Dupline Plug & Play Master Module Interface for IDEC Type G 3496 0012

- 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 0012 is designed as a cost-effective solution for interfacing Dupline I/O's to an IDEC 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 0012 700

Type: Dupline®
H4-Housing
Power supply

Type Selection

Supply	PLC Interface Conformance	Ordering no.
20-30 VDC	IDEC MicroSmart PLCs	G 3496 0012 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	ONC / MicroSmart protocol
Station no.	00
Baud rate	9600 (IDEC Default) / 19200
Data bits	7
Start bit	1
Stop bit	1
Parity	Even
Flow-control	None
Pin assignment	
2-wire RS485	
S/R Data line + (B)	3
S/R Data line – (A)	8
GND	5

Input/Output Specifications (cont.)

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)

Specifications are subject to change without notice (10.11.03)
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Dupline®
Fieldbus | Installationbus

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/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.

Installations Hints

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

Dip-switch Setting

Sw.3	**On:**	19200 baud
	Off:	9600 baud (Default IDEC 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 Read	Write	Dupline Channel	PLC Type Read	Write
A1	M0000	M0160	E1	M0040	M0200
A2	M0001	M0161	F1	M0050	M0210
A3	M0002	M0162	G1	M0060	M0220
A4	M0003	M0163	H1	M0070	M0230
A5	M0004	M0164	I1	M0080	M0240
A6	M0005	M0165	J1	M0090	M0250
A7	M0006	M0166	K1	M0100	M0260
A8	M0007	M0167	L1	M0110	M0270
B1	M0010	M0170	M1	M0120	M0280
B8	M0017	M0177	N1	M0130	M0290
C1	M0020	M0180	O1	M0140	M0300
D1	M0030	M0190	P1	M0150	M0310

Pin Assignment

RS-232-ID1

PLC   DMM

8-pole mini-DIN male.   9-pole SUB-D male.
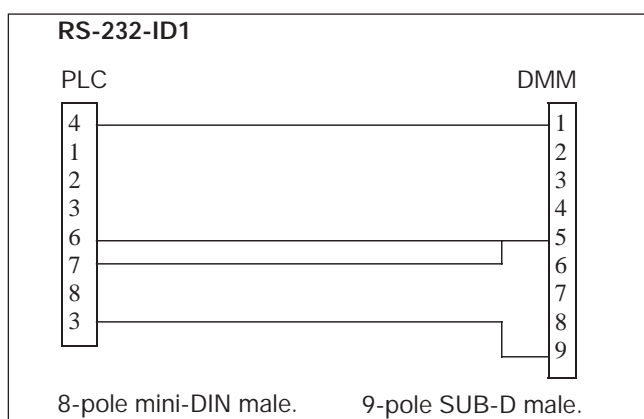
Accessories

Programming port / Optional RS-232 comm. Adaptor - on MicroSmart PLC
Cable Sub-D 9M/8M mini-DIN: RS-232-ID1

Additional Information

Scope of supply
1 x Master Module   G3496 0012 700