

Dupline Plug & Play Master Module Interface for Toshiba Type G 3496 0011



- 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 3495 0011 is designed as a cost-effective solution for interfacing Dupline I/O's to a Toshiba 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 0011 700

Type: Dupline® _____
 H4-Housing _____
 Power supply _____

Type Selection

| Supply | PLC Interface Conformance | Ordering no. |
|-----------|---------------------------|-----------------|
| 20-30 VDC | Toshiba T-series PLCs | G 3496 0011 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/RS422/RS485 |
| Split I/O mode | Yes, selectable |
| Normal Dupline mode | Yes, selectable |
| Connection | 9 pole female Sub-D |
| Dielectric voltage | |
| Com-port Dupline | 1 kVAC (rms) |
| Protocol | Computer-Link |
| Station no. | 01 |
| Baud rate | 9600 (Toshiba Default) / 19200 |
| Data bits | 8 |
| Start bit | 1 |
| Stop bit | 1 |
| Parity | Odd |
| Flow-control | None |
| Pin assignment | |
| 2-wire RS485 | |
| S/R Data line + (B) | 3 |

Input/Output Specifications (cont.)

| | |
|---------------------|---|
| S/R Data line - (A) | 8 |
| GND | 5 |
| 4-wire RS485/RS422 | |
| R Data line + (B) | 3 |
| R Data line - (A) | 8 |
| S Data line + (B) | 2 |
| S Data line - (A) | 7 |
| Direction | 4 (Connect to pin 5 GND when using 4-wire com.) |
| RS232 | |
| TX | 1 |
| RX | 9 |
| GND | 5 |

Supply Specifications

| | |
|--|-----------------------------------|
| Power supply | Over voltage cat. III (IEC 60664) |
| Operational voltage (V _{in}) | 20-30 VDC |
| Reverse polarity protection | None |
| Current consumption | < 150 mA + Power load |
| 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 outputted 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.

Dip-switch Setting

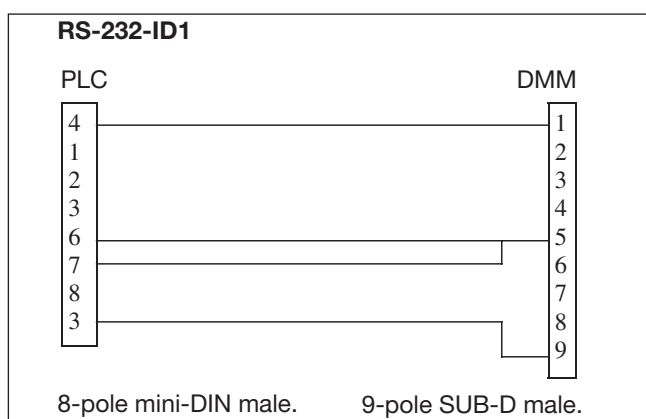
- Sw.3** **On:** 19200 baud
 Off: 9600 baud (Default Toshiba setting)
- Sw.4** **On:** Split I/O Channel Generator Mode
 (Receivers activated by the PLC)
 Off: Normal Dupline Monostable Channel
 Generator Mode
- Sw.5** **On:** 64 Dupline channels
 Off: 128 Dupline channels

Memory Mapping

Table of the memory mapping to the PLC

| Dupline Channel | PLC Type | | Dupline Channel | PLC Type | |
|-----------------|----------|-------|-----------------|----------|-------|
| | Read | Write | | Read | Write |
| A1 | R0000 | R0080 | E1 | R0020 | R0100 |
| A2 | R0001 | R0081 | F1 | R0028 | R0108 |
| A3 | R0002 | R0082 | G1 | R0030 | R0110 |
| A4 | R0003 | R0083 | H1 | R0038 | R0118 |
| A5 | R0004 | R0084 | I1 | R0040 | R0120 |
| A6 | R0005 | R0085 | J1 | R0048 | R0128 |
| A7 | R0006 | R0086 | K1 | R0050 | R0130 |
| A8 | R0007 | R0087 | L1 | R0058 | R0138 |
| B1 | R0008 | R0088 | M1 | R0060 | R0140 |
| B8 | R000F | R008F | N1 | R0068 | R0148 |
| C1 | R0010 | R0090 | O1 | R0070 | R0150 |
| D1 | R0018 | R0098 | P1 | R0078 | R0158 |

Pin Assignment



Installations Hints

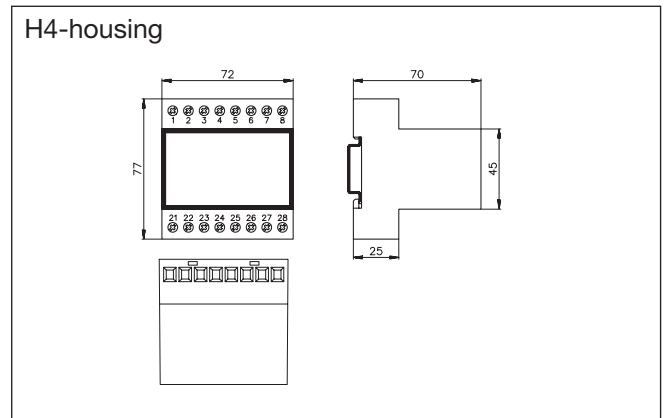
Slow-flashing red led:
 Hardware fault Check the wiring.
 No Yellow led:
 Dupline Short circuit Short circuit between the two Dupline wires.

Accessories

Programming port on T1 series
 Cable Sub-D 9M/8M mini-DIN
 for T1 programming port: RS-232-TO1

Optional T2 communication port CM232E
 Cable Sub-D 9M/9M for communication port: RS-232-TO2

Dimensions (mm)



Additional Information

Scope of supply
 1 x Master Module G3496 0011 700