

422 F.T.
RS422 SMART COMBO

User Manual

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1.1 INTRODUCTION

The Honeywell RS422 FT Combo is used to distribute RS422 data lines to field devices. An incoming RS422 data line is repeated into 8 (for the 422-FT-8) or 16 (for the 422-FT-16) separate channels. This overcomes the following 2 limitations on RS422 communications:

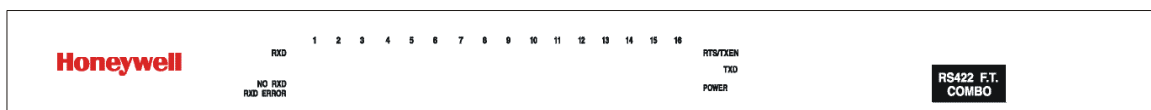
- The RS422 specification allows for a maximum of 32 devices to be connected to a single RS422 line. Each output channel of the Combo, may now have up to 32 devices connected.
- The RS422 specification allows for maximum total cable length of 1200 meters or 4000 feet. Each output channel of the Combo may have up to this cable length attached.

For a greater number of devices or longer cable lengths, the Combo units may be cascaded. Should the return data on a channel be locked in an active state, the return data on this channel will automatically be disconnected from the remainder of the system. Overall system performance can be improved and data errors reduced when cable runs are broken into smaller/shorter segments. In some systems it is also useful to separate cable runs to ease maintenance and fault finding situations.

The Combo additionally allows for the connection of a low voltage power input. This power is distributed to each output channel, allowing for powering of many field devices.

2.1 OPERATION

The RS422 combo receives data from a master device on its RS422 slave communication port. This data is transmitted out of all 8 (or 16) master ports of the RS422 Combo. Data, which is returned from field devices, connected to the master ports, is combined and sent out of the RS422 slave communication port.



The following indications are provided:

- Power
- Transmit activity, this is common to all channels
- Transmit enable, this is common to all channels. This indication is active when the channels transmitter sections are enabled. Note that the transmit enable may be continually enforced by closing DIP 4. When DIP 4 is off, then the transmit enable is only activated when the transmit enable lines on the slave channel are activated.
- Receive activity. This is independent for each channel.
- Receive data fault. This is independent for each channel and activated when no receive data has been detected on that channel for a period greater than the timeout.

2.1 OPERATION, CONTINUED

In the event that no return data is detected on a RS422 communications channel, the fault indication associated with that channel may be illuminated, depending on a DIP switch setting (See section 3). Should the return data be locked in an active state, the return data will be disabled to prevent it from interfering with the remainder of the system.

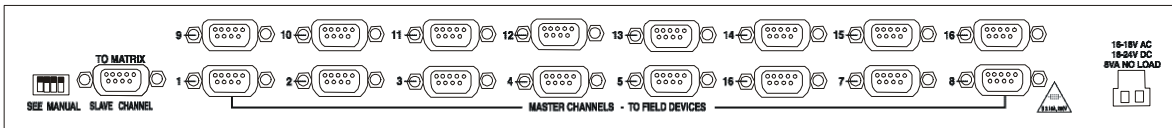


Figure 1: Rear panel of 16 channel 422-F T-16

3.1 SWITCH SETTINGS

DIP Switch 4 operates as follows:

Transmit Enabled	DIP 4
Active when slave channel transmit enable is active	Off
Always enabled	On

The remaining DIP switches are used to set the timeout for the receive fault indication as follows:

Fault Display Timeout	DIP 3	DIP 2	DIP 1
1.2 seconds (default)	Off	Off	Off
5 seconds	Off	Off	On
10 seconds	Off	On	Off
30 seconds	Off	On	On
50 mSec	On	Off	Off
200 mSec	On	Off	On
500 mSec	On	On	Off
Disabled	On	On	On

Notes:

4.1 CONNECTIONS

4.1.1 Slave Port RS422

Control messages from the master control device, are received on this port. Connections are as follows:

Pin Number	Pin Function
1	RS422 Receive data [-] (from Boss Ware master RS422 Tx[-])
2	RS422 Receive data [+] (from BossWare master RS422 Tx[+])
3	RS422 Transmit data [+] (to BossWare master RS422 Rx[+])
4	RS422 Transmit data [-] (to BossWare master RS422 Rx[-])
5	RS422 Communications common
6	Positive power input 10 to 30VDC @ 3W. Used for powering communications / indications. Note that this power does not connect through to the master channels.
7	RTS[-]
8	RTS[+]
9	Power common

4.1.2 Master Port RS422

Control messages are sent out of these ports to slave devices Connections are as follows:

Pin Number	Pin Function
1	RS422 Transmit data
2	RS422 Transmit data [+]
3	RS422 Receive data [+]
4	RS422 Receive data [-]
5	RS422 Communications common
6	Positive power output DC, maximum 1/2 Amp
7	N/C
8	N/C
9	Power common

4.1.3 Power Connection

The unit may be powered by 12 to 24 VAC 50/60 Hz or 12 to 34VDC. Note that this power input must be sufficient to power all external loads connected to the master channels.

Note that different pins are used to connect power, dependant on whether the supply is AC or DC. Connect as shown on the legend of figure 1.

The case is connected to ground / communications common.

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