints (Pts)

1	2	3	2

Example after selection of "gallons"

When the ENTER key is pressed, the data are accepted and after approx. 2 seconds, the system switches to the service level.

1			

4.3 User management (1, 3)

1	3		

The user management offers 4 functions which can be started by pressing the corresponding digit

4.3.1 Creating a user (1, 3, 1)

"1" must be pressed to create a user.

1	3	1	

Subsequently, the 4-digit pin code must be entered. The pin code is visualized here to make the entry safer.

1	2	3	4

If the system already knows the user, "Err" will flash for approx. 5 seconds and the system will switch back to the user management level.

1	3		

By default, the new user is of the STANDARD type, therefore, the fourth digit is "0".

1	3	1	0

Example for the STANDARD type.

To change the type, "1" must be pressed for SERVICE. If you want the user to keep his status as a STANDARD type user, press ENTER to return to the user management level.

1	3	1	1

Example for change to SERVICE

The data are adopted by the ENTER key and after approx. 2 seconds, the system switches to the user management level.

1	3		

4.3.2 Changing the user type (1,3,2)

Press "2" to change the user type.

1	3	2	

Subsequently, the four-digit PIN code must be entered.

1	2	3	4

If the system does not know the user, "Err" will flash for approx. 5 seconds and the system will switch back to the user management level.

1	3		

If the user is of the SERVICE type, "1" is displayed as the fourth digit, if he is of the STANDARD type, "0" appears.

1	3	2	1

Example for the SERVICE type

To change the type, press "1" for SERVICE and "0" for STANDARD.

1	3	2	0

Example for change to STANDARD

The data are adopted by ENTER and after approx. 2 seconds, the system switches to the user management level.

1	3	3	

4.3.3 Deleting users (1,3,2)

Deleting users.

1	3	3	

Subsequently, the four-digit PIN code must be entered. The PIN code is visualized here to make the entry safer.

1	2	3	4

If the system does not know the user, "Err" will flash for approx. 5 seconds and the system will switch back to the user management level.

1	3		

When "1" is pressed, the display (PIN) flashes for approx. 5 seconds. Within this period, "2" must be pressed to delete the user. Then, the system switches back to the user management level.

1	3		

4.4 Sum total (1, 4)

1	4		

Sum total is displayed after approx. 2 seconds. If the value is higher than 999, no fractional digit is shown.
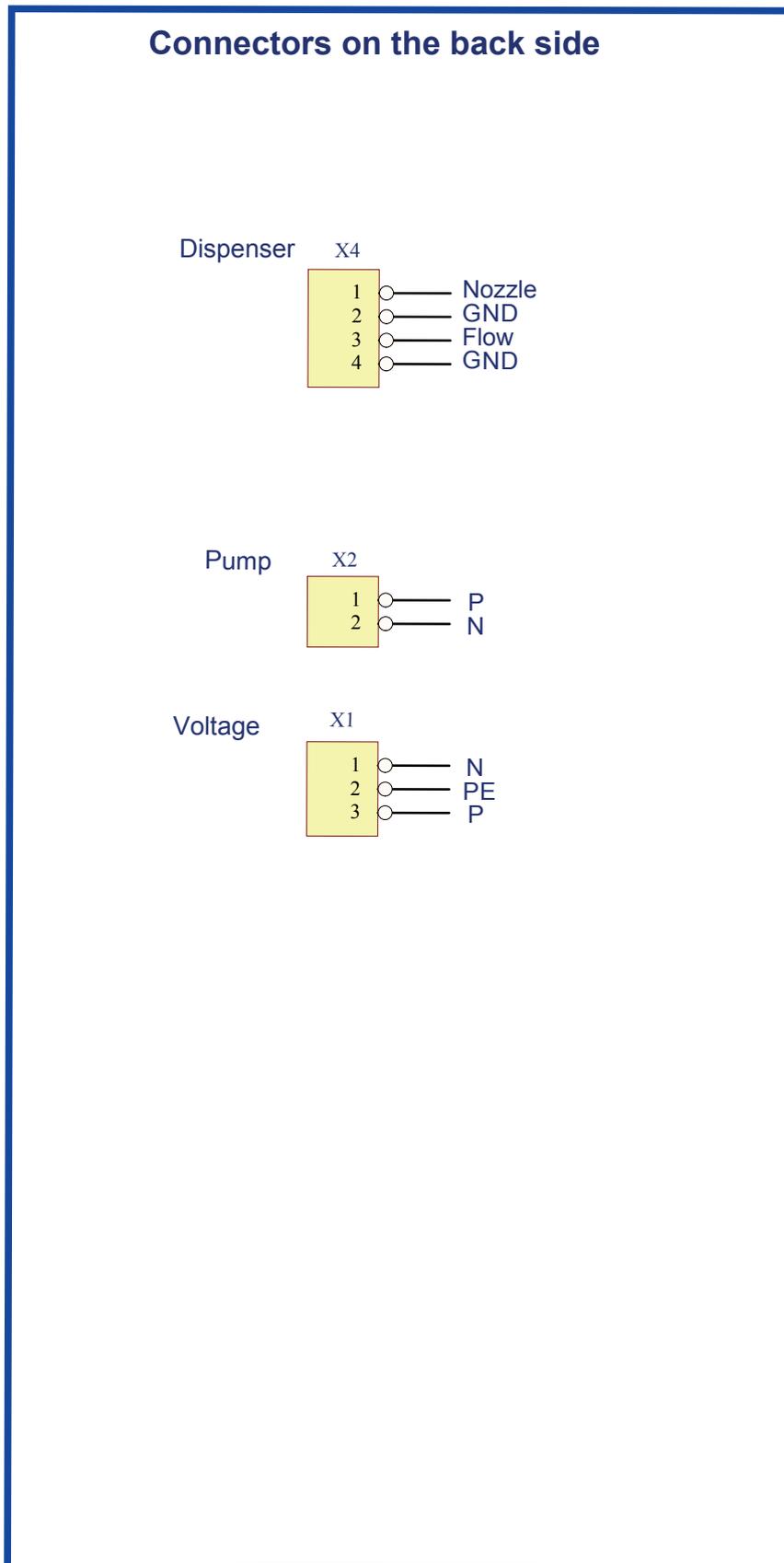
1	2	3.	4

If you want to reset sum total, press "1". The sum display will flash for approx. 5 seconds. Within this period, "2" must be pressed to definitely reset the sum. After the reset, the system returns to the service level again. This operation can be cancelled before by pressing ENTER. In this case you will also get back to the SERVICE level.

1			

FMT *Swiss AG*

5.   Resetting the memory

Setting the jumper "J1" will delete the internal memory when the firmware is started, that is, it is reset to the default settings. Among others, the users and the calibration are stored here. During this deletion process, all 7 segments of the 4 blocks are flashing. The "unit LEDs" light up one after another.

6.   Wiring diagrams

Connectors on the back side

Dispenser   X4

1	Nozzle
2	GND
3	Flow
4	GND

Pump   X2

1	P
2	N

Voltage   X1

1	N
2	PE
3	P

FMT *Swiss AG*

FMT *Swiss AG*

FMT Swiss AG
Fluid Management Technologies Swiss AG
Gewerbestraße 6
6330 Cham / Schweiz
Tel. +41 41 712 05 37
Fax +41 41 720 26 21
info@fmtag.com
www.fmtag.com