ELFI
FIDAR ELECTRONICSزی

Digital Card Model FDM0800-01 User's Manual

Description – Installation – Technical Data

Hardware Revision: 1.0.0

Software Revision: 2.0.0

Manual Revision: 1.0.0

Technical specifications of the Digital card

General	
Model	FDM0800-01
Dimensions	10 cm (length) × 5.6 cm (height) × 18.5 cm (depth)
Weight	0.2 Kg
Operating Temperature	-10°C to 45°C
Storage Temperature	-20°C to 60°C
Operating Humidity	0% to 60%
Warranty	2 years
Hardware	
Communication Type	Digital
Number of Input Channels	8* input voltage
Minimum Data Transmission Interval	500 ms
Data Logging Intervals	Based on trig, Channels can be activated/deactivated using DIP switches
API Data Interchange Formats	CAN
Architecture	ARM 32-bit
CPU Speed	32 MHz

SAFETY PRECAUTIONS

(Before using this product, read the precautions)

Please carefully read this manual before using the product and pay full attention to the mentioned points to use the product correctly. In this guide, safety measures are classified into two levels: "⚠ Warning" and " ⚠ Caution"

⚠ **Warning**	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.

⚠ **Caution**	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage

Follow the safety measures at both levels as they are crucial for personal and system safety. Ensure that users read this manual and then keep it in a safe place for future reference.

(Installation precautions)

⚠ Warning

● If you install or remove the Digital card from the FIDAQUIRE data logger, be sure to disconnect the device's power supply. Failure to do so may result in electric shock or damage to the card and data logger.

● Before starting the FIDAQUIRE data logger, make sure to verify the quality of the incoming power voltage. Failure to do so may cause damage to the digital card.

⚠ Caution

● If additional Digital cards need to be installed, fully insert the card into the card slot. After installation, check to ensure it is properly seated. Failure to do so may lead to poor contact and result in malfunction of the card.

● Use the Digital card in an environment that complies with the general specifications provided in this manual. Using the Digital card in any other operating

environment may result in electric shock, fire, malfunction, or damage, and degrade the quality of the module.

● Never directly touch the conductive parts or electronic components of the Digital card. Doing so may cause malfunction or failure of the data logger.

Note: Never insert or remove cards while the device is powered on.

(Wiring precautions)

⚠ Warning

● Before wiring, be sure to check the integrity and quality of all input and output cables. Failure to do so may result in damage to the product.

⚠ Caution

● The network cable or RJ45 connected to the Digital card of the FIDAQUIRE data logger must be properly installed. An incomplete connection may result in a short circuit, fire, or malfunction.

● When disconnecting the network cable or RJ45 from the Digital card of the FIDAQUIRE data logger, do not pull the cable forcefully. Pulling the cable connected to the card may cause device malfunction or damage to the Digital card or the cable.

Note: The manufacturer assumes no responsibility for the consequences of improper installation, incorrect equipment, or negligence during installation.

(Disposal precautions)

⚠ Caution

● Dispose of the Digital card as industrial waste.

● When discarding the card, separate it from other waste in accordance with local regulations and properly dispose of it at the local waste collection/recycling center.

1. Introduction

The digital data card model FDM0800-01 is one of the digital data acquisition cards with high scan speed, compatible with the FIDAQUIRE data logger model 01-6455FCD. It is capable of receiving eight voltage lines simultaneously according to the IEC61131-2, Type 1,3 standard. The ability to send data in Trig mode on the card allows users to record data accurately and without repetition, without needing to adjust data transmission settings.
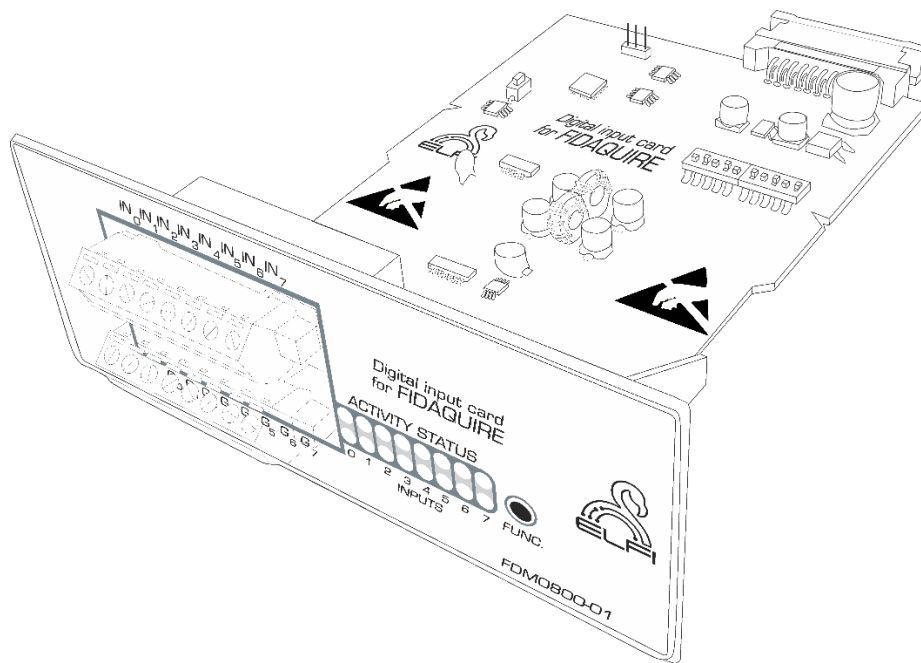

Figure 1: The digital data card

2. Settings

2.1 Data Transmission Settings

To change the data transmission settings, ten dip switches are provided on the card (Figure 2). The two switches on the right determine the interval between data transmissions, covering intervals of 30 seconds, two minutes, and five minutes. Naturally, reducing the data transmission intervals will increase the volume of data in the database and reduce the data time span. This interval is purely for ensuring data transmission at specific intervals, and if any change occurs in the input status between these intervals, new data will be sent to the data logger and recorded. The eight switches on the left are for setting the active channels, allowing the user to disable channels that do not require input measurement.

Note: To make any changes to the card settings, be sure to completely turn off the device and disconnect its main power supply. Then, by unscrewing the card panel screws, remove the card, and after making the necessary changes, place the card back into the device. After ensuring the card is properly connected to the device, you can turn on the data logger.

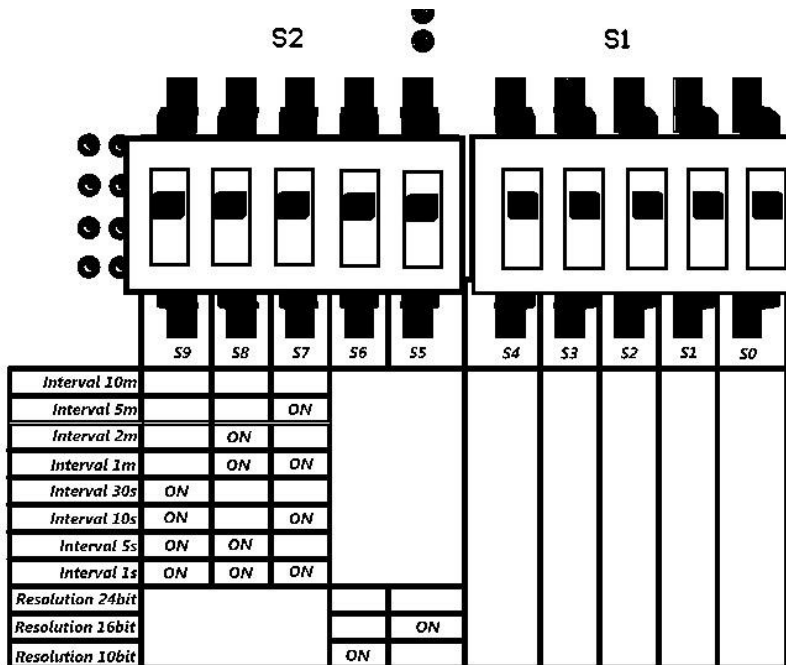|	S9	S8	S7	S6	S5	S4	S3	S2	S1	S0
Interval 10m										
Interval 5m			ON							
Interval 2m		ON								
Interval 1m		ON	ON							
Interval 30s	ON									
Interval 10s	ON		ON							
Interval 5s	ON	ON								
Interval 1s	ON	ON	ON							
Resolution 24bit										
Resolution 16bit					ON					
Resolution 10bit				ON						

Figure 2: Image related to card settings

2.2 Connections

The power supply and input circuit of the digital data card model FDM0800-01 is designed to be completely isolated. Additionally, on the ground of the isolated section of this card, a point for connecting to the chassis is provided (by default, this connection is open circuit) so that it can be connected to the chassis if needed and according to the schematic of the existing equipment. The default input connection modes to the circuit are as follows:

- o If the inputs of the data logger are isolated from a single source, they can be directly connected to the data logger.

- o If the inputs are connected to the data logger from multiple different sources, the use of voltage or current isolators to create a floating ground at the source and a reference ground at the destination is necessary.

- o Connecting non-isolated inputs to the data logger is not recommended. However, if connected, it is preferable that all inputs are supplied from a single source.
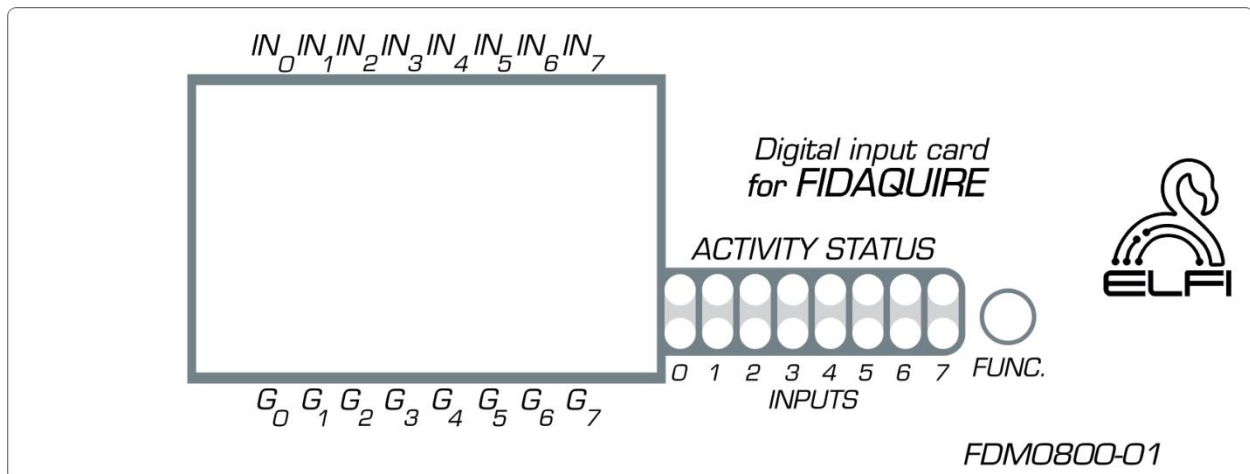
Figure 3: Image related to the card surface

Note: In Figure 3, the lights in the top row indicate whether the channels are active or inactive, while the lights in the bottom row show the Trig state of the channels.

3- Installing the Digital card on the FIDAQUIRE data logger

The process of identifying and initializing the card is fully automated, and after the data logger device is installed and set up, the card will appear on the "Cards list" page. For initial configuration, refer to the FCD6455-01 product manual. After initializing the card, the input channel information (input sensors) will also be displayed on the same page (Figure 4).
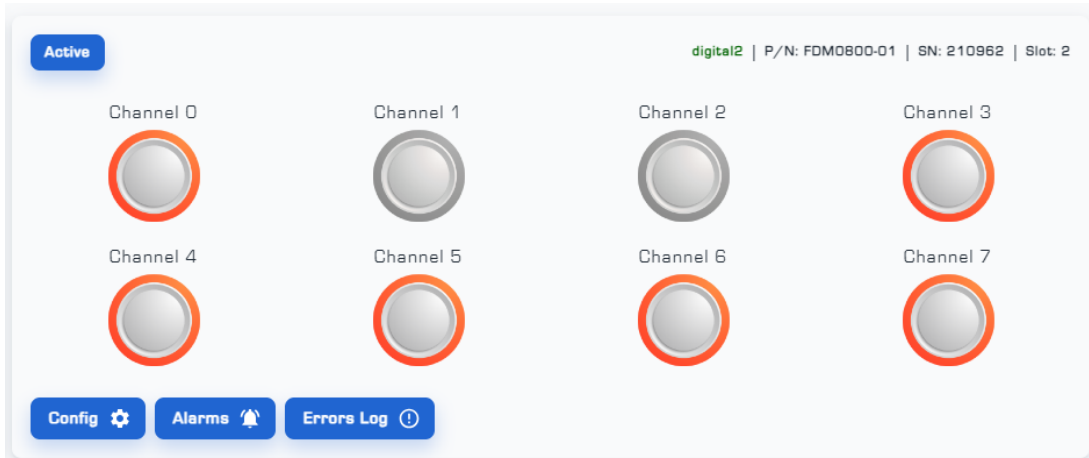
Figure 4: View of the Digital Card Display Page in the Device's User Interface

Attention: If you remove the card from the device, the card will go offline. When the card is reconnected to the datalogger, the Nodes will also reconnect and start transmitting data. However, if you delete the card from the datalogger, all data stored by the Nodes will be erased, and you will need to re-identify and reconnect the Nodes from the beginning.
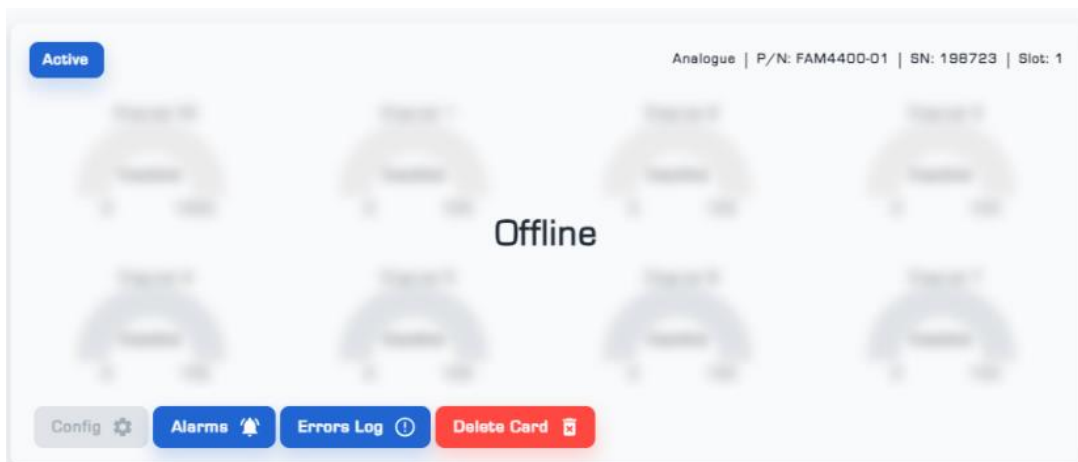
Figure 5: Image showing the removal of the card from the datalogger.

4. Card and Channel Settings

● The digital card settings menu includes "General", "Active Channels" and "Channels Data Map" steps, which are briefly explained below:

■ The General page is related to the general settings of the card (Figure 6).
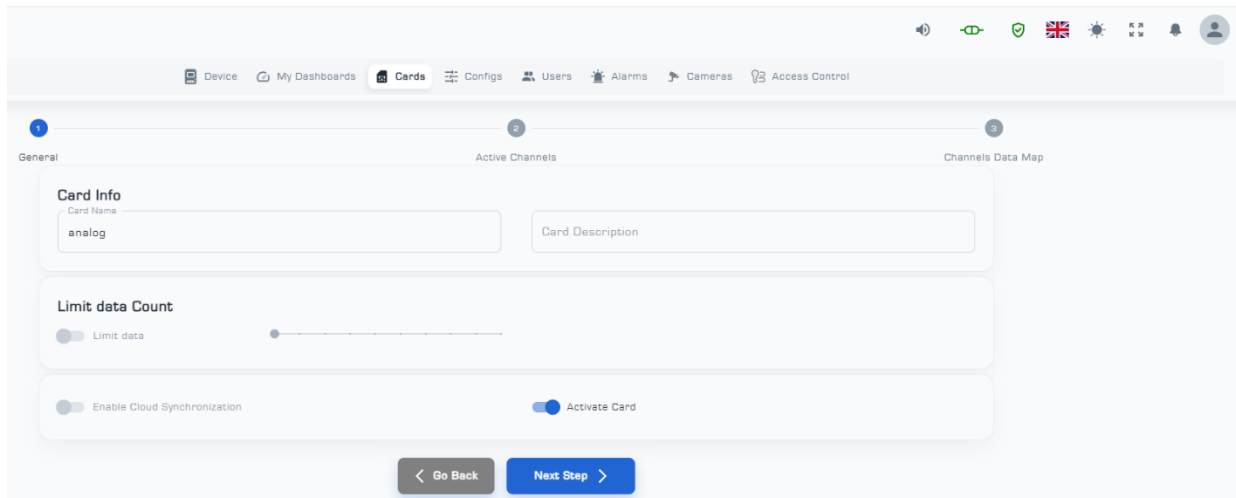
Figure 6: General Page from the Config Menu

Active Channels displays the list of active and inactive channels (Figure 6).

Note: In order to disable any of the channels, you must make changes on the card hardware. For this, be sure to turn off the device completely and disconnect its main power supply. Then by opening the screws of the card panel, take out the card and after making the necessary changes, insert the card into the device. After making sure that the card is correctly connected to the device, you can turn on the data logger.
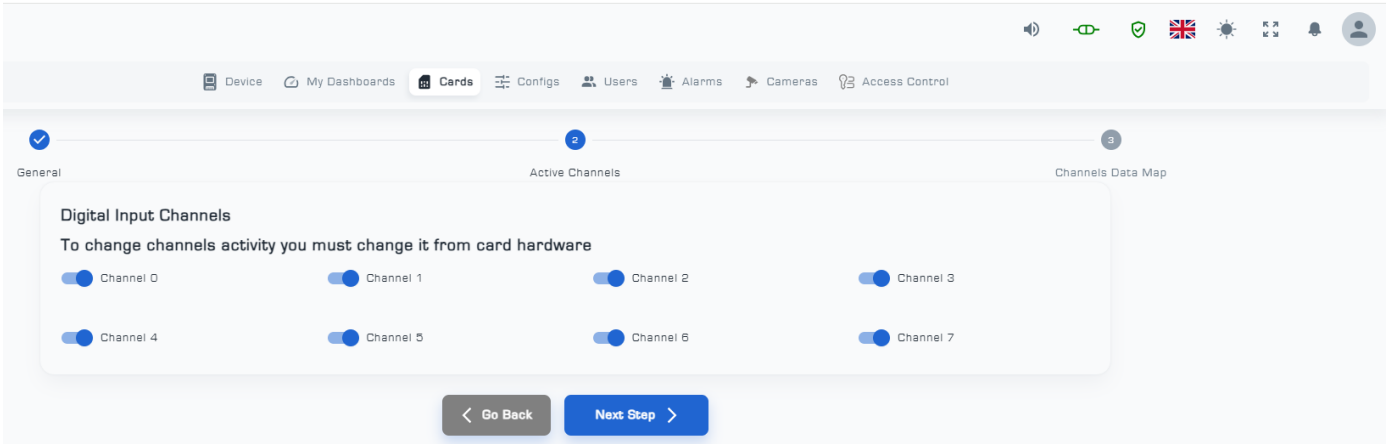
Figure 7: Active Channels Page from the Config Menu

(4) By selecting the "Next Step", you will enter the "Channels Data Map" page, where you can configure the settings for each channel (Figure 8).
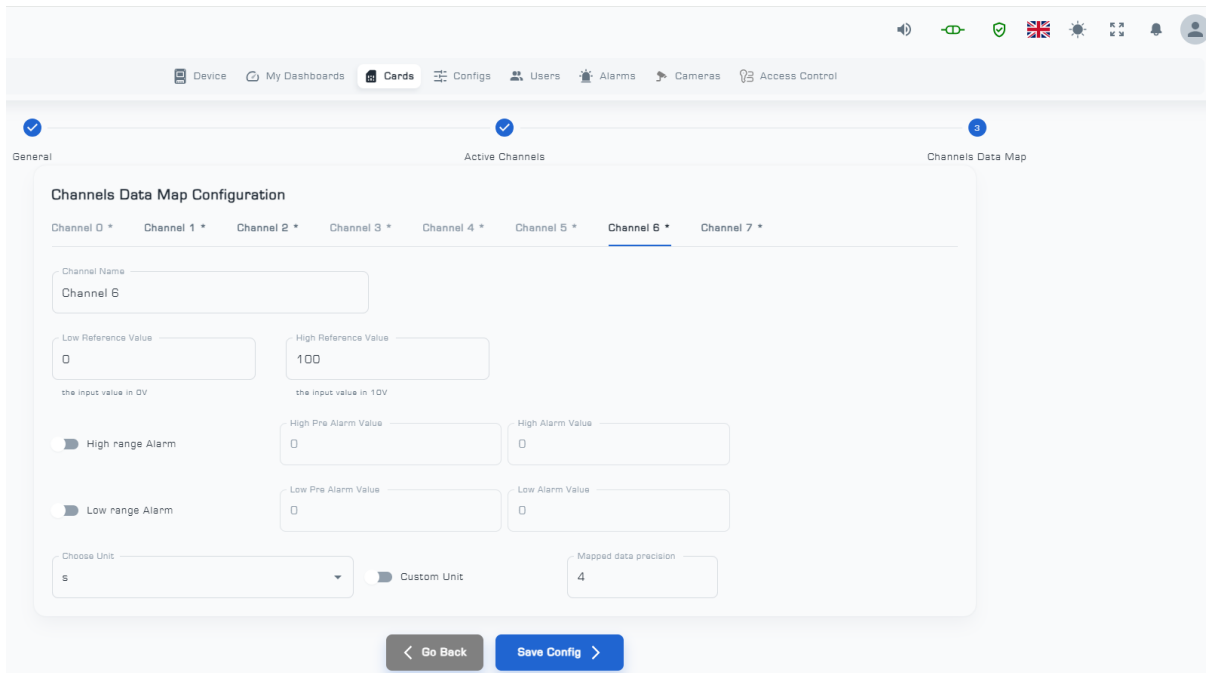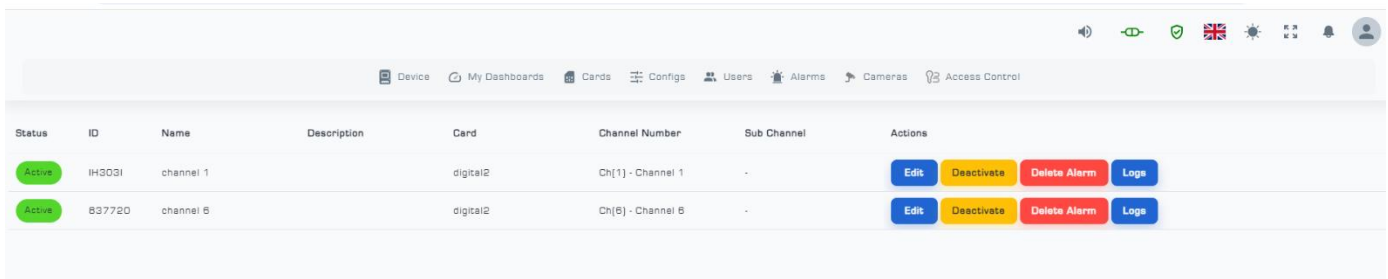
Figure 8: Channels Data Map Page from the Config Menu

(5) Select "Save Config" to save the applied settings (Figure 8).

Note: To deactivate the card, you can do so on the "General" page from the Config menu.

● The "Alarms" menu displays a list of defined alarms for each channel. It allows you to edit alarms, enable or disable them, and delete alarm alerts. Additionally, the "Logs" menu provides a detailed list of alarm information and the time of occurrence (Figure 9).

Figure 9: Page for Viewing Defined Alarms for the Card

● The "Errors Log" menu displays a list of channels that have encountered data transmission errors (

Figure *10*).

Figure 10: Errors Log Page for the Digital Card

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