



SOCIETÀ COOPERATIVA
BILANCIACAI

DILINK: manuale di uso e manutenzione

DILINK: use and maintenance manual

DILINK: manuel d'utilisation et d'entretien



Italiano

English

Français

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1. GENERAL INFORMATION

1.1 Declaration of conformity

DECLARATION OF CONFORMITY

Manufacturer: **SOCIETÀ COOPERATIVA
BILANCIAI**

Address: Via S. Ferrari, 16
41011 Campogalliano (MO)- Italy

Model: **DILINK**

with the options all those described in this manual

conforms to:

Directive EMC 2004/108/EC
Electrical Safety Directive 2006/95/EC
Weighing Instrument Directive 2009/23/EEC (ex 90/384/EC)

Conformity is guaranteed by compliance with the following:

standards EN 61000-6-3, EN 61000-6-4
standards EN60950
standards EN45501

The terminal is also suitable for the creation of approved non-automatic weighing instruments with "CE Type Approval Certificate" in conformance with the requirements of Directive 2009/23/EC (ex 90/384/EC).

The product bears CE marking.

Campogalliano,

Division Management
Franco Brighenti

1.2 Foreword

- ✓ The aim of this manual is to provide the operator, through the use of text and illustrations, with essential information regarding the installation, safe operation and maintenance of the weighing system.
- ✓ This manual must be kept in a safe place where it is readily available for consultation! Always observe the instructions contained in the manual!
- ✓ Safe operation of the system is the responsibility of the operator, who must be fully familiar with it.
- ✓ The user is responsible for ensuring that the installation conforms to the applicable regulations.
- ✓ The equipment must only be installed by specialised personnel who have read and understood this manual.
- ✓ **“Specialised personnel”** means any personnel who, by virtue of the training they have received and their professional experience, have been explicitly authorised by the "System safety supervisor" to install, operate and service the system.
- ✓ Contact your nearest Service Centre if problems occur.
- ✓ Any attempt on the part of the user or unauthorised personnel to dismantle, modify or tamper with the terminal is prohibited. Any such attempt shall invalidate the warranty and relieve the manufacturer from all liability for any damage or injury to persons or property.
- ✓ It is also forbidden to alter or remove the data plates and seals on the terminal. Make sure that all plates and seals are present and legible, if not contact the After-Sales Service.
- ✓ The manufacturer shall not be liable for any damages caused by incorrect handling of the terminal.
- ✓ The information and illustrations contained in this manual were up to date at the time of publication.
- ✓ The manufacturer is committed to a policy of continuous product improvement and parts of the system may therefore be subject to modification.

- ✓ All the technical information contained in this manual remains the exclusive property of the manufacturer and may not be disclosed to third parties.
- ✓ No part of this document may be reproduced or transmitted in any form, including publication in computerised form or on the World Wide WEB, without the explicit written permission of the manufacturer.
- ✓ This manual may not be used for purposes other than those directly related to installation, operation and maintenance of the terminal.
- ✓ In order to more clearly describe certain maintenance or adjustment operations, some of the illustrations in this manual show the weighing system with the safety guards removed. Under no circumstances may the system be operated in these conditions. The safety guards may only be removed for the time strictly required to carry out the required repairs or maintenance work after which they must be fitted back in place.

1.3 Description of the DILINK

The DILINK converts each individual analogue signal from the load cells of a weighbridge into digital form.

It allows users to obtain all the benefits of a digital system when connected to a digital terminal.

The DILINK can convert the signal from up to 8 cells (see Figure 1.1 on page 8). Scales with 10, 12 cells can be converted into digital ones by adding a second DILINK (see Figure 1.2 on page 9).

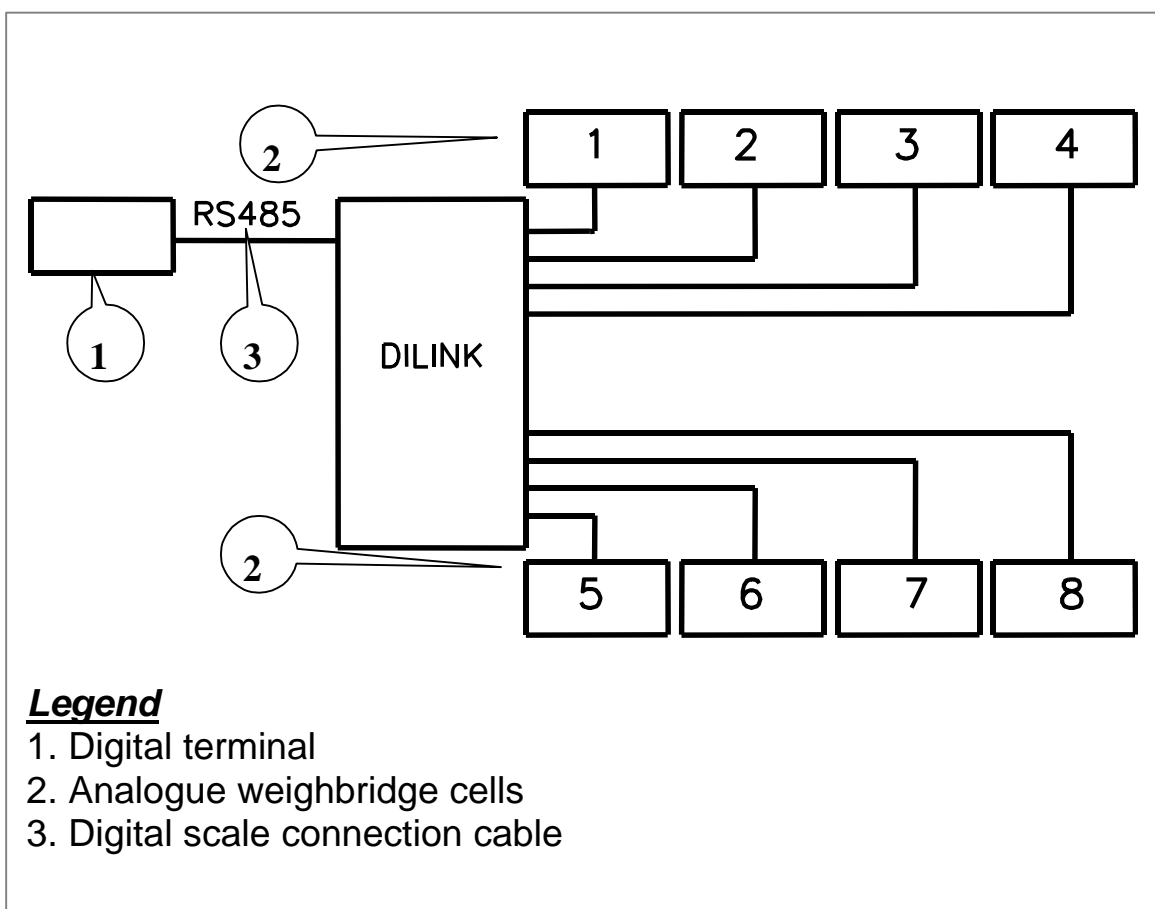
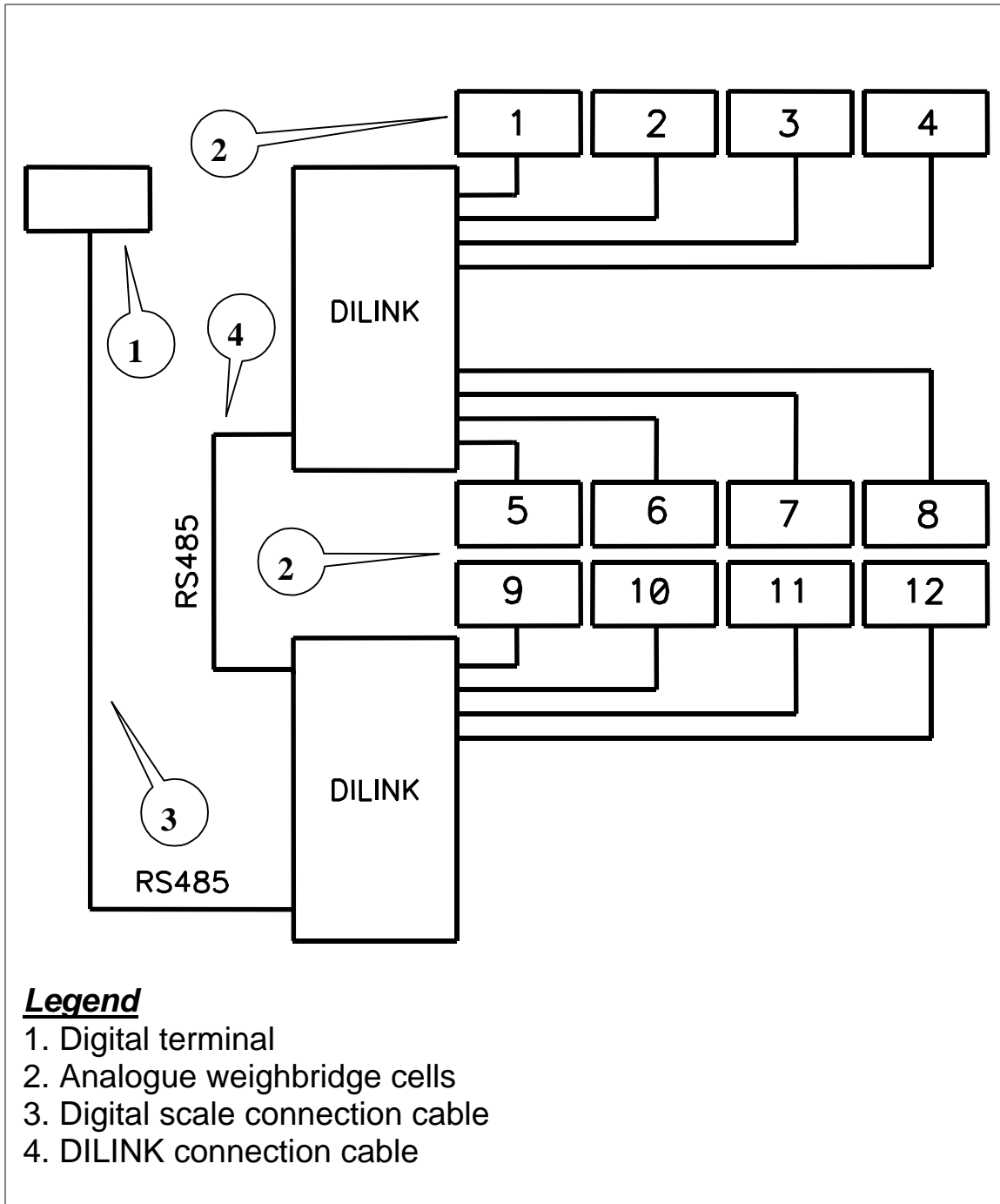


Figure 1.1 – Pinout diagram of a DILINK with 8 cells
(Dilink_CB0001_new.sch)



Legend

- 1. Digital terminal
- 2. Analogue weighbridge cells
- 3. Digital scale connection cable
- 4. DILINK connection cable

Figure 1.2 – Pinout diagram of 2 DILINKES with 12 cells
(*Dilink_CB0001_new.sch*)

1.4 Technical specifications of the DILINK

Power supply:	11-18 V _{dc} (from the terminal)
Maximum power:	5 W
Load cells connected:	up to eight 350 Ohm analogue cells
Minimum impedance:	43 ohm
Load cell power supply:	
Internal resolution:	200000 points @ 12 conv/sec
Resolution in type-approved version:	up to 6000 divisions
Maximum input signal:	23 mV
Sensitivity:	V/division
Full scale stability:	< 5 ppm/°C
Zero stability:	< 5 ppm/°C
Compensated temperature range:	-10 + 40 °C
Operating range:	-10 +50 °C
Protection:	IP65
Humidity:	85 % @ 40°C

1.5 Instructions for disposing of waste electrical or electronic equipment



This symbol on the weighing instrument you have purchased means that:

- this electric or electronic appliance cannot be disposed of as solid municipal waste;
- it must be collected separately;
- it can be returned to the dealer when a new one is purchased;
- improper use or disposal of this appliance may pollute the environment or damage the health of human beings;
- failure to comply with the aforementioned instructions is punished by law.

In particular:

- the external casing and the mechanical components are made of plastic and/or metal materials;
- the casing contains printed circuits with electronic components;
- there is an Ni-Cd or Li battery on the CPU board;
- the electrical connections are made with insulated copper conductors;
- the rechargeable batteries are the Ni-MH or Pb type.

WARNING: Dispose of this appliance by means of separate collection or take it back to the dealer or to a differentiated collection centre.

1.6 How to obtain technical assistance

In the event of any operating faults requiring the intervention of specialised technicians, contact the manufacturer or your nearest Service Centre. To enable us to deal with your request swiftly, always state the serial number of your terminal, which can be found on the seal label. Also provide information about the system in which the terminal is installed.

1.7 Warranty

The warranty conditions are specified in the contract of sale.

2. SAFETY INSTRUCTIONS

2.1 Prohibited uses

The instrument you have purchased is a weighing system and has been designed and manufactured as such. The instrument is primarily intended for weighing goods.

- ✓ It is forbidden to use the instrument without taking the necessary precautions for safe use.
- ✓ Use of the terminal in places with potentially explosive atmospheres or in areas where there is a risk of fire is strictly prohibited.

Any other use shall only be permitted if explicitly authorised by the Manufacturer.

2.2 Regulations

The operating conditions for the electronic terminal are subject to the regulations in force in the country in which the terminal is used. All use of the line in conditions which do not comply with these regulations is prohibited.

2.3 Prescriptions for use

- ✓ Strictly comply with the instructions in this manual during use.
- ✓ In the event of discrepancy between the information in this manual and the instrument purchased, contact your Dealer or the Manufacturer's After-Sales Service for explanations.
- ✓ Always observe the indications given on the warning and danger plates on the DILINK.
- ✓ Make sure that the DILINK is complete with all the safety guards and that the connection cables are in a good condition and connected correctly.
- ✓ Make sure that the terminal connected to the DILINK is always connected to an electrical outlet socket equipped with an efficient earth connection. Make sure that the line complies with the applicable regulations. Make sure that there is no difference in potential between the earth and neutral conductors.
- ✓ If the terminal connected to the DILINK must be connected to other devices (e.g. a computer or other), these devices must be

disconnected from the electricity main before the connections are made.

- ✓ All maintenance work and/or repairs must be carried out by authorised personnel only.
- ✓ Always disconnect the terminal connected to the DILINK from the electricity main and wait a few minutes before accessing the components inside the DILINK itself.
- ✓ Before attempting to access and replace the load cells or to replace the basic boards of the DILINK, always make sure that the terminal that powers the DILINK is disconnected from the electricity main.
- ✓ Always refer to the manual of the main terminal that powers the DILINK.

3.DELIVERY AND INSTALLATION

3.1 Connection to a digital terminal

To connect the DILINK to the terminal, the supply normally includes a pre-wired cable whose 15-pin male connector must be fully inserted into the corresponding female counterpart at the rear of the terminal. The other end must be wired inside the DILINK as shown in the following layout.

JIN CONNECTOR		
PIN	DESCRIPTION (connection towards the digital terminal)	DESCRIPTION (connection inside the DILINK)
1	White	RS485 -
2	Green	RS485 +
3	Black	GND
4	Grey	VIN+
5	Red	VIN+
6	Pink	GND
7	Neutral	CHASSIS

3.2 Serial link terminator connection

If there is one single DILINK, the terminator of the serial link on the JOUT connector must be inserted on to pins 1 and 2 as illustrated in the following layout.

JOUT CONNECTOR PIN	BOARD
1	Terminator
2	Terminator
3	-
4	-
5	-
6	-
7	-

In systems with 10-12 cells and 2 DILINKES, the terminator of the serial link must only be inserted on to pins 1 and 2 of the JOUT connector of DILINK number 1.

3.3 Connection to the analogue load cells

A set of pre-wired cables is normally provided to connect the DILINK to analogue load cells. Cell numbering must be the same as that of the board terminals. If the second DILINK for systems with 10-12 cells is used, cell numbering is as follows:

Cell 9 terminal 1 second DILINK
Cell 10 terminal 2 second DILINK
Cell 11 terminal 3 second DILINK
Cell 12 terminal 4 second DILINK

The connections on the DILINK side must be made as shown in the layout below:

JCEL TERMINAL PIN	DESCRIPTION (inside the DILINK)
1	EXC+
2	EXC-
3	SCH
4	SIG+
5	SIG-

3.4 Connection link of the second DILINK

In systems with 10 or 12 cells and 2 DILINKES, the wiring must be made in the following way (consult point 4 of Figure 1.2 on page 9:

- ✓ to connect the load cells, comply with the instructions in *par. 3.3 on page 16*;
- ✓ connects the terminal's power cable inside DILINK number 2 as illustrated in *par.3.1 on page 15*;
- ✓ connect the connection cable of the two DILINKES as shown in the following layout;
- ✓ insert the serial link terminator on to the JOUT connector of DILINK number 1.

JOUT CONNECTOR PIN DILINK 2	JIN CONNECTOR PIN DILINK 1
7-----	7
6	6
5	5
4-----	4
3-----	3
2-----	2
1-----	1

3.5 Earth connection of the DILINK

Connect the DILINK to the earth connection as shown in the pinout diagrams in the manuals of the scale or platform connected. *Figure 3.1* on page 18 shows where to connect the earth wire on the front of the DILINK.

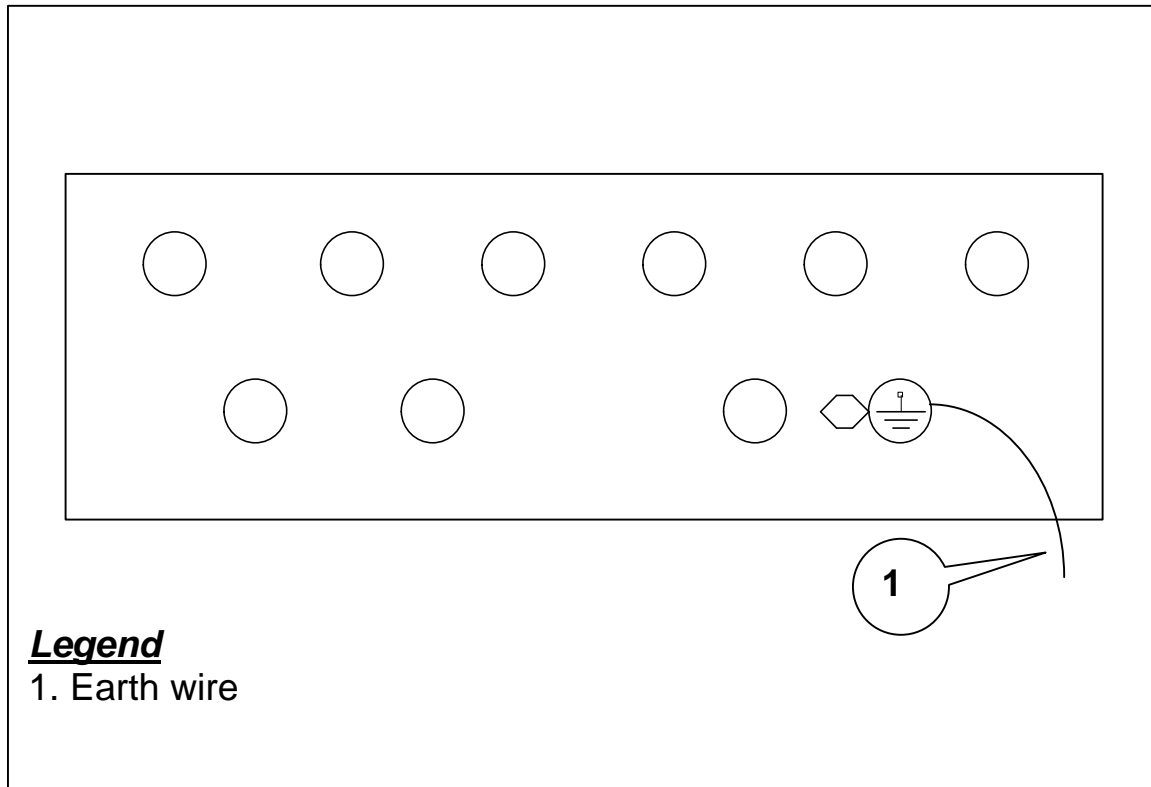


Figure 3.1 – Front of the DILINK (*Dilink_CB0003_new.sch*)

4. USE OF THE DILINK

4.1 Operation

DILINK operation can be programmed by selecting the eight switches on the board's dip switch.

Dip switch configurations:

DIP1 OFF: DILINK number 1

DIP1 ON: DILINK number 2

DIP2 OFF, DIP3 OFF: weighbridge with 2 cells (for second DILINK 10 cells)

DIP2 OFF, DIP3 ON : weighbridge with 4 cells (for second DILINK 12 cells)

DIP2 ON , DIP3 OFF : weighbridge with 6 cells

DIP2 ON , DIP3 ON : weighbridge with 8 cells

DIP4 OFF: input with 4 wires on converter 1(A) and 1(B)

DIP5 ON : FILTER ON

DIP5 OFF: FILTER OFF

DIP6 OFF: UART1 in RS485 (always OFF)

DIP7 OFF: BAUD RATE UART1 38400 (DEFAULT)

DIP8 ON : SETUP input

4.2 Operating examples

With one single DILINK :

✓ weighbridge with 6 cells and 4 wires: connect the cells to their respective terminals and position DIP1 OFF, DIP2 ON, DIP3 OFF, DIP4 OFF, DIP5 ON, DIP6 OFF, DIP7 OFF and DIP8 OFF.

✓ weighbridge with 8 cells and 4 wires: connect the cells to their respective terminals and position DIP1 OFF, DIP2 ON, DIP3 ON, DIP4 OFF, DIP5 ON, DIP6 OFF, DIP7 OFF and DIP8 OFF.

With two DILINKES :

✓ weighbridge with 10 cells and 4 wires: connect the first 8 cells to their respective terminals of the first DILINK and position DIP1 OFF, DIP2 ON, DIP3 ON, DIP4 OFF, DIP5 ON, DIP6 OFF, DIP7 OFF and DIP8 OFF in this same DILINK.

Connect the other 2 cells in the second DILINK (see *par. 3.3 on page 16*) and position DIP1 ON, DIP2 OFF, DIP3 OFF, DIP4 OFF, DIP5 ON, DIP6 OFF, DIP7 OFF and DIP8 OFF in this same DILINK.

✓ weighbridge with 12 cells and 4 wires: connect the first 8 cells to their respective terminals of the first DILINK and position DIP1 OFF, DIP2 ON, DIP3 ON, DIP4 OFF, DIP5 ON, DIP6 OFF, DIP7 OFF and DIP8 OFF in this same DILINK.

Connect the other 4 cells in the second DILINK (see *par. 3.3 on page 16*) and position DIP1 ON, DIP2 OFF, DIP3 ON, DIP4 OFF, DIP5 ON, DIP6 OFF, DIP7 OFF and DIP8 OFF in the same DILINK.

4.3 Data setting for equipments with odd load cells

If the number N of the cells in the system is odd, set N+1 for the number of cells on the DILINK dip-switch and position plug 46050097 on the connector of cell N+1.

5. SOFTWARE UPGRADING

Contact the Manufacturer's Assistance Service.



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