

# 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. | <b>G 3496 0006 700</b> |

## 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                 |
| 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

|                                        |                                  |
|----------------------------------------|----------------------------------|
| <b>Power supply</b>                    | Overvoltage cat. III (IEC 60664) |
| Operational voltage (V <sub>in</sub> ) | 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

|                                  |                                |
|----------------------------------|--------------------------------|
| <b>Power ON delay</b>            | 2 s                            |
| <b>Indication for</b>            |                                |
| Com-port TX                      | LED, red                       |
| Supply ON                        | LED, green                     |
| Dupline® carrier                 | LED, yellow                    |
| <b>Environment</b>               |                                |
| 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) |
| <b>Humidity (non-condensing)</b> | 20 to 80%                      |
| <b>Mechanical resistance</b>     |                                |
| Shock                            | 15 G (11 ms)                   |
| Vibration                        | 2 G (6 to 55 Hz)               |
| <b>Dimensions</b>                | H4-Housing                     |
| <b>Material</b>                  | (See Technical Information)    |
| <b>Weight</b>                    | 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.

## 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)

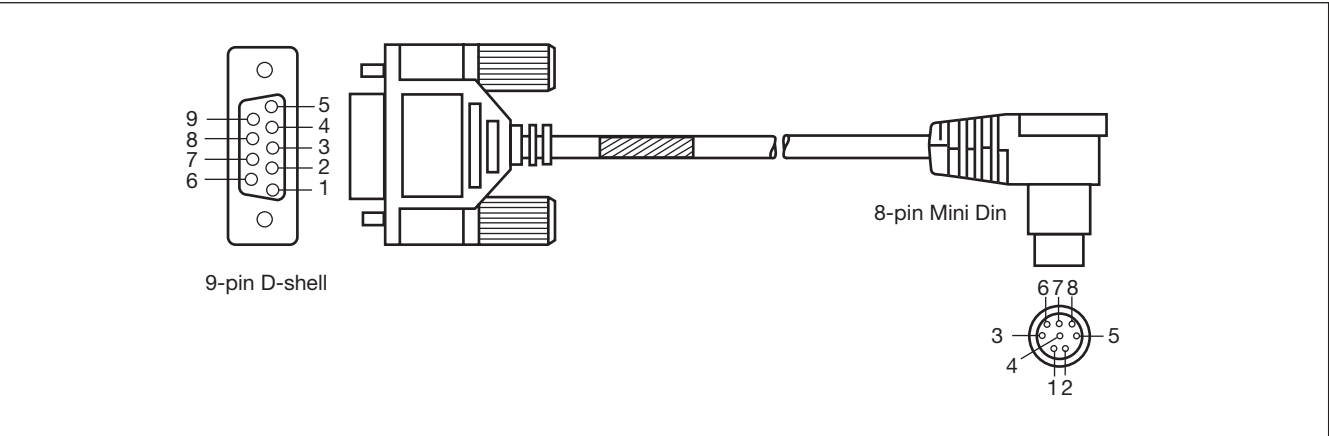
| Dupline® Channel | MicroLogix & SLC |          | Dupline® Channel | MicroLogix & SLC |          |
|------------------|------------------|----------|------------------|------------------|----------|
|                  | Read             | Write    |                  | Read             | Write    |
| 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 | DMM G34960006 | Allen Bradley PLC type SLC |
|---------------|-----------------------------------|---------------|----------------------------|
| 9P D-SUB Male | 8-pin mini-DIN Male               | 9P D-SUB Male | 9-pin D-SUB Male           |
| 1 (Tx)        | 4 (Rxd)                           | 1 (Tx)        | 2 (Rxd)                    |
| 9 (Rx)        | 7 (Txd)                           | 9 (Rx)        | 3 (Txd)                    |
| 5 (GND)       | 2 (GND)                           | 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

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

## Additional Information

|                        |                |
|------------------------|----------------|
| <b>Scope of supply</b> |                |
| 1 x Master Module      | G3496 0006 700 |

## Dimensions (mm)

