

# Dupline® Plug & Play Master Module Interface for Lucky Goldstar PLC Type G 3496 0001



- Lucky Goldstar master
- Plug and play: Automatic communication with specific PLC/Controllers
- Built-in normal Dupline® Channel Generator
- 128 I/O's and DC power supply on 3 wires
- RS232/RS422/RS485 port for interfacing to control system
- Split-I/O mode selectable (128 inputs and 128 outputs)
- LED-indications for supply, Dupline® carrier and Com-port Tx
- Galvanically isolated Com-port supplied by internal DC/DC converter

## Product Description

G 3496 0001 is designed as a cost-effective Plug & Play solution for interfacing Dupline® I/O's to a Lucky Goldstar PLC. It performs three functions: Dupline®

channel generator, power supply synchronization (enables 3-wire system with supply) and RS232/RS422/RS485 interface.

## Ordering Key

**G 3496 0001 700**

Type: Dupline®  
H4-Housing  
Combined module  
Interface type  
DC supply

## Type Selection

Supply	PLC Interface type	Ordering no.
20-30 VDC	Lucky Goldstar K-serie	G 3496 0001 700

## Input/Output Specifications

<b>Power output</b>	
Output voltage	20-30 VDC (pulsating)
Output current	< 3.0 A @ 50°C
Short circuit protection	4 A quick acting fuse
Output voltage drop	< 1.0 V
<b>Dupline® carrier</b>	
Output voltage	8.2 V (pulsating)
Current	< 60 mA
Short circuit protection	Yes
Scan time	
128 channels	132.2 ms
64 channels	69.8 ms
<b>Communication port</b>	
Standard	RS232/RS422/RS485
Split I/O mode	Yes, selectable
Normal Dupline mode	Yes, selectable
Connection	9 pole female Sub-D
Dielectric voltage	
Com-port Dupline® Protocol	1 kVAC (rms)
	LG Serial Communication
	Standard
Baud rate	19200
Data bits	8
Start bit	1
Stop bit	1
Parity	None
Flow-control	None

## Input/Output Specifications (Cont.)

Pin assignment	
2-wire RS 485	
S/R Data line + (B)	Pin 3
S/R Data line - (A)	Pin 8
GND	Pin 5
4-wire RS 485/RS 422	
R Data line + (B)	Pin 3
R Data line - (A)	Pin 8
S Data line + (B)	Pin 2
S Data line - (A)	Pin 7
Direction	Pin 4
	(Connect to GND pin 5 when using 4-wire communication)
RS 232	
TX	Pin 1
RX	Pin 9
GND	Pin 5

## Supply Specifications

<b>Power supply</b>	Overvoltage cat. III (IEC 60664)
Operational voltage ( $V_{in}$ )	20-30 VDC
Reverse polarity protection	None
Current consumption	< 150 mA + Power load
Power dissipation	< 5 W
Transient protection voltage	800 V
Dielectric voltage	
Supply - Dupline®	None
Supply - com-port	1 kVAC (rms)

General Specifications

<b>Power ON delay</b>	2 s	<b>Humidity (non-condensing)</b>	20 to 80%
<b>Indication for</b> Com-port Tx Supply ON Dupline® carrier	LED, red LED, green LED, yellow	<b>Mechanical resistance</b> Shock Vibration	15 G (11 ms) 2 G (6 to 55 Hz)
<b>Environment</b> Pollution degree Operating temperature Storage temperature	3 (IEC 60664) 0° to +50°C (+32° to +122°F) -50° to +85°C (-58° to +185°F)	<b>Dimensions</b> <b>Material</b> <b>Weight</b>	H4-Housing (see Technical information) 100 g

Mode of Operation

The Dupline® Master Module (DMM) controls a 3-wire bus with signal, DC-power and common GND. The DMM is connected to a standard DC-supply, which it synchronizes with the Dupline® carrier signal before it is output to supply. The synchronization is necessary in order to enable the Dupline® and DC-supply to share the GND-wire.

The Dupline® Master Module is a Dupline® Channel Generator with the function of a master.

This means that the 128 Dupline® I/O's will be read/written by the DMM and then sent to the PLC.

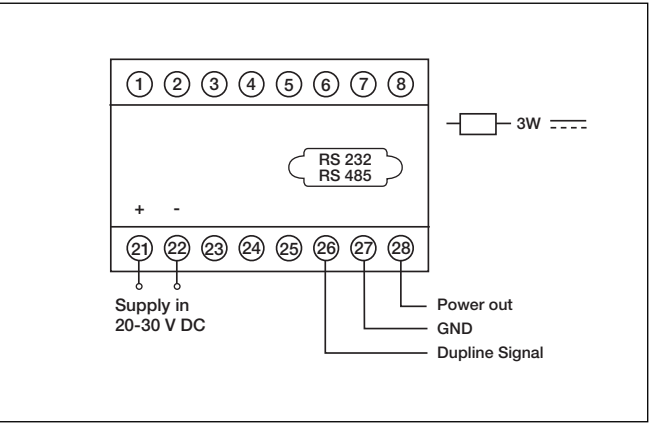
The DMM can run in two different modes – Normal mode and split I/O mode. In Normal mode, Dupline® operates as a peer-to-peer system, where the channel generator automatically establishes a connection between Dupline® inputs and Dupline® outputs which are coded to the same Dupline® address. If e.g. an

input coded for B5 is activated, the output(s) coded for B5 will also be activated.

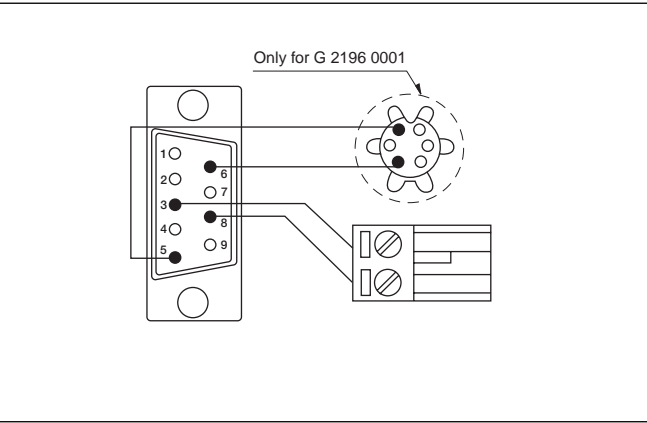
Consequently, a Dupline®-output can either be activated through the output-data received on DMM or by an active Dupline® input coded for the same Dupline®-address. In “Split I/O” mode, the channel generator treats the Dupline® inputs and Dupline® outputs independently. If e.g. an input coded for B5 is activated, the DMM

will make the information available for the PLC (like in normal mode), but it will not automatically activate the Dupline® output(s) coded to B5. The Dupline® outputs are controlled exclusively through the output data received from the PLC. In this mode, up to 128 Dupline® inputs and 128 Dupline® outputs are available, since an input and an output coded to the same Dupline® address can operate independently.

Wiring Diagram



Pin Assignment



Dip-Switch Setting

<b>Sw.4</b>	<b>On:</b>	Split I/O Channel Generator Mode (See “Mode of Operation”)
	<b>Off:</b>	Normal Dupline® Monostable Channel Generator Mode
<b>Sw.5</b>	<b>On:</b>	64 Dupline® channels
	<b>Off:</b>	128 Dupline® channels

Installation Hints

<b>No TX-LED</b>	
<b>Hardware fault</b>	Check the wiring.
<b>No Dupline® Carrier-LED</b>	
<b>Short circuit</b>	Short circuit between the two Dupline® wires.

## Memory Mapping

Table of the memory mapping

Dupline® Channel	Lucky Goldstar		Dupline® Channel	Lucky Goldstar	
	Read	Write		Read	Write
A1	M000	M080	E1	M020	M100
A2	M001	M081	F1	M028	M108
A3	M002	M082	G1	M030	M110
A4	M003	M083	H1	M038	M118
A5	M004	M084	I1	M040	M120
A6	M005	M085	J1	M048	M128
A7	M006	M086	K1	M050	M130
A8	M007	M087	L1	M058	M138
B1	M008	M088	M1	M060	M140
B8	M00F	M08F	N1	M068	M148
C1	M010	M090	O1	M070	M150
D1	M018	M098	P1	M078	M158

## Additional Information

### Scope of supply

1 x Master Module

G3496 0001 700

## Accessories

Cable for Communication port

RS485-CAB