LIN Knob

COMK/LINCS

Installation and Commissioning Manual

Read this manual before installing the device!
Follow the safety instructions to avoid damage on the device

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Content

1. Introduction

The LIN Knob is the result of intensive research and development work. It offers a long-life knob, over of 30.000 working hours, based on a hall sensor with easy operation that implements Double-Sided Control (DSC) and is able to work either on clockwise or counter-clockwise mode.

It has been designed to work with E.G.O. Quad+ and Atics induction generation technologies and it is compatible with other LIN Bus devices, such as FlexTouch and Display.

The Potentiometer Knob cannot be used together with LIN Knob.

Backward compatibility: LIN knob control can be used with E.G.O. commercial induction generators from week 40/2010 in Atics and week 01/2010 in Quad+.

2. Safety

The general safety prevention regulations must be complied with when handling LIN Knob**.**

2.1 Safety Instructions

Assembly	Handle and fixation screws shall be fixed in a reliable manner to not work loose in normal operation.
	For protection of operating personnel, the LIN knob shall be connected to Safety extra low voltage part and conform to safety Class III and at least to protection IP53. After assembling, protection against electrical live parts must be ensured.
Electrical connections	Electrical installation must be made by qualified persons in accordance to the relevant standards.
	Voltage must be according to product specification on the identification label. Incorrect voltage can lead to damage.
	Appliance must be switched off before connecting to main supply.
Operation	This unit is only for commercial cooking, for induction-capable cookware and for indoor use. Any other use may result in unexpected hazards.
	Switch off cooking zone after use by placing the LIN Knob at standby position. Do not rely on the pot detection mode.
Personnel	Children should be supervised to ensure that the equipment is not played with.
Maintenance and repair	Maintenance and repair work may only be performed by qualified personnel authorised by E.G.O. Appliance Controls S.L.U.
	Disconnect electrical supply before removing the LIN Knob.
	Do not clean the LIN Knob with a water jet.
	The LIN Knobs with a defect or damage must not be installed.
	Damaged LIN Knobs must be sent to E.G.O. Appliance Controls S.L.U. for repair.
	For safety reasons, only use original spare parts and accessories.
	Dispose of LIN Knob according to national and regional regulations.
Emergency	Immediately switch off appliance and disconnect it from electrical supply.
Fire	Burning cooking units should only be extinguished with a carbon dioxide (CO_2) extinguisher. Never use water or powder-type extinguishers.

3. Assembly

The basic dimensions of the LIN knob are depicted below.

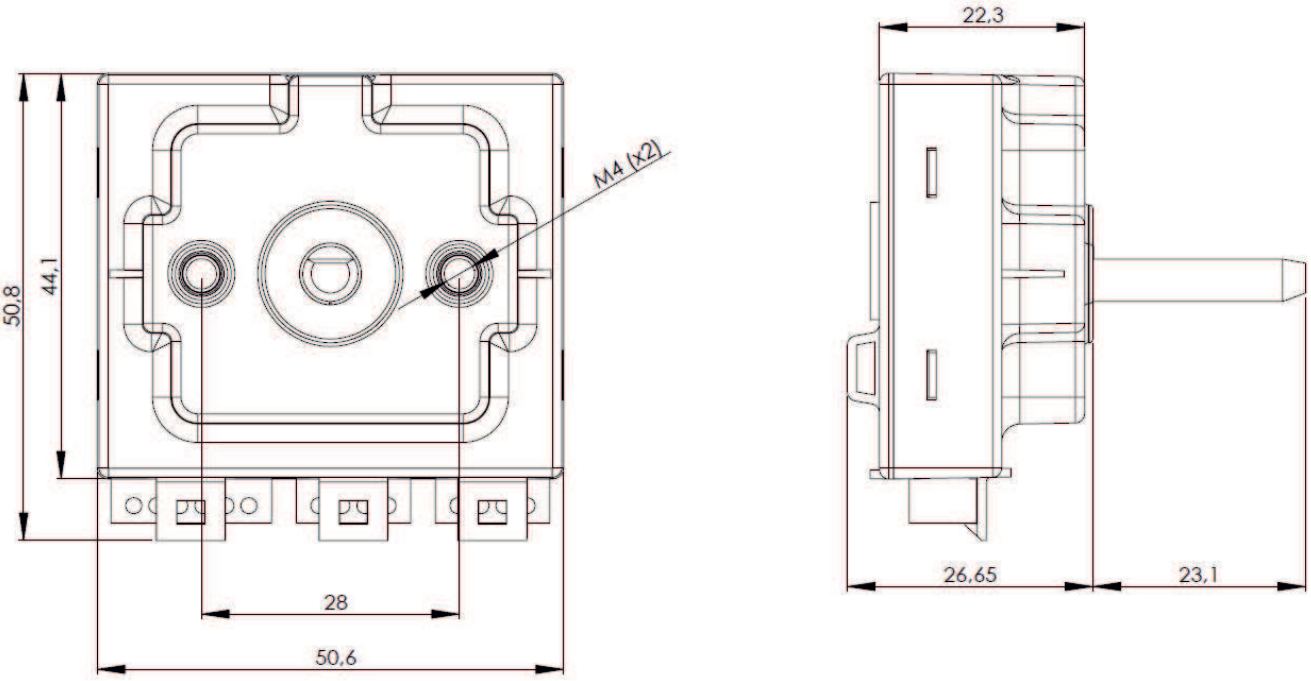


Figure 1

LIN knob is anchored to the main structure by means of two bolts M4 x 6 mm. (see Figure 2

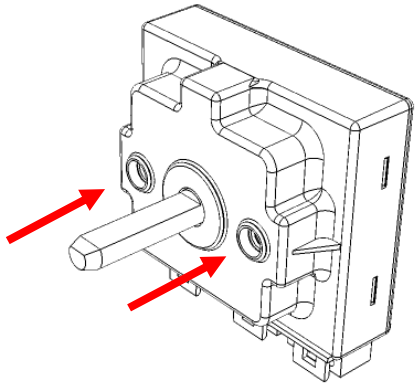


Figure 2

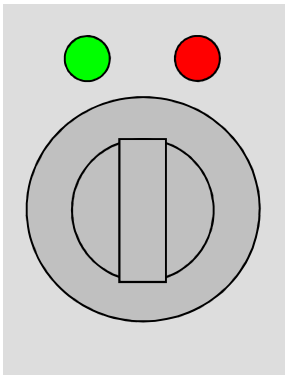
The tightening torque of any screw depends on the material, type, thread and material of the head of the screw, nut and the material on which is tightened.

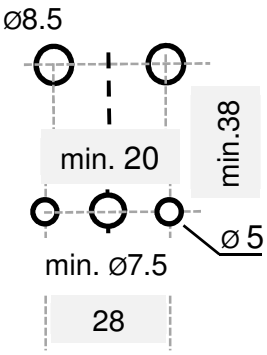
For instance, the tightening torque recommended is 2.5 Nm for stainless steel screws A2 A70, without washer and installation bracket INOX 430 satin surface quality N8.

Handles shall be fixed in a reliable manner to not work loose in normal operation according to IEC 60335-1. The compliance has to be checked on the final appliance. The handles are not included in the package. They have to be ordered separately according to the lamp sizes and the required cable length.

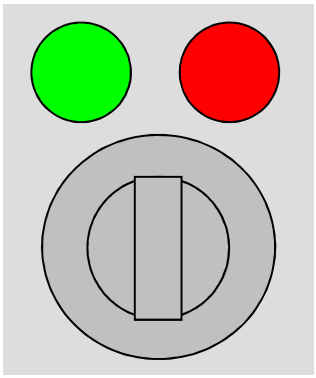
3.1 Hole pattern for knob and lamps

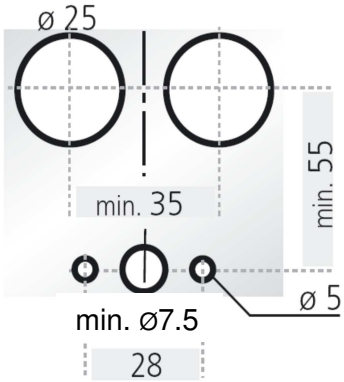
Small Lamps





Big Lamps





4. Configuration

The configuration of the LIN Knob can be determined by using the DIP Switch in the back part. The handling of DIP Switch can be made using a small screwdriver.

Before modifying the setting of the DIP switch, the corresponding generator must be disconnected from mains voltage.

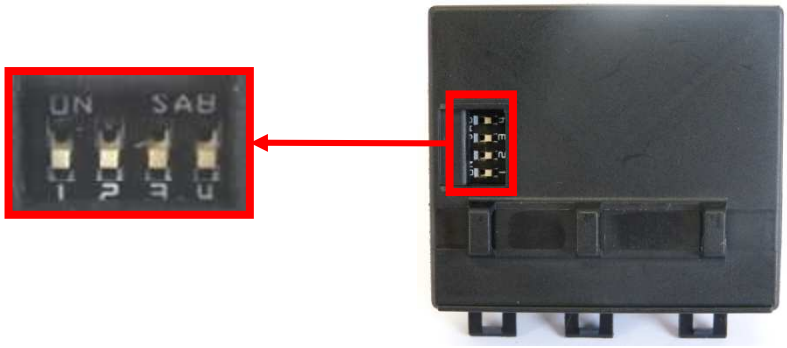


Figure 3

	DIP SWITCH			
Pin position	1	2	3	4
Description	Node Id		DSC*	Rotation
Configuration	0..3		0=OFF 1=ON	0=CW** 1=CCW**

**DSC: Double-Sided Control*
*** CW: Clockwise; CCW: Counter-Clockwise*

Table 1

	Pin1	Pin2	Node Id	Control
	OFF	OFF	0	A
	ON	OFF	1	B
	OFF	ON	2	C
	ON	ON	3	D

Node Id
Identifies the LIN Knob address. Up to 4 addresses are possible.

Two or more knobs cannot have the same Node Id. configured, except when using DSC.

Check sections 4 and 5.5 to address the LIN Knob to Atics and Quad+ respectively.

DSC
Double-Sided Control

- OFF: DSC disabled.
- ON: DSC enabled.

Rotation

- CW: Clockwise (ON by turning right).
- CCW: Counter-clockwise (ON by turning left).

5. Wiring

LIN Knob is connected to the generator by wiring it to the LIN connector of the generator.

Several LIN Knobs can be added to the LIN Bus by their respective LIN Bus connectors. Other LIN devices (e.g.: FlexTouch, Display) can be added to the LIN Bus by their respective LIN Bus connectors.

When using long cable, use fixing elements to hold the cable every 1.5 m so the weight of the cable does not disconnect it.

The maximal length of the cable between the generator and the first LIN Knob must be no longer than 7 m.

The total length of the LIN Bus must be no longer than 10 m.

Separate the bus cable and coils cable a minimum distance of 15 cm to avoid communication interferences.

5.1 Connectors

The LIN knob has two types of connectors, as depicted below:

- LIN Bus connectors (x2).
- Lamps connector.

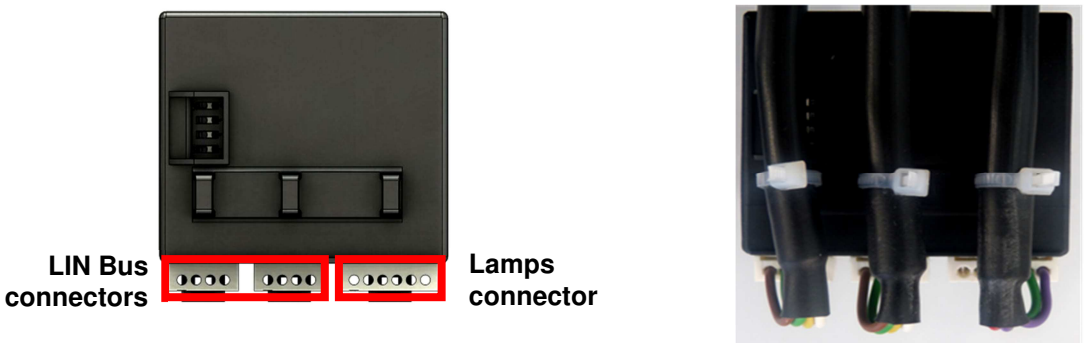


Figure 4

Do not overstress the connectors when attaching them in the knob.

Cables must be secured by cable ties.

5.2 LIN Bus connection cable

Cable List from generator to LIN Knob:

Generator	Length	Part No.	Description
Vario or Intro	0.5 m	78.38900.070-00	EGO COMV/LR4/LP4/0.5M/U
	1.5 m	78.38900.071-00	EGO COMV/LR4/LP4/1.5M/U
	3.0 m	78.38900.072-00	EGO COMV/LR4/LP4/3.0M/U
	5.0 m	78.38900.073-00	EGO COMV/LR4/LP4/5.0M/U
	7.0 m	78.38900.074-00	EGO COMV/LR4/LP4/7.0M/U
Snap-In	1.5 m	78.38900.080-00	EGO COMV/LR4/LD9/1.5M/U

Table 2

Cable List between LIN knobs:

Generator	Length	Part No.	Description
All	0.3 m	78.38900.065-00	EGO COMV/LR4/LR4/0.3M/U
	0.5 m	78.38900.060-00	EGO COMV/LR4/LR4/0.5M/U
	1.5 m	78.38900.061-00	EGO COMV/LR4/LR4/1.5M/U
	3.0 m	78.38900.062-00	EGO COMV/LR4/LR4/3.0M/U

Table 3

5.3 Lamps

List of lamps for LIN knob:

Length	Part No.	Description	Lamps
0.2 m	78.94020.007-00	EGO COML/GN+RT12K/LR6/0.2M	Green and red small
	78.94020.008-00	EGO COML/GN12K/LR6/0.2M	Green small
	78.94020.009-00	EGO COML/GN+RT12G/LR6/0.2M	Green and red big
	78.94020.010-00	EGO COML/GN12G/LR6/0.2M	Green big
0.5 m	78.94020.001-00	EGO COML/GN+RT12K/LR6/0.5M	Green and red small
	78.94020.002-00	EGO COML/GN12K/LR6/0.5M	Green small
	78.94020.003-00	EGO COML/GN+RT12G/LR6/0.5M	Green and red big
	78.94020.004-00	EGO COML/GN12G/LR6/0.5M	Green big
	78.94020.005-00	EGO COML/GN+RT12M/LR6/0.5m	Fastons without lamps

Table 4

The small and big lamps dimensions are depicted below:

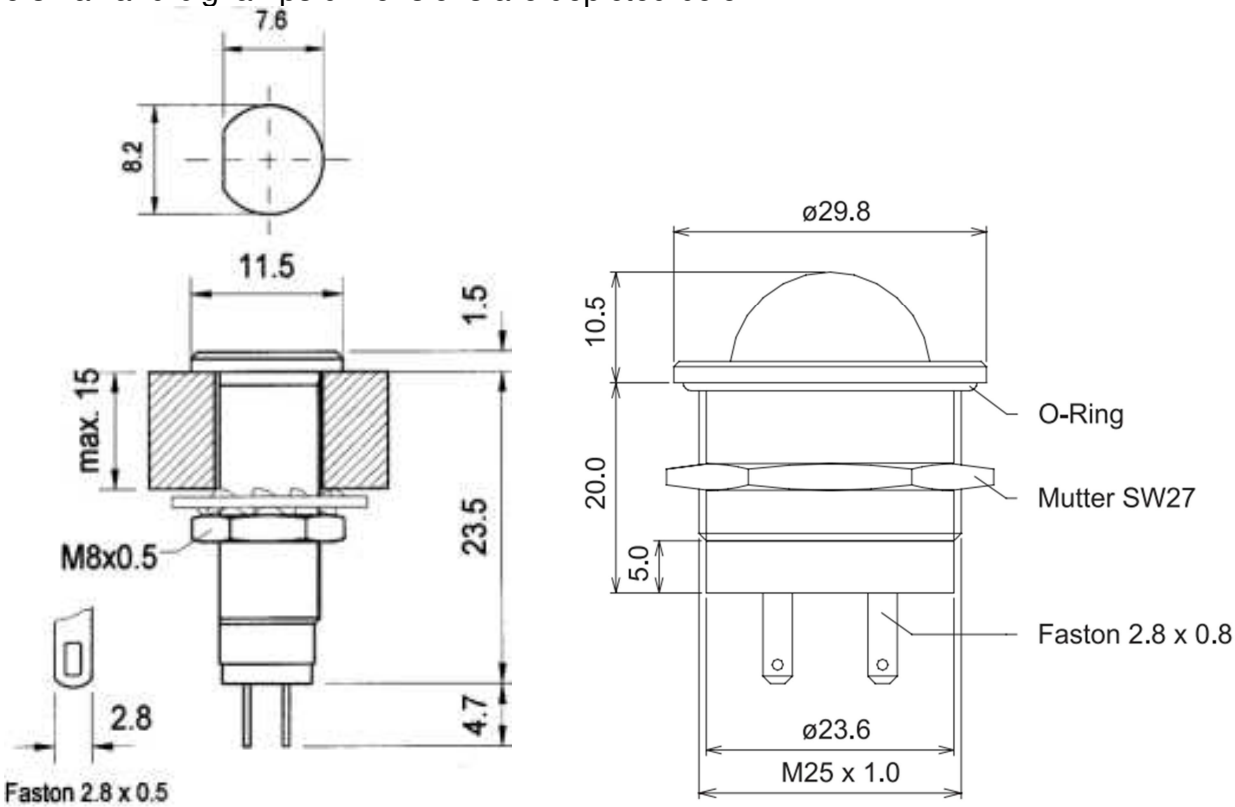


Figure 5

The polarity of the terminals of the lamps is depicted below:

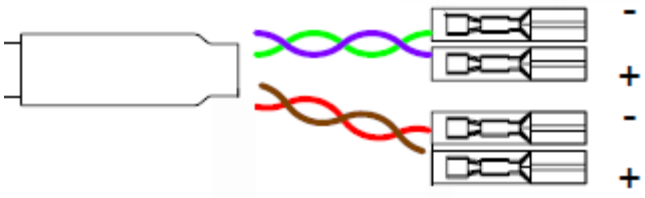


Figure 6

5.4 Connection to Atics

Connect the LIN knob by one of its LIN Bus connectors (not relevant which one), to the 4-pin LIN connector of the generator.
Configure the DIP switch as Node Id. 0 (see **section 4**).

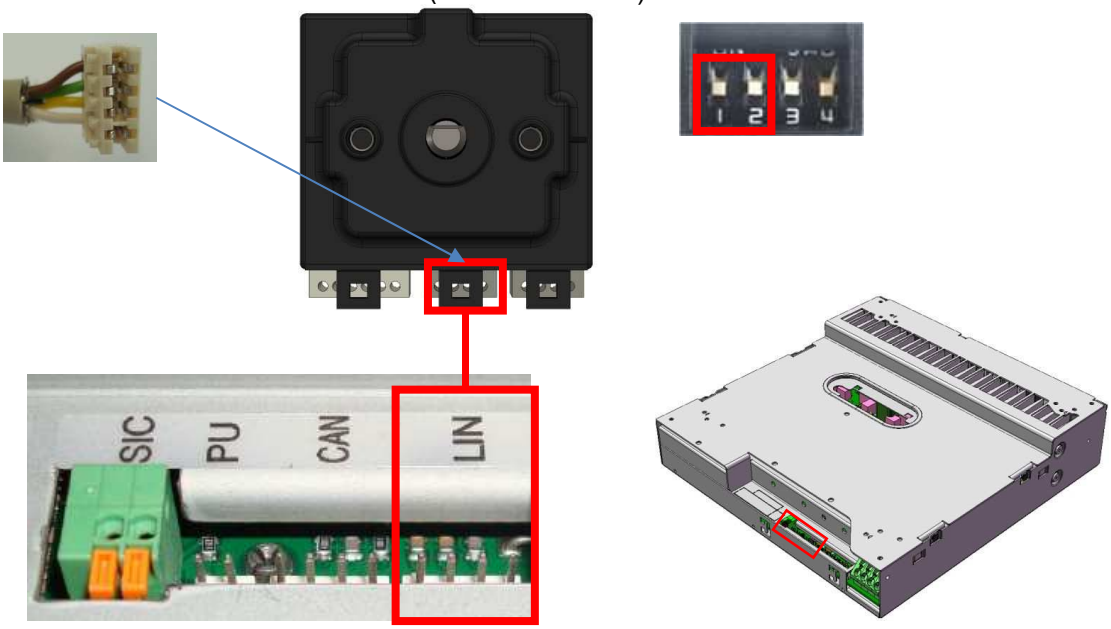


Figure 7

5.5 Connection to Quad+

Connect the LIN knob by one of its LIN Bus connectors (not relevant which one, A or B), to the 4-pin LIN connector of the generator.
Connect the rest of the LIN Knobs to the free LIN Bus connector of the previous knob.

Configure the DIP switch to address the LIN knob to the different controls (check **section 4).**

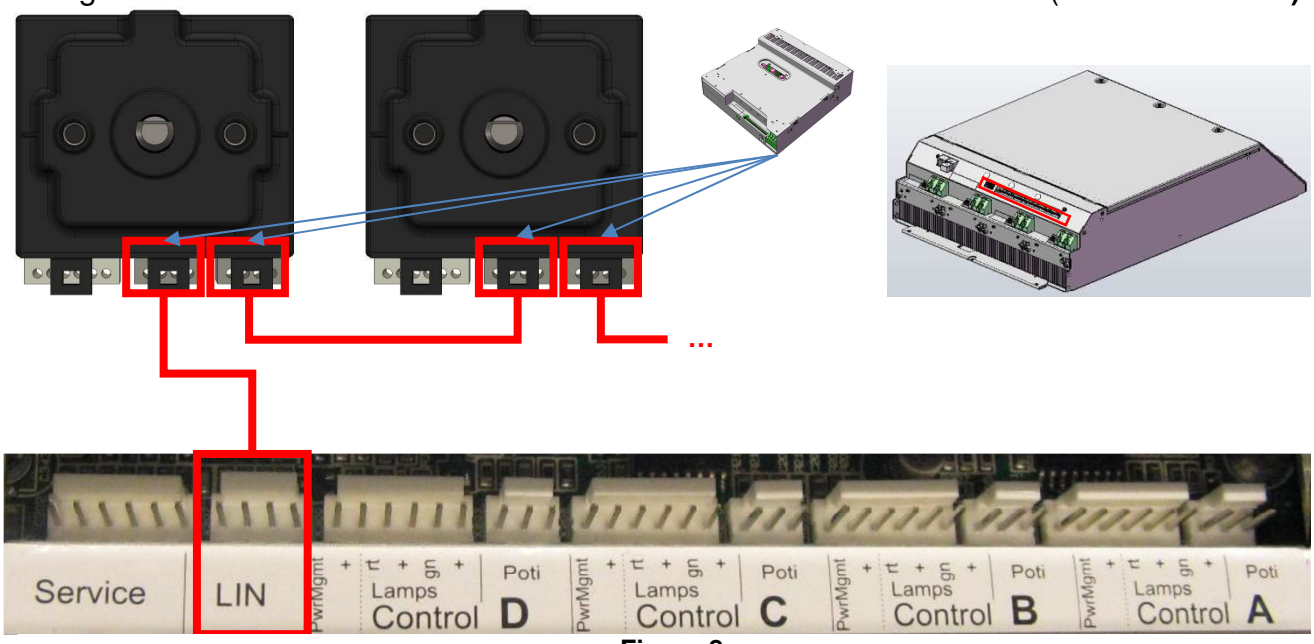


Figure 8

Check the control assignment in the allocation matrix label of the equipment.

6. Double-Sided functionality

The LIN Knob implements Double-Sided Control functionality, which means that one specific cooking zone can be controlled by 2 knobs.

To configure 2 knobs with DSC, set the same address in both of them and enable the DSC option of the DIP switch in one of them (see **section 4**).

Example:

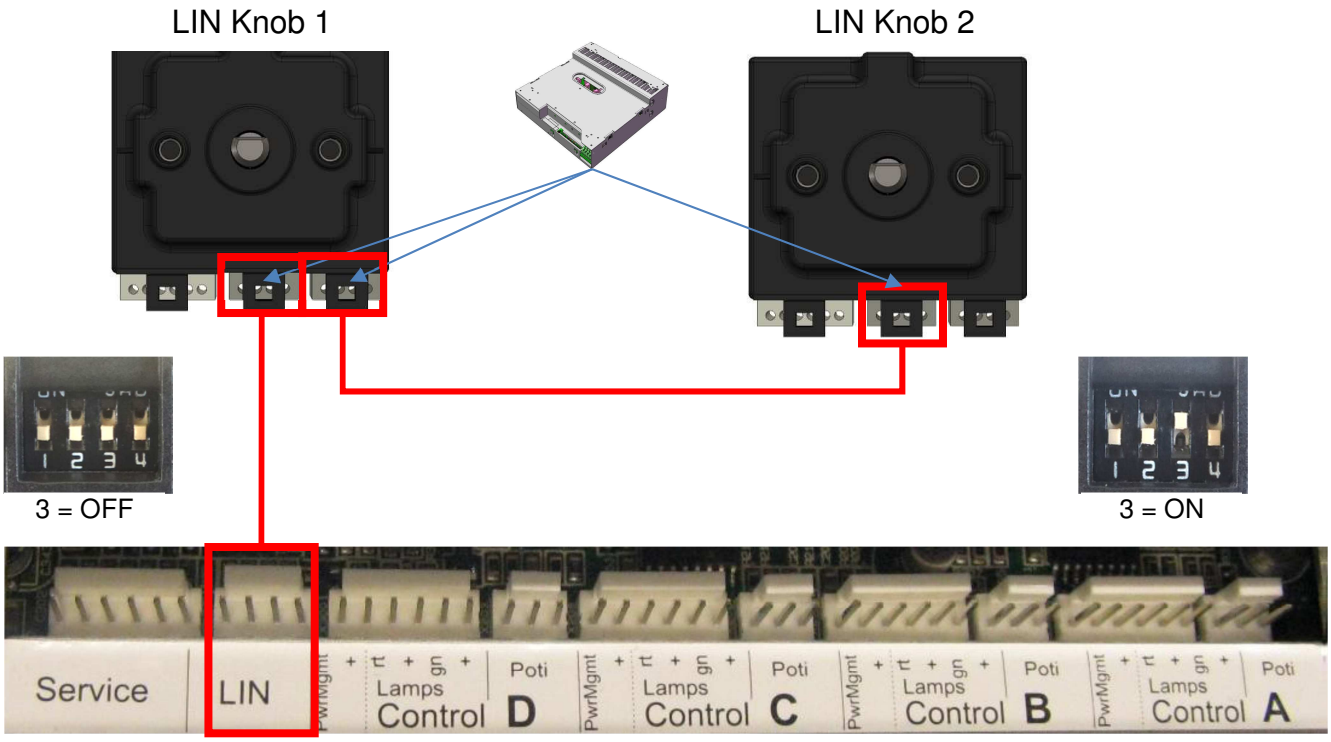


Figure 9

In the example above, two LIN knobs connected to Quad+ are address to the same Node Id (Node Id 0, control A) and one of them has the DSC enabled.

For safety reasons, when using DSC, all LIN Knobs must return to standby position before any of them could command the cooking zone.

7. Use with FlexTouch

FlexTouch can be used together with LIN Knob when connecting to Quad+. The controls can be assigned by configuring the DIP switch of both elements (check **section 4** of this manual for LIN Knob and FlexTouch user manual for this device).

It is not possible to use DSC functionality when using FlexTouch and LIN Knob together.

Example: Configuration for several cooking zones

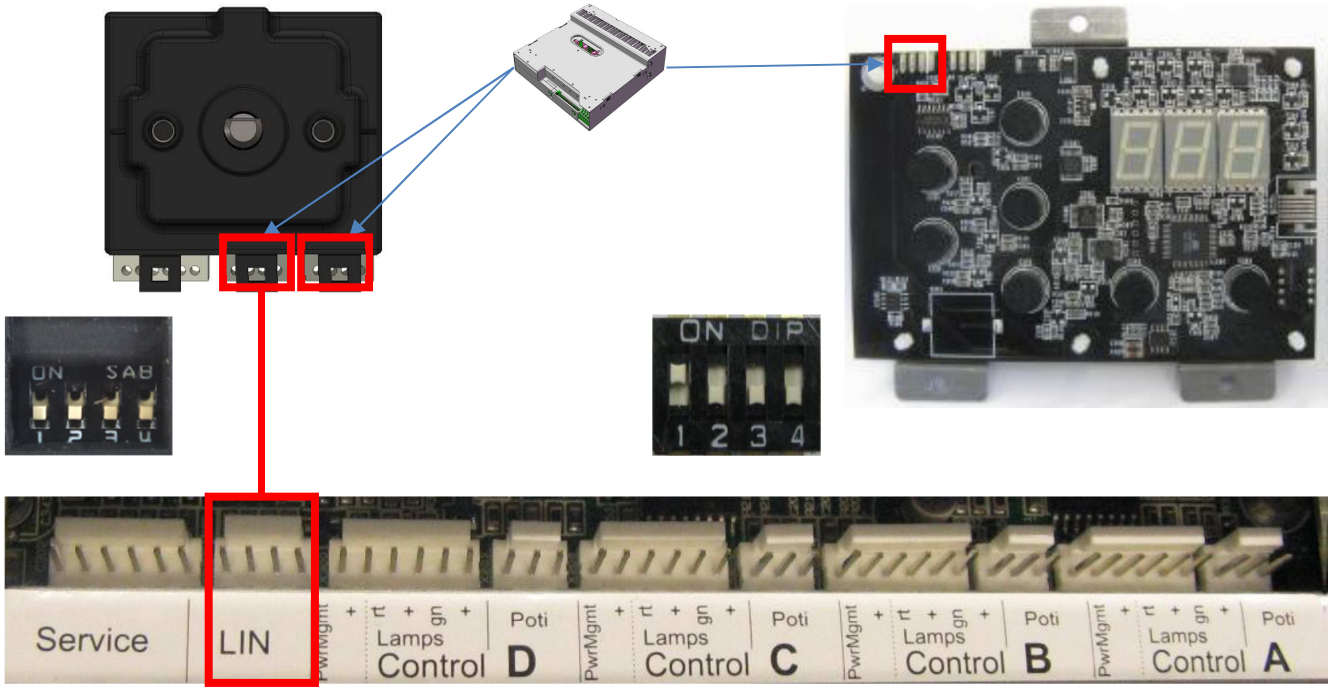
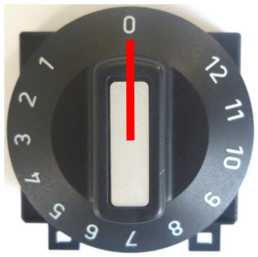


Figure 10

In the example above, LIN Knob is addressed to Control A (pin 1 and pin 2 OFF) and FlexTouch is addressed to control B (pin 1 ON, pin 2 OFF).

8. Operation

The stand-by position is at 0º, on the 12 o'clock position.



Stand-by position

To start running the cooking zone, turn clockwise or counter-clockwise (depending on the configuration of the rotation, see **Section 4**) until a "click" sounds. Set the desired set point by rotating the handle.

To stop running the cooking zone, return the LIN Knob to the stand-by position.

9. Error mode

There are two different error types:

- Generator errors (E1)
- Digital control errors (E2)

Generator errors (E1). Check the Atics and Quad+ for the fault messages coming from the generator (E1).

Digital control errors (E2). The error list for LIN knob is described in Section 9.1.

When 7-segment display used, the error can be read directly from the display by E1 or E2 and the error number.

When using lamps, the error message is displayed according to the duration and frequency of the green light blinking. The green lamp lights one time long, then one flash (E1) or two flashes (E2) and then short regular flashes. The number of these short flashes is the error number. This pattern is constantly repeated.

Example: error code E2 05 from the digital control:

The red fault lamp remains on as long as an error exists.

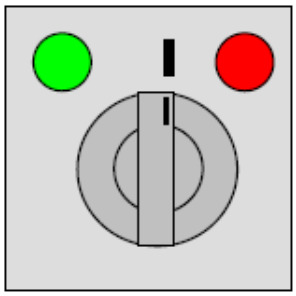


Figure 11. Display of error message in lamps.

9.1 Fault message from the digital control (E2)

Error No.	Name	Cause	Corrective action
E2 ↔ 02	System integrity	Damaged LIN Knob	Replace the LIN Knob
E2 ↔ 03	Double-Sided Control lost	One of Double-Sided nodes damaged	Check LIN Bus Connection
E2 ↔ 05	LIN Bus opened	No detection of communication	Check LIN Bus// Replace connecting cable
E2 ↔ 06	LIN Bus collision	Address conflict	Check Node Id// Check LIN Bus Connection
E2 ↔ 10	Wiring interruption	Faulty connection between key pad and generator	Replace connecting cable
	Faulty ID	Digital control has a faulty ID	Switch the generator off, adjust the DIP-switches correctly
E2 ↔ 14	Supply voltage	Problem with supply voltage of the key pad	Check connecting cable// Replace the LIN knob
E2 ↔ 20	Compatibility of LIN version	LIN version is not compatible	Contact customer support
E2 ↔ ΦΦ	Unknown error	An error occurred, its cause is unknown	Contact customer support

Table 5. Error number, meaning, cause and corrective action.

10. Standards

The **LIN Knob** conforms to the following EU directives and standards.

EMC directive	2014/30/EC
Low voltage directive (LVD)	2014/35/EC
EMC	EN 55014-1:2006+A1:2009+A2:2011 CISPR 14-1:2005+A1:2008+A2:2011
	EN 55014-2:2015 CISPR 14-2:2015
	EN 61000-6-2:2005+CORR:2005 IEC 61000-6-2:2005
	EN 61000-6-3:2007+A1:2011 IEC 61000-6-3:2006+A1:2010
Low voltage directive	EN 60335-1:2012+A11:2014 IEC 60335-1:2010
	EN 60335-2-6:2003+A1:2005+A2:2008+A11:2010++A12:2012+A13:20143+CORR:2007 IEC 60335-2-6:2002+A1:2004+A2:2008
	EN 60335-2-36:2002+A1:2004+A2:2008+A11:2012+CORR:2007 IEC 60335-2-36:2002+A1:2004+A2:2008+A11:2012
	EN 60730-1:2011 IEC 60730-1:2010
	EN 60730-2-11:2008 IEC 60730-2-11:2006

The installation of **LIN Knob** to a finished cooking appliance must also comply with the national electrical standards and with all the local restrictions and laws. The manufacturer of the finished cooking appliance is responsible for the certification.

11. Technical Data

Specification	Value
Life expectancy:	30.000 h
Standby Power:	< 0.1 W
Power Consumption (without Lamps)	< 0.5 W
Pull-off force (Handle):	> 50 N
Working Temperature:	0 °C to 85 °C
Storage Temperature:	-40 ºC to 85 ºC
Weight:	350 g
Max. LIN Bus length:	7 m Generator-LIN Knob Total no longer than 10 m

The installation must be performed so that EGO switches are always protected against ingress of moisture.

It should be stored in dry and indoors. In addition, it is recommended that EGO switches are stored in suitable containers for electrical switchgear.

12. Service

Our qualified employees provide the following services:

- Repair / maintenance of the unit with and without warranty.
- Sales of accessories.
- Advice for installation / use / maintenance.

12.1 Warranty

- 3 years from selling date (warranty as described in the purchase contract)
- E.G.O. Appliance Controls S.L.U. is exempt from liability for damage due to incorrect handling