Dupline Plug & Play Master Module Interface for Allen Bradley PLC Type G 3496 0006

- **Allen Bradley 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 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 3495 0006 is designed as a cost-effective solution for interfacing Dupline® I/O's to Allen Bradley PLCs – the SLC 500 and Micrologix families. It performs three functions: Dupline® channel generator, power supply synchronization (enables 3-wire system with supply) and RS232 interface.

Ordering Key

G 3496 0006 700

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

Type Selection

Supply	PLC Interface Conformance	Ordering no.
20-30 VDC	MicroLogix 1000, 1200 and 1500. SLC5-03, SLC5-04 and SLC5-05.	**G 3496 0006 700**

Input/Output Specifications

Power Output	
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
Dupline® carrier	
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
Communication Port	
Standard	RS232
Connection	9 pole female Sub-D
Dielectric voltage	
Com-port-Dupline®	1 kVAC (rms)
Protocol	DF1
Channel Configuration in PLC	
Driver	DF1 Full Duplex
Source ID	1
Baud rate	9600
Data bits	8
Start bit	-
Stop bit	1
Parity	None
Flow-control	None
Error detection	CRC or BCC
Pin assignment	
RS232	
TX	1
Rx	9
GND	5

Supply Specifications

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

General Specifications

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

Memory Mapping

Configuration of data file in RSLogix 500 Programming

DATA FILE	MicroLogix & SLC	
	Type: 1000	Type: Other
File	7	9
Type	N (Integer)	N (Integer)
Elements	16*	16*

***Registers 0-7: Dupline® Input Channels A1 to P8.**
Registers 8-15: Dupline® Output Channels A1 to P8.

Dip-Switch Setting

Sw.2	**On:**	Checksum CRC
	Off:	Checksum BCC
Sw.4	**On:**	Split I/O Channel Generator Mode
	Off:	Normal Dupline® Monostable Channel Generator Mode
Sw.5	**On:**	64 Dupline® channels
	Off:	128 Dupline® channels
Sw.6	**On:**	Maintain data to Dupline® receivers in case of communication failure
	Off:	Clear data to Dupline® receivers in case of communication failure after 75 Dupline® scans

Table of the memory mapping to the PLC (Except MicroLogix 1000)

Dupline® Channel	MicroLogix & SLC		Dupline® Channel	MicroLogix & SLC	
	Read	Write		Read	Write
A1	N9: 0/0	N9: 8/0	E1	N9: 2/0	N9: 10/0
A2	N9: 0/1	N9: 8/1	F1	N9: 2/8	N9: 10/8
A3	N9: 0/2	N9: 8/2	G1	N9: 3/0	N9: 11/0
A4	N9: 0/3	N9: 8/3	H1	N9: 3/8	N9: 11/8
A5	N9: 0/4	N9: 8/4	I1	N9: 4/0	N9: 12/0
A6	N9: 0/5	N9: 8/5	J1	N9: 4/8	N9: 12/8
A7	N9: 0/6	N9: 8/6	K1	N9: 5/0	N9: 13/0
A8	N9: 0/7	N9: 8/7	L1	N9: 5/8	N9: 13/8
B1	N9: 0/8	N9: 8/8	M1	N9: 6/0	N9: 14/0
B8	N9: 0/15	N9: 8/15	N1	N9: 6/8	N9: 14/8
C1	N9: 1/0	N9: 9/0	O1	N9: 7/0	N9: 15/0
D1	N9: 1/8	N9: 9/8	P1	N9: 7/8	N9: 15/8

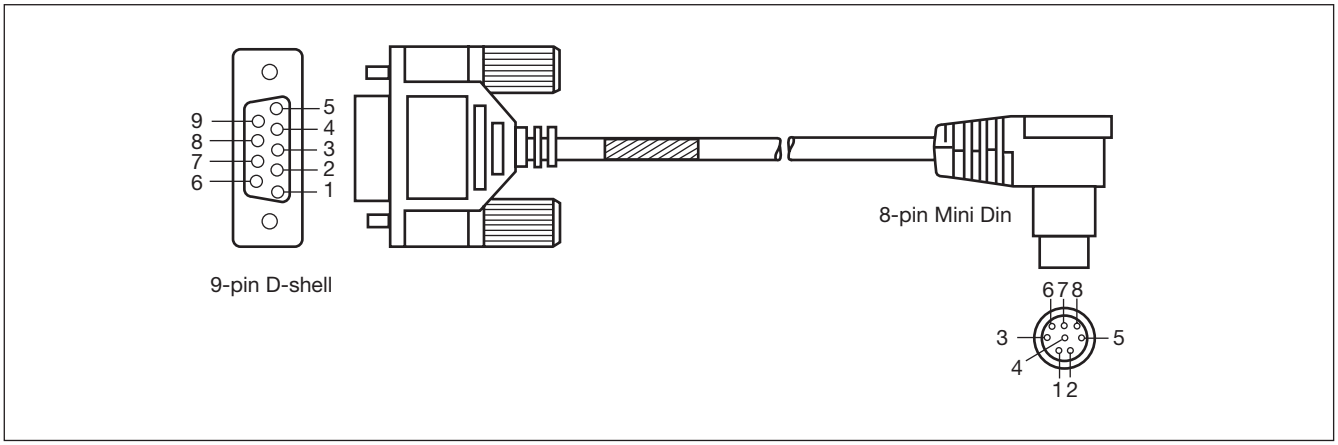
Table of the memory mapping to the PLC (Only MicroLogix 1000)

Dupline® Channel	MicroLogix 1000		Dupline® Channel	MicroLogix 1000	
	Read	Write		Read	Write
A1	N7: 0/0	N7: 8/0	E1	N7: 2/0	N7: 10/0
A2	N7: 0/1	N7: 8/1	F1	N7: 2/8	N7: 10/8
A3	N7: 0/2	N7: 8/2	G1	N7: 3/0	N7: 11/0
A4	N7: 0/3	N7: 8/3	H1	N7: 3/8	N7: 11/8
A5	N7: 0/4	N7: 8/4	I1	N7: 4/0	N7: 12/0
A6	N7: 0/5	N7: 8/5	J1	N7: 4/8	N7: 12/8
A7	N7: 0/6	N7: 8/6	K1	N7: 5/0	N7: 13/0
A8	N7: 0/7	N7: 8/7	L1	N7: 5/8	N7: 13/8
B1	N7: 0/8	N7: 8/8	M1	N7: 6/0	N7: 14/0
B8	N7: 0/15	N7: 8/15	N1	N7: 6/8	N7: 14/8
C1	N7: 1/0	N7: 9/0	O1	N7: 7/0	N7: 15/0
D1	N7: 1/8	N7: 9/8	P1	N7: 7/8	N7: 15/8

Pin Assignment

DMM G34960006	Allen Bradley PLC type MicroLogix
9P D-SUB Male	8-pin mini-DIN Male
1 (Tx)	4 (Rxd)
9 (Rx)	7 (Txd)
5 (GND)	2 (GND)

DMM G34960006	Allen Bradley PLC type SLC
9P D-SUB Male	9-pin D-SUB Male
1 (Tx)	2 (Rxd)
9 (Rx)	3 (Txd)
5 (GND)	5 (GND)



Accessories

Type MicroLogix	
Cable Sub-D 9M/8 mini Din	RS-232-AB1
Type SLC	
Cable Sub-D 9M/9M	RS-232-AB2

Installation Hints

Slow-flashing TX-LED

Hardware fault — Check the wiring.

No Dupline® Carrier-LED

Dupline® short circuit — Short circuit between the two Dupline® wires.

Additional Information

Scope of supply

1 x Master Module — G3496 0006 700

Dimensions (mm)

H4-housing