

Dupline® Plug & Play Master Module Interface for Mitsubishi PLC Type G 3496 0003



- Interface for Mitsubishi PLC with the function of a 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

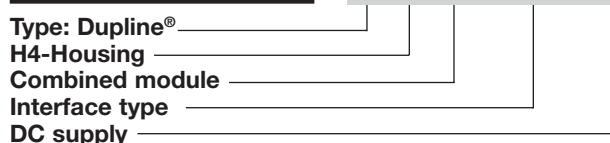
Product Description

G 3496 0003 is designed as a cost-effective solution for interfacing Dupline® I/O's to a Mitsubishi 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 0003 700



Type Selection

Supply	PLC Interface Conformance	Ordering no.
20-30 VDC	Mitsubishi FX-serie Mitsubishi AnS-serie with interface module	G 3496 0003 700

Input/Output Specifications

Power output	20-30 VDC (pulsating)
Output voltage	< 3.0 A @ 50°C
Output current	4 A quick acting fuse
Short circuit protection	< 1.0 V
Output voltage drop	
Dupline® carrier	8.2 V (pulsating)
Output voltage	< 60 mA
Current	Yes
Short circuit protection	
Scan time	132.2 ms
128 channels	69.8 ms
64 channels	
Communication port	RS232/RS422/RS485
Standard	Yes, selectable
Split I/O mode	Yes, selectable
Normal Dupline mode	9 pole female Sub-D
Connection	
Dielectric voltage	1 kVAC (rms)
Com-port Dupline®	Programming Port
Protocol	9600
Baud rate	7
Data bits	1
Start bit	1
Stop bit	Even
Parity	None
Flow-control	Dedicated Protocol
Protocol	19200
Baud rate	8
Data bits	1
Start bit	1
Stop bit	None
Parity	None
Flow-control	None

Input/Output Specifications (Cont.)

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

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

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.

Dip-Switch Setting

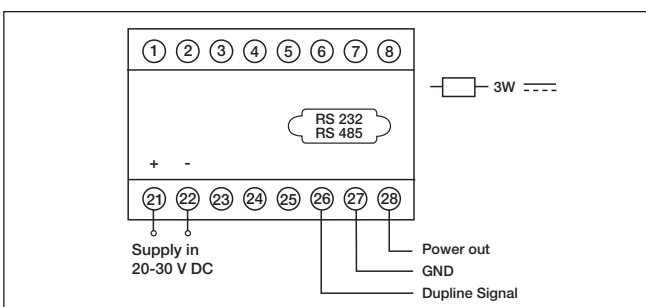
Sw.2	On:	If Communication fails, all Dupline® channels activated by the PLC, is deactivated.
	Off:	If Communication fails, Dupline® channels activated by the PLC, remains activated.
Sw.3	On:	Programming-port Protocol (Power up the Module)
	Off:	Dedicated Protocol 1 (Power up the Module)
Sw.4	On:	Split I/O Channel Generator Mode (See “Mode of Operation”)
	Off:	Normal Dupline® Monostable Channel Generator Mode
Sw.5	On:	64 Dupline® channels
	Off:	128 Dupline® channels

Memory Mapping

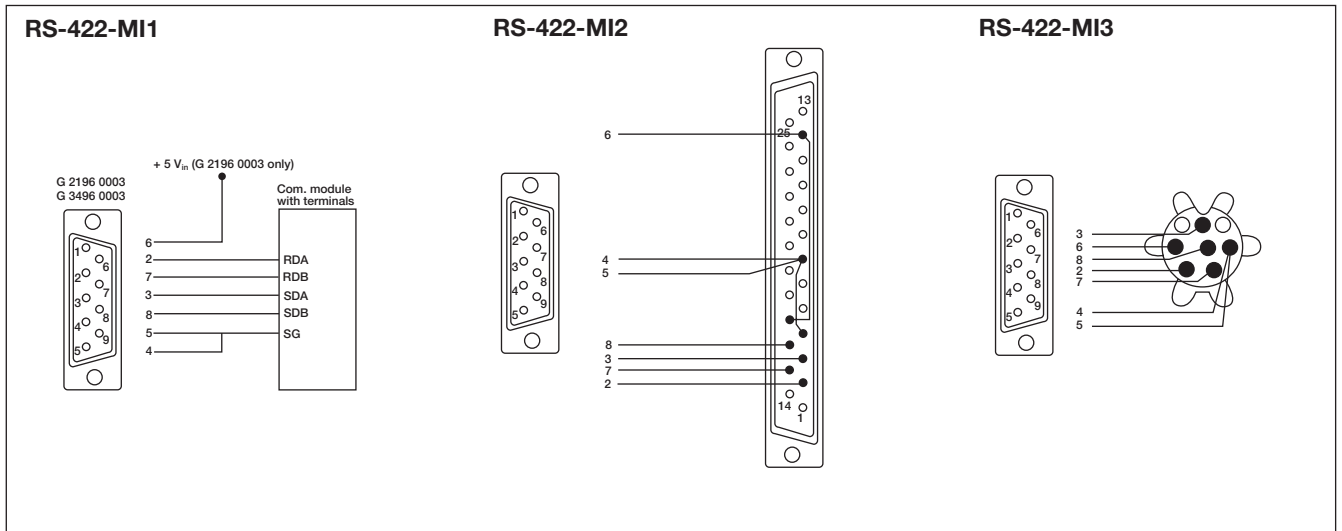
Table of the memory mapping to the PLC

Dupline® Channel	Mitsubishi		Dupline® Channel	Mitsubishi	
	Read	Write		Read	Write
A1	M0000	M0128	E1	M0032	M0160
A2	M0001	M0129	F1	M0040	M0168
A3	M0002	M0130	G1	M0048	M0176
A4	M0003	M0131	H1	M0056	M0184
A5	M0004	M0132	I1	M0064	M0192
A6	M0005	M0133	J1	M0072	M0200
A7	M0006	M0134	K1	M0080	M0208
A8	M0007	M0135	L1	M0088	M0216
B1	M0008	M0136	M1	M0096	M0224
B8	M0015	M0143	N1	M0104	M0232
C1	M0016	M0144	O1	M0112	M0240
D1	M0024	M0152	P1	M0120	M0248

Wiring Diagram



Pin Assignment



Accessories

FX-Serie

Cable Sub-D 9M/25M for 25p

Programming port

RS-422-MI2

Cable Sub-D 9M/8M DIN for 8p

Programming port

RS-422-MI3

Through RS-485 Communication Adapter or PCB

Cable Sub-D 9M/6Wires for com.

Module with Screw term.

RS-422-MI1

Interface Modules

AnS-Series

RS232 Type A1SJ71UC24-R2*

RS422/485 Type A1SJ71UC24-R4*

FX-Serie

Directly through the programming port or communication modul FXON-485ADP* or Interface adapter FX2N-485BD*

* Mitsubishi product.

Additional Information

Scope of supply

1 x Master Module

G3496 0003 700

Installation Hints

No Dupline® Carrier-LED

Short circuit

Short circuit between the two Dupline® wires.

Dimensions (mm)

