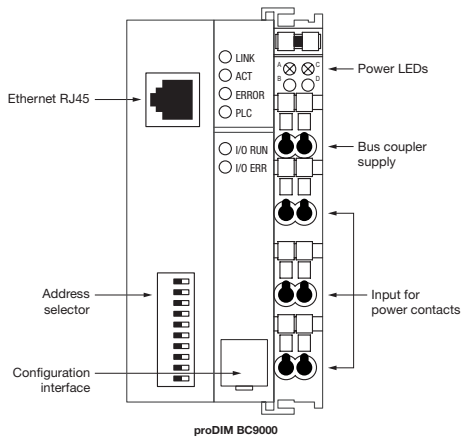


proDIM BC9000



The proDIM product family is used in conjunction with winDIM@net software to perform lighting management tasks. The proDIM product portfolio provides the hardware basis for the winDIM@net lighting management system. proDIM BC9000 is the central controller – a central modular gateway (translation module from TCP/IP to field level).

proDIM BC9000 has a 10/100 Mbit/s Ethernet connection and uses the TCP/IP protocol. Each proDIM BC9000 unit has its own IP address. This means that several proDIM BC9000 units can be networked together and programmed with the winDIM@net software.

The combination of winDIM@net lighting management software on the server and the modular gateway/communication system enables communication

to take place via standard Ethernet (TCP/IP) with DALI, actions to be triggered and status information to be received from the DALI bus.

Gateways are needed to ensure that the winDIM@net software can communicate in the DALI direction and that the DALI system can issue status messages (such as lamp faults). Additional interface terminals (such as the proDIM KL6811 DALI terminal) are also needed for special functions.

The combination of these interface modules and the proDIM BC9000 produces a modular gateway/communication system. The entire communication from the field level (actuators such as ECGs) to the winDIM@net lighting management software is managed via proDIM BC9000. It also handles all

the communication in the other direction, from the lighting management level (server) to the actuators (ECGs).

- Bus terminal controller with field bus interface (RJ-45) for Ethernet
- Decentralised intelligence in the Ethernet system
- IP address can be set via DHCP or DIP switches
- Connection capacity for up to 47 bus terminals (a maximum of 10 of which may be DALI bus terminals)

Approvals:
 EN 60068-2-6
 EN 60068-2-27/29
 EN 61000-6-2
 EN 61000-6-4

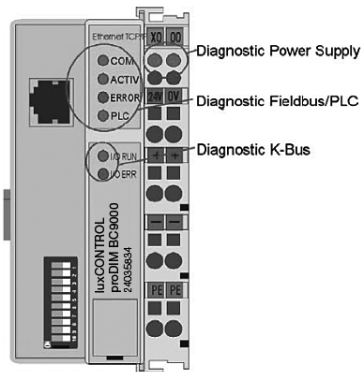
Glow-wire test
 according to EN 60598-1 passed.

Type	proDIM BC9000
Article number	24035834
Power supply	24 V DC
Input current	70 mA + terminals
Power consumption	approx. 50 W full loaded
Bus connection	1 x RJ 45 (TCP/IP)
Power contact voltage	24 V DC
max. number of KL6811	10
max. number of analogue inputs (KL3454)	20
max. number of digital inputs (KL1104, KL1722)	64
max. number of KL9010	1
Operating temperature	0 to +55 °C
Storage temperature	-25 to +85 °C
Weight	approx. 190 g
Dimensions L x W x H	100 x 49 x 68 mm
Relative humidity	95 %, no condensation
Mounting	on DIN rail
Installation position	variable
Protection type	IP 20

Diagnostic LEDs

After switching on, the Bus Coupler immediately checks the connected configuration. Error-free start-up is indicated when the red I/O ERR LED goes out. If the I/O ERR LED blinks, an error in the area of the terminals is indicated. The error code can be determined from the frequency and number of blinks. This permits rapid rectification of the error. The Bus Coupler has two groups of LEDs for the display of status. The upper group with four LEDs indicates the status of the Network.

On the upper right hand side of the Bus Couplers are two more green LEDs that indicate the supply voltage. The left hand LED indicates the presence of the 24 V supply for the Bus Coupler. The right hand LED indicates the presence of the supply to the power contacts.



LEDs for power supply diagnosis

LED	Meaning
Left LED off	Bus coupler has no power
Right LED off	No 24V DC power connected to the power contacts

LEDs for fieldbus diagnosis

LED	On	Off
LINK	Physical connection present	No physical connection present
ACT	Flashing: Bus traffic present	No bus traffic (bus idle)
ERROR	The LED flashes slowly if DHCP or BootP is active but the Bus Coupler has not yet received an IP address. The LED flashes rapidly (5 times, only when switching on); the Bus Coupler is addressed with ARP. The settings on the DIP SWITCH are not valid.	No error.
PLC	PLC program is in RUN mode. The LED flashes while the boot project is being saved.	Programmed PLC software was deleted. Coupler software has to be new programmed. Please go in contact with TridonicAtco. PLC program is in stop mode.

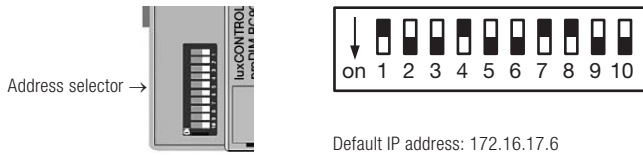
LEDs for K-Bus diagnosis

Error code	Error code argument	Description	Remedy
Persistent, continuous blinking		EMC problems	<ul style="list-style-type: none"> Check power supply for overvoltage or undervoltage peaks Implement EMC measures If a K-Bus error is present, it can be localised by a restart of the coupler (by switching it off and then on again)
1 pulse	0	EEPROM checksum error	Set manufacturer's setting with the KS2000 configuration software
	1	Code buffer overflow	Insert fewer Bus Terminals. The programmed configuration has too many entries in the table
	2	Unknown data type	Software update required for the Bus Coupler
2 pulses	0	Programmed configuration has an incorrect table entry	Check programmed configuration for correctness
	n (n > 0)	Table comparison (Bus Terminal n)	Incorrect table entry
3 pulses	0	K-Bus command error	<ul style="list-style-type: none"> No Bus Terminal inserted One of the Bus Terminals is defective; halve the number of Bus Terminals attached and check whether the error is still present with the remaining Bus Terminals. Repeat until the defective Bus Terminal is located.
4 pulses	0	K-Bus data error, break behind the Bus Coupler	Check whether the n+1 Bus Terminal is correctly connected; replace if necessary.
	n	Break behind Bus Terminal n	Check whether the Bus End Terminal 9010 is connected.
5 pulses	n	K-Bus error in register communication with Bus Terminal n	Exchange the nth bus terminal
6 pulses	0	Error at initialisation	Exchange Bus Coupler
	1	Internal data error	Perform a hardware reset on the Bus Coupler (switch off and on again)
	2	DIP switch changed after a software reset	Perform a hardware reset on the Bus Coupler (switch off and on again)
	4	DIP switch incorrect for BootP	Set 1-8 to on or off, see BootP
	8	Internal data error	Perform a hardware reset on the Bus Coupler (switch off and on again)
	16	Error in IP socket	Perform a hardware reset on the Bus Coupler (switch off and on again)
7 pulses	0	Note: Cycle time was exceeded	Warning: the set cycle time was exceeded. This indication (flashing LEDs) can only be cleared by booting the Bus Coupler again. Remedy: increase the cycle time
9 pulses	0	Checksum error in Flash program	Transmit program to the BC again
	1	Incorrect or faulty library implemented	Remove the faulty library
10 pulses	n	Bus Terminal n is not consistent with the configuration that existed when the boot project was created	Check the nth Bus Terminal. The boot project must be deleted if the insertion of an nth bus terminal is intentional
14 pulses	n	nth Bus Terminal has the wrong format	Start the Bus Coupler again, and if the error occurs again then exchange the Bus Terminal
15 pulses	n	Number of Bus Terminals is no longer correct	Start the Bus Coupler again. If the error occurs again, restore the manufacturers setting using the KS2000 configuration software
16 pulses	n	Length of the K-Bus data is no longer correct	Start the Bus Coupler again. If the error occurs again, restore the manufacturers setting using the KS2000 configuration software

Adjusting of the IP address

Switch no.	1	2	3	4	5	6	7	8	9	10	
Weight	1	2	4	8	16	32	64	128	–	–	
In this example	ON	OFF	OFF	ON	OFF	OFF	ON	ON	OFF*	OFF*	
Value	1	0	0	8	0	0	64	128	–	–	Total = 201

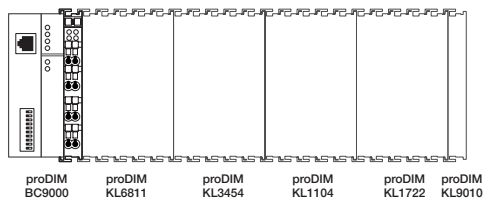
* has to be off



Warning

Never reset the unit to its factory default settings. If you reset the unit, all required settings will be lost and the internal PLC software will be deleted; the unit will no longer be able to function with winDIM@net. If you have reset the unit, please contact your dealer. The PLC software and settings can only be reloaded by TridonicAtco at the factory.

Terminal order:



The first position on the fieldbus side is always reserved for the bus coupler (gateway) proDIM BC9000. The terminals have to be connected in a specific order. First is always the Bus Coupler proDIM BC9000 and the last terminal is always the End Terminal proDIM KL9010.

1. Bus Coupler proDIM BC9000
2. DALI Terminal proDIM KL6811
3. Analogue Input proDIM KL3454
4. Digital Input proDIM KL1104
5. Digital Input proDIM KL1722
6. End Terminal proDIM KL9010

Example

1. 1x Bus Coupler proDIM BC9000
 2. 5x DALI Terminal proDIM KL6811
 3. 1x Analogue Input proDIM KL3454
 4. 3x Digital Input proDIM KL1104
 5. 1x End Terminal proDIM KL9010
- or
1. 1x Bus Coupler proDIM BC9000
 2. 3x DALI Terminal proDIM KL6811
 3. 6x Digital Input proDIM KL1722
 4. 1x End Terminal proDIM KL9010

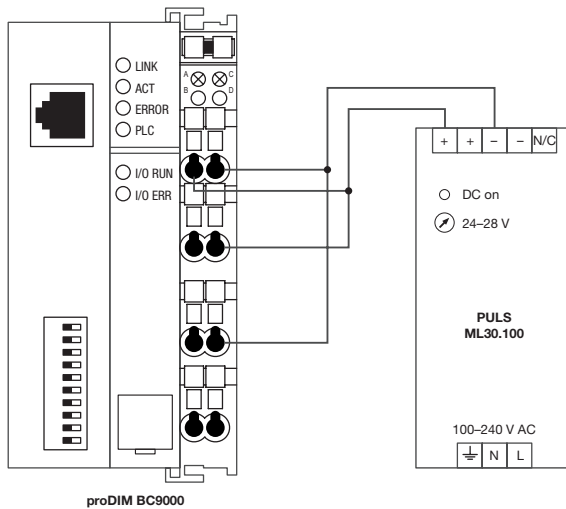
① For further technical information please visit www.tridonicatco.com

Example to calculate the power of the 24V DC supply

Terminal	Amount	Current per terminal	Total current
proDIM BC9000	1	70 mA*	70 mA
proDIM KL6811	5	95 mA*	475 mA
proDIM KL3454	1	95 mA*	95 mA
proDIM KL1104	3	22 mA*	66 mA
proDIM KL9010	1	0 mA*	0 mA
Total			706 mA
Power			17 W

* The current is written in the data sheet of the terminals.

Circuit diagram



Number of terminals

The number of terminals per proDIM BC9000 bus coupler is limited. A maximum of 47 terminals may be connected to a proDIM BC9000; the end terminal is not counted.

Up to 10 proDIM KL6811 DALI terminals may be used. For analogue and digital inputs it is not the terminals that are counted but the number of individual inputs per terminal. A proDIM KL3454 has four analog inputs. A maximum of 20 analog inputs are permitted. Therefore a maximum of five proDIM KL3454 terminals can be connected.

The situation with digital input terminals is similar. proDIM KL1104 has four individual inputs; proDIM KL1722 has two. The maximum number of 64 digital inputs must not be exceeded. A mix of proDIM KL1104 and proDIM KL1722 is permitted.