interlogix
A UTC Fire & Security Company

D19110SHR
D19110SHR-R3
D19130SHR
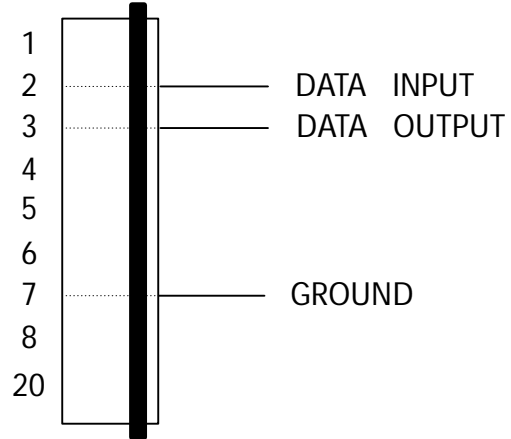**D19130SHR-R3**

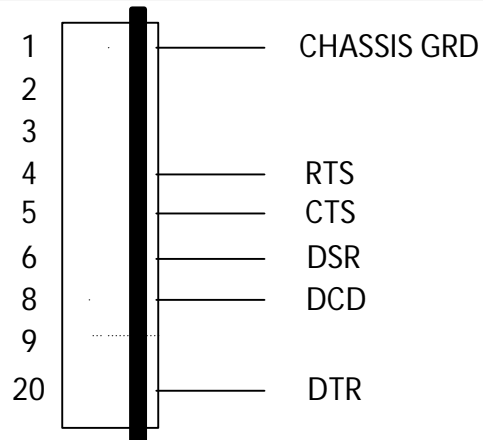# IFS Fiber Module Installation & Operation Instructions

D19100SHR Series

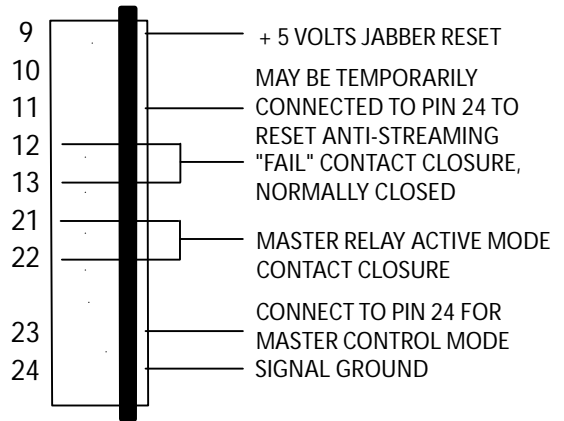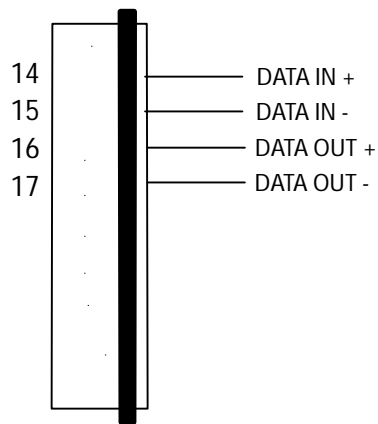|	
RS - 232 DATA **(DCE MODE)**	1 2 — DATA INPUT 3 — DATA OUTPUT 4 5 6 7 — GROUND 8 20
RS - 232 DATA **(DTE MODE)**	1 2 — DATA OUTPUT 3 — DATA INPUT 4 5 6 7 — GROUND 8 20
CONTROL LINES **(DCE MODE)**	1 — CHASSIS GRD 2 3 4 — RTS 5 — CTS 6 — DSR 8 — DCD 9 20 — DTR
CONTROL LINES **(DTE MODE)**	1 — CHASSIS GRD 2 3 4 — RTS 5 — CTS 6 — DSR 8 — DCD 9 20 — DTR
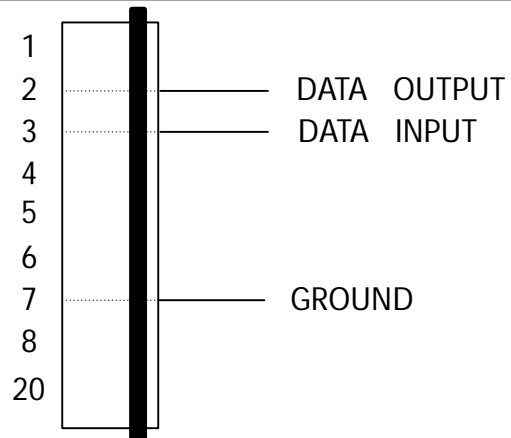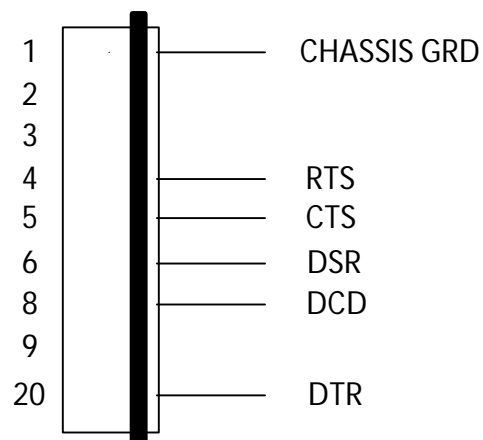
D19100SHR Series

OTHER CONNECTIONS*

* For further information see Appendix

Pin	Connection
9	+ 5 VOLTS JABBER RESET
10	
11	MAY BE TEMPORARILY CONNECTED TO PIN 24 TO RESET ANTI-STREAMING
12	"FAIL" CONTACT CLOSURE, NORMALLY CLOSED
13	
21	MASTER RELAY ACTIVE MODE CONTACT CLOSURE
22	
23	CONNECT TO PIN 24 FOR MASTER CONTROL MODE
24	SIGNAL GROUND

RS-422 DATA

Pin	Connection
14	DATA IN +
15	DATA IN -
16	DATA OUT +
17	DATA OUT -

2w RS-485 DATA

Pin	Connection
14	DATA IN / OUT +
15	DATA IN / OUT-

4w RS-485 DATA

Pin	Connection
14	DATA IN +
15	DATA IN -
16	DATA OUT +
17	DATA OUT -

D19100SHR

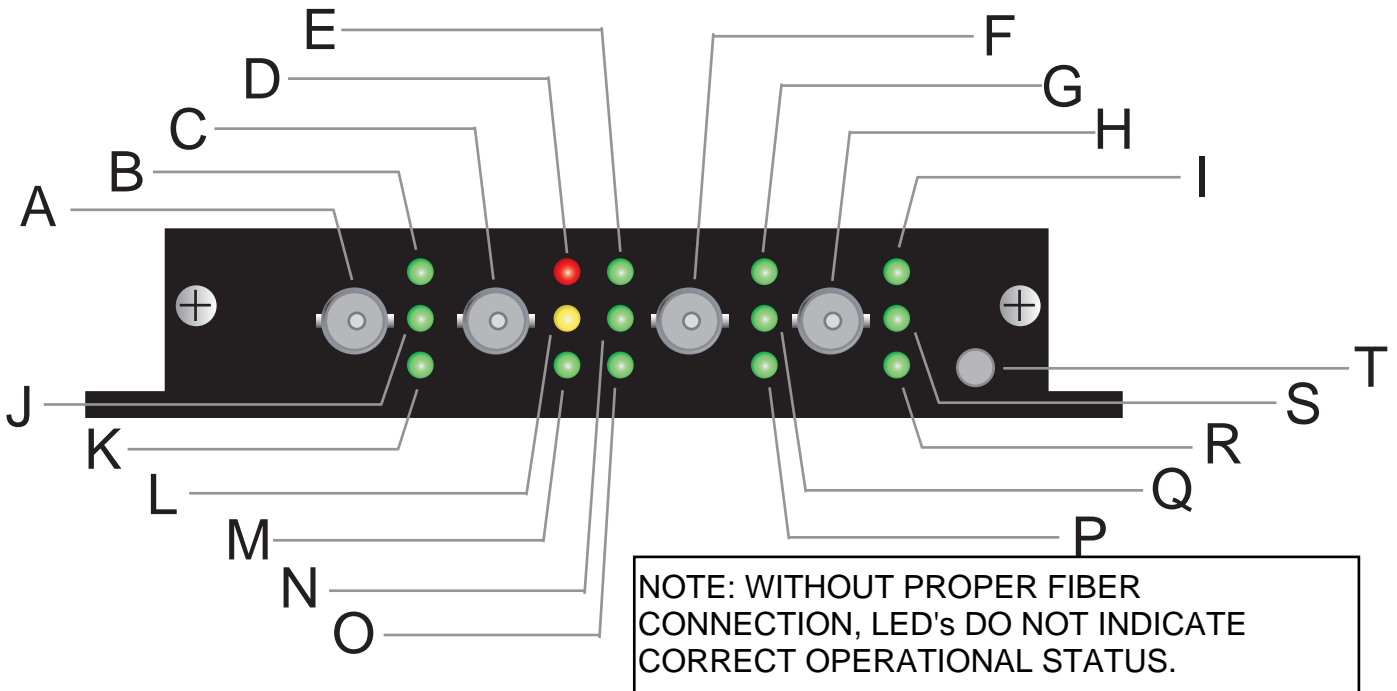NOTE: WITHOUT PROPER FIBER CONNECTION, LED's DO NOT INDICATE CORRECT OPERATIONAL STATUS.

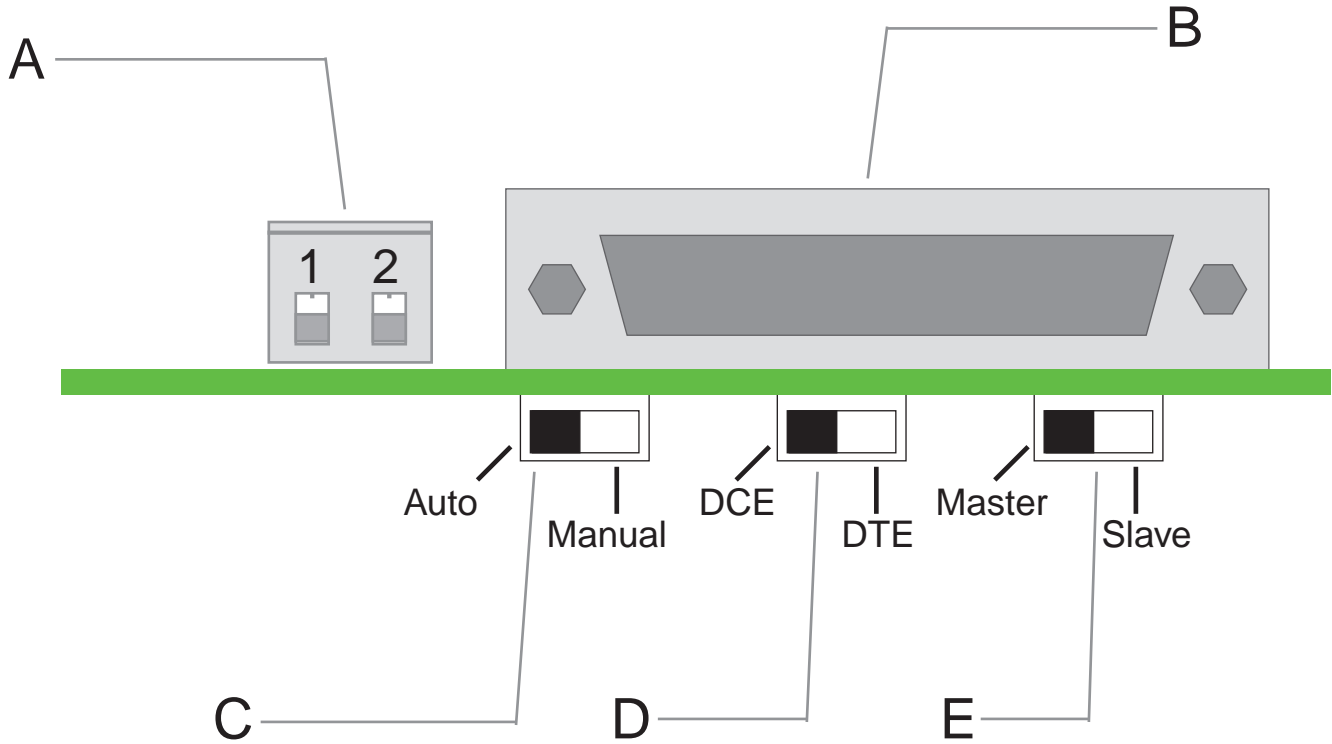| A	Receive A	A: Optical Input
B	RTS	LED illuminates when RTS is in active state.
C	Transmit B	B: Optical Output
D	Fail	LED illuminates when one of the receive ports stops receiving optical energy or in a jabber error state.
E	A Direction*	LED illuminates Green when complete optical path is established in A direction.
F	Receive B	B: Optical Input
G	CTS	LED illuminates when CTS is in active state.
H	Transmit A	A: Optical Output
I	Not Used (OFF)	N/A
J	RX A	LED illuminates when optical data is present on A input.
K	TX A	LED illuminates when data is present on A output.
L	Loss - of - Data	LED illuminates upon loss of electrical input data.
M	Power	LED illuminates when power is applied.
N	B Direction*	LED illuminates Green when complete optical path is established in B direction.
O	Set as Master	LED illuminates
P	TX B	LED illuminates when data is present on B output
Q	RX B	LED illuminates when optical data is present on B input.
R	Set as Slave	LED illuminates
S	Jabber Error	LED illuminates
T	Reset Switch	Press to reset jabber alarm state.

* LED illuminates yellow when upstream data is interrupted in that fiber loop.
  LED off when break in fiber of that loop.

Internal Jumper Settings
D19100WDM Series

	#1	#2
RS232	B	B
RS422	B	A
RS485 (2w)	A	B
RS485 (4w)	A	A

JMP 3

#2

#1

A B

NOT
USED USED

JMP 2 — JABBER
RTS
LOD

B A

JMP 4
64 SEC
32 SEC
16 SEC
8 SEC
4 SEC

JABBER TIME

JMP 5
64 SEC
32 SEC
16 SEC
8 SEC

LOD TIME

D19100SHR Series

A

B

1 2

Auto
Manual
DCE
DTE
Master
Slave

C

D

E
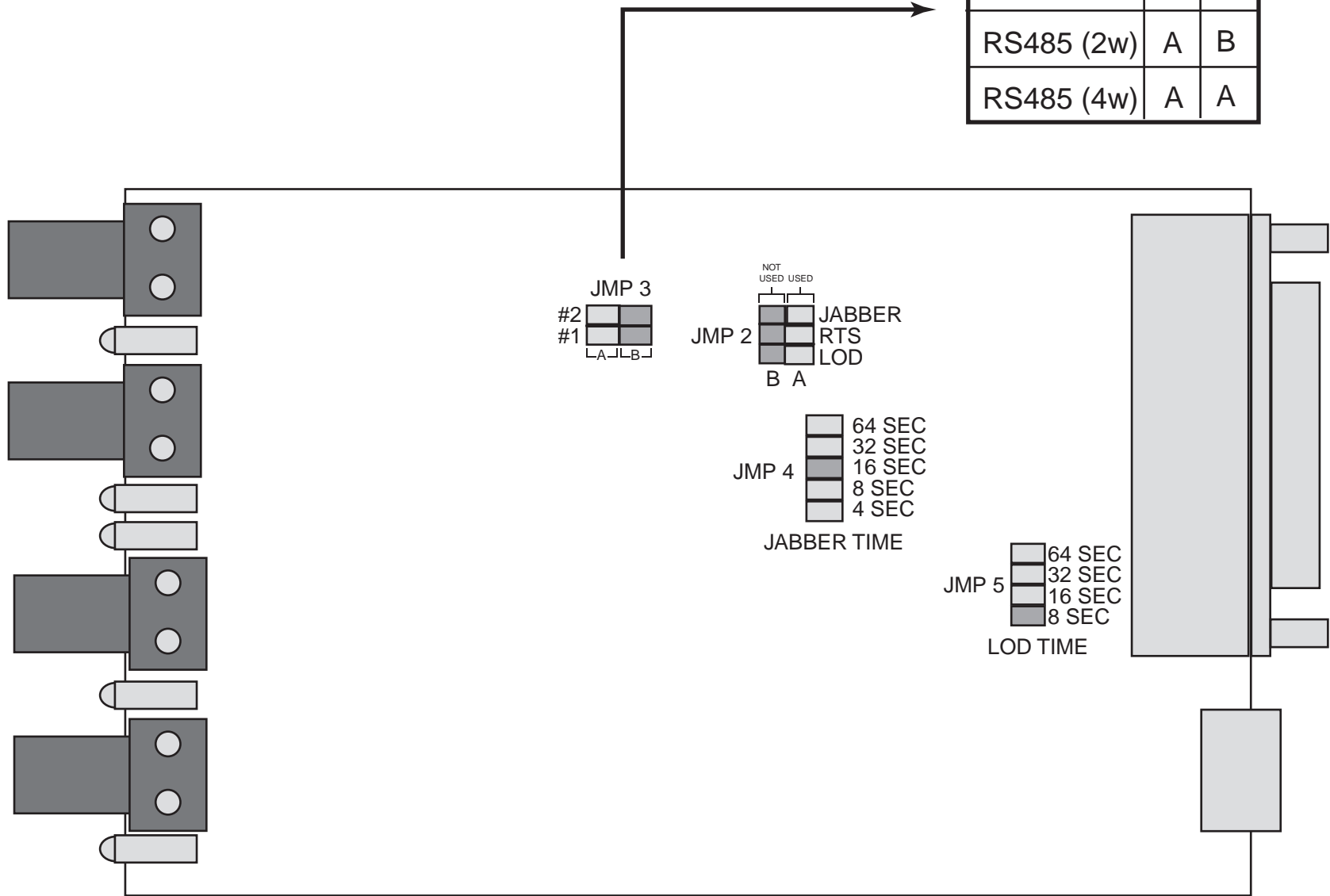
A	Power Connector
B	Data / Control Lines Connector
C	Auto / Manual Selector Switch
D	DCT / DTE Selector Switch
E	Master / Slave Selector Switch

D19100SHR Series

1 2

Auto
        Manual   DCE   Master
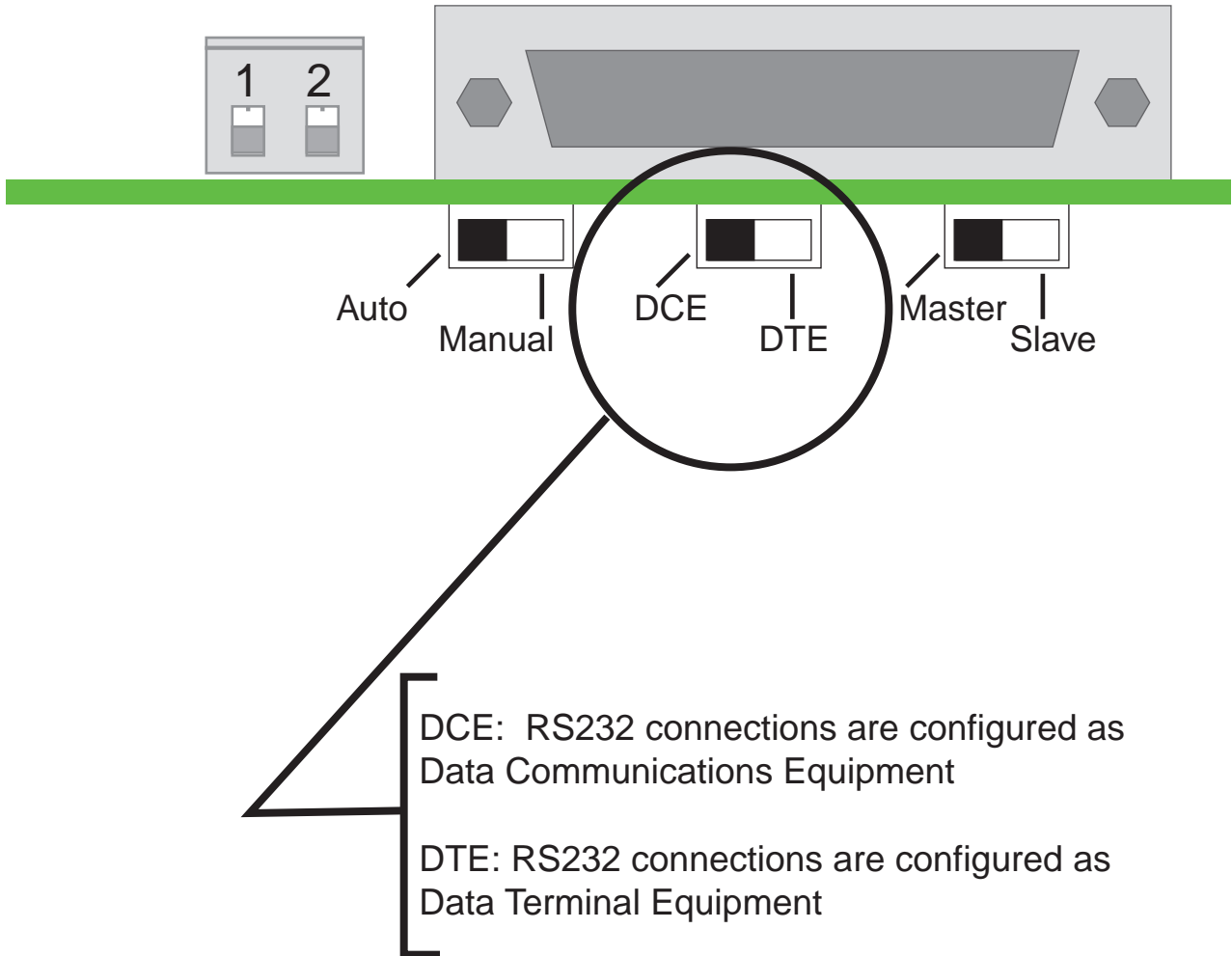   DTE   Slave
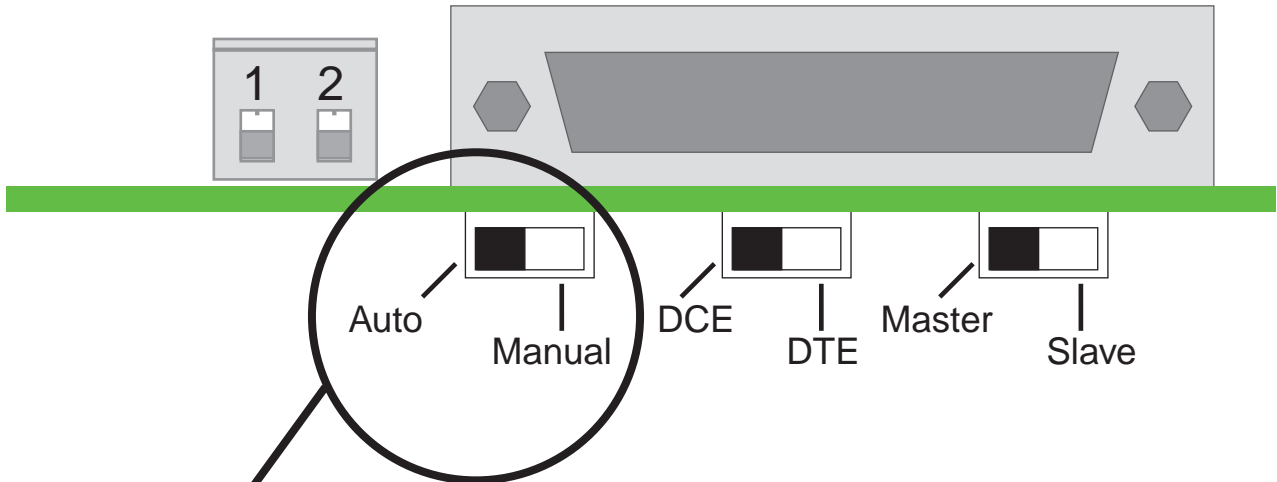
MANUAL: Use this setting on all units in a single master
configuration or on a slave unit.

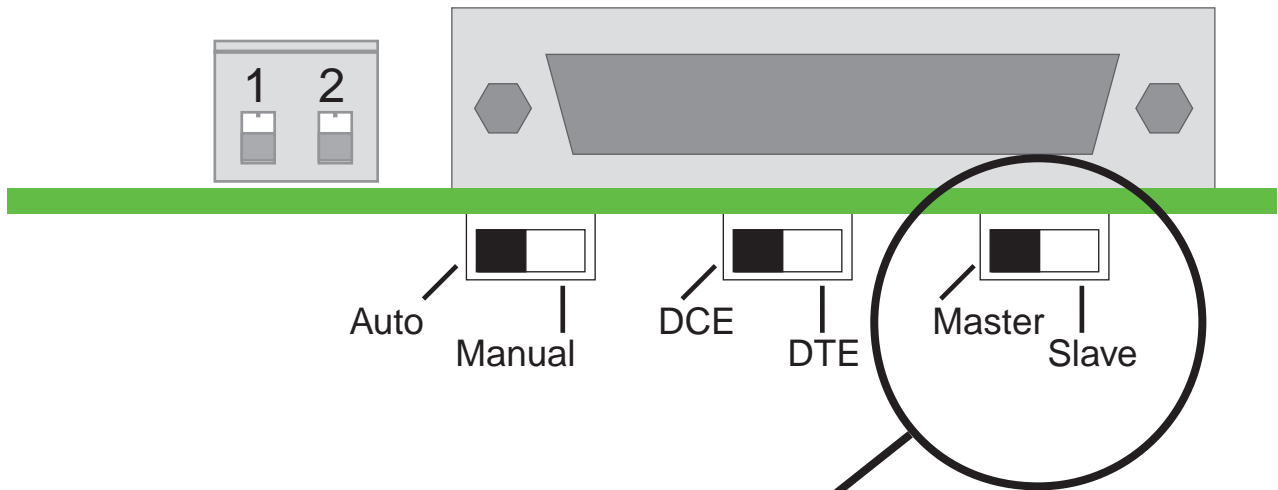AUTO: Use this setting on a master unit in a redundant
master configuration.
All slave units should *always* be set to manual.

D19100SHR Series

Auto
Manual
DCE
DTE
Master
Slave

DCE: RS232 connections are configured as Data Communications Equipment

DTE: RS232 connections are configured as Data Terminal Equipment

D19100SHR Series

1   2

Auto
      Manual   DCE
                            DTE   Master
                                               Slave

When Auto/Manual switch is set to Manual,
sets master and slave units.
In a single master configuration.

When Auto/Manual switch is set to Auto,
Master sets primary master,
Slave sets redundant master.

D19100SHR Series
FAILURE LOGIC TABLE

If break in:	Loop LED	Master	Slave 1	Slave 2	Slave 3
A1	A	Y	OFF	Y	Y
	B	G	G	G	G
A2	A	Y	G	OFF	Y
	B	G	G	G	G
A3	A	Y	G	G	OFF
	B	G	G	G	G
A4	A	Y	G	G	G
	B	G	G	G	G
B1	A	G	G	G	G
	B	Y	Y	Y	OFF
B2	A	G	G	G	G
	B	Y	Y	OFF	G
B3	A	G	G	G	G
	B	Y	OFF	G	G
B4	A	G	G	G	G
	B	Y	G	G	G

NOTE:
Grayed out areas
indicate good
operational loop
in noted direction.
Multiple fiber breaks
follow the failure logic
for that loop.

KEY:
G - Green
Y - Yellow
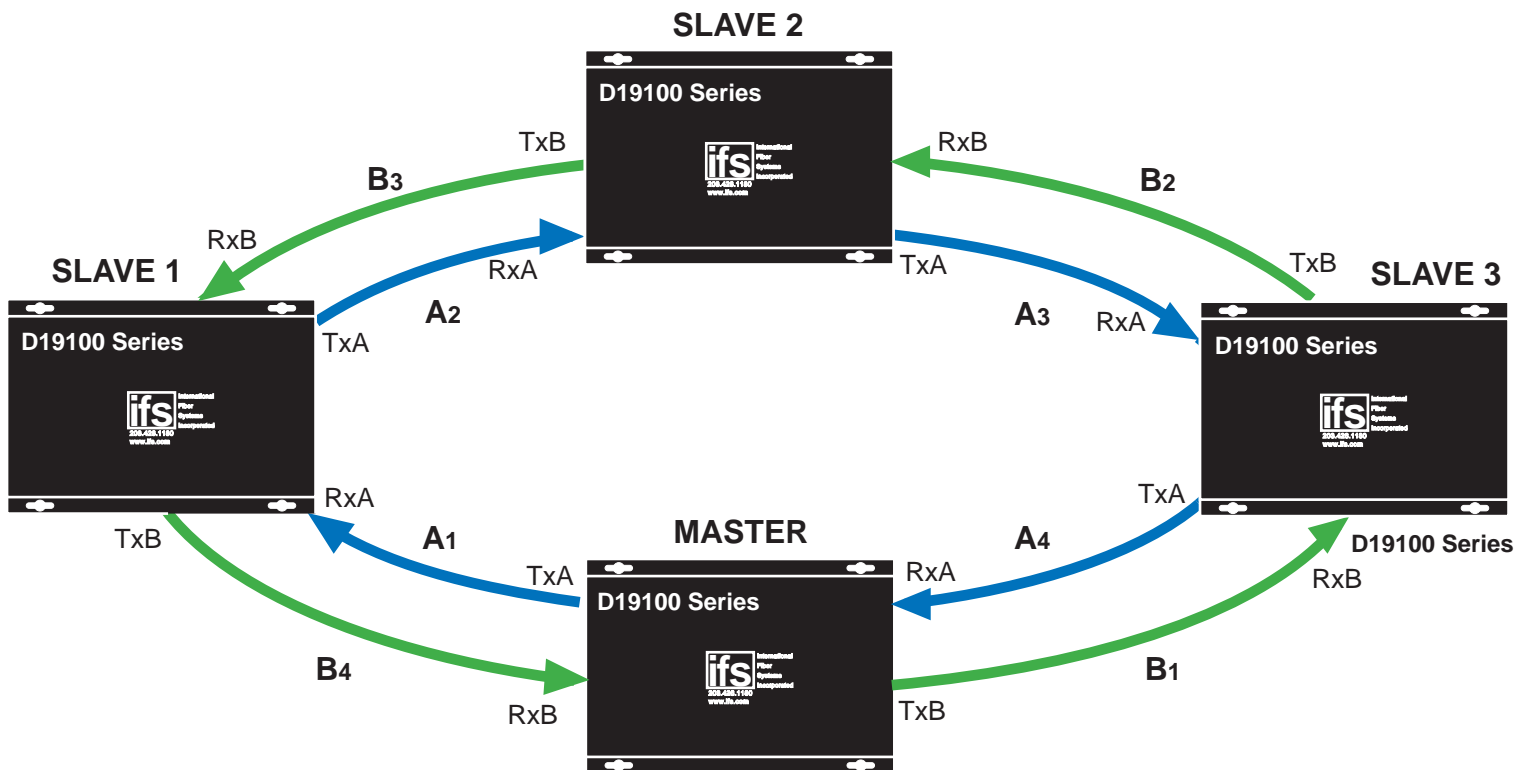
INSTALLATION INSTRUCTIONS FOR ADDITIONAL COMPONENTS NEEDED
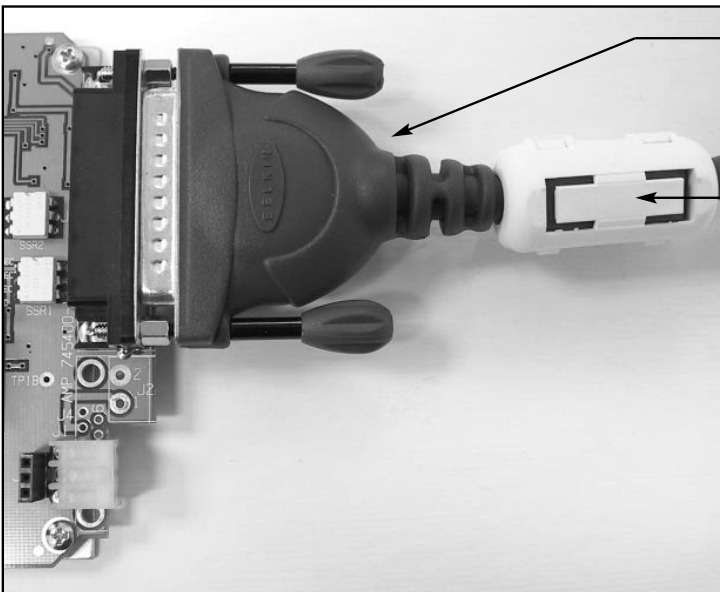TO MEET EMISSION REQUIREMENTS ON THE **D19100SHR SERIES** PRODUCTS.
INSTALL AS SHOWN.
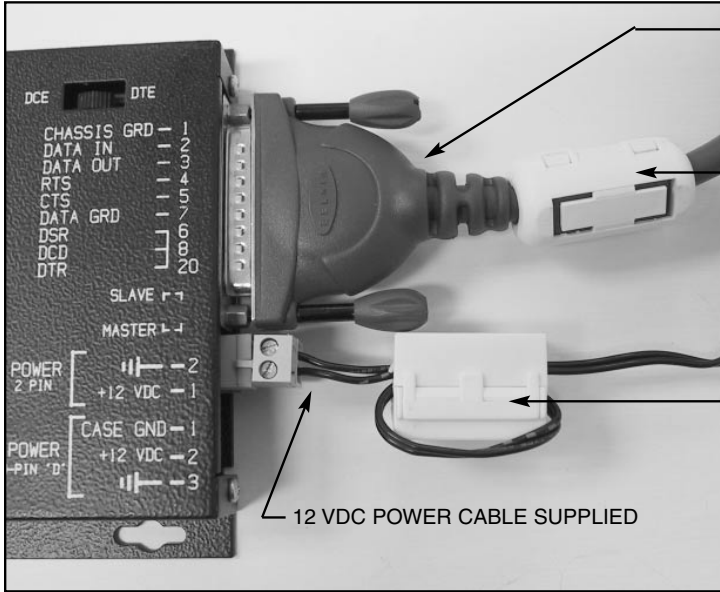
DB 25 DATA CABLE
(CUSTOMER SUPPLIED)
RADIO SHACK PART NO. 26-240
OR EQUIVALENT

1) INSTALL A SEPARATE SUPPLIED
EMI FILTER CLAMP AS SHOWN
2) DIGI-KEY PART NUMBER
240-2065-ND OR STEWARD PART
NUMBER 28A0640-0A0
OR EQUIVALENT

1) INSTALL A SEPARATE SUPPLIED
EMI FILTER CLAMP AS SHOWN
2) DIGI-KEY PART NUMBER
240-2076-ND OR STEWARD PART
NUMBER 28A2029-0A0
OR EQUIVALENT

12 VDC POWER CABLE SUPPLIED

D19100SHR

DB 25 DATA CABLE
(CUSTOMER SUPPLIED)
RADIO SHACK PART NO. 26-240
OR EQUIVALENT

1) INSTALL A SEPARATE SUPPLIED
EMI FILTER CLAMP AS SHOWN
2) DIGI-KEY PART NUMBER
240-2065-ND OR STEWARD PART
NUMBER 28A0640-0A0
OR EQUIVALENT

D19100SHR-R3

Appendix

Automatic Switching Master

The automatic switching master feature gives the Self Healing Ring the capability of having two redundant masters for the purpose of increasing fault tolerance Each master node may be connected to individual host computers, or to a single host computer using a simple Y connection. Master nodes may be located anywhere in the ring. In a redundant master configuration, one master will always be in active mode while the other in standby mode. The active master will transmit and receive RS232/485/422 data as usual while the master in standby mode will ignore data at at it's data input and it's data output will be inactive and stay in tristate. If a master in active mode fails for any reason, through automatic switching, the other master will enter active mode.

Loss-of-Data Detection

The loss-of-data detection feature increases fault tolerance in the RS232 data path from master to host computer. This feature is only applicable when automatic switching master is enabled. A loss-of-data jumper setting on the SHR sets a timeout on host data input inactivity. If the data input from the host computer remains inactive for a set amount of time, a break in the data path is assumed. In this case, a master in active mode will enter standby mode allowing the other master to become active.

Jabber Error Detection (Anti Streaming)

Used to detect an out-of-control RS232 data source. In some systems, an RS232 data source should not continuously transmit for more than a specified amount of time. This feature is used to disable an out-of-control data source by monitoring how long the CTS/RTS input line remains active. If it remains active for more than the set amount of time, the RS232 input is gate off. Once an error occurs, the error is latched. The only way it may be reset is by manually pressing the Anti-Streaming Reset button or cycling power. In order for Jabber Error Detection to gate off the RS232 input, CTS/RTS must be enabled.

Fail Relay

This solid-state relay is normally closed and only opens during a failure. On a slave, the fail state indicates that lock cannot be achieved one or both of the fiber inputs. On a master, the fail state indicates that lock cannot be achieved one or both of the fiber inputs, or that a fiber loop is reversed indicating a failure somewhere in the ring. On both a master and slave, a Jabber Error is considered as a fail state and opens the relay.

RTS/CTS

The RTS/CTS input is always looped around and drives the RTS/CTS output for use with computers that require hardware flow control. The only exception to this is when Auto Switching Master is enabled and the unit is in standby mode. In this case, the RTS/CTS RS232 output driver is tristate so that a Y cable may be used to connect the output from both masters together. If a Y cable is not used, the RTS/CTS input is used to gate RS232 input data. In this case, RS232 input data would be gated off unless CTS/RTS is in the active state.

Master Relay

When Auto Switching Master is disabled, the solid-state relay is closed when the unit is configured as a master and open when configured as a slave. By enabling Auto Switching Master, the unit becomes a master. But in this case, the relay is closed when the unit is in active mode and open in standby mode.

FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation.

Changes or modifications not expressly approved by International Fiber Systems, Inc. could void the user's authority to operate the equipment.

> NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CLASS 1 LASER PRODUCT
(For purposes of IEC 60825-1)

Complies with FDA Performance Standard for Laser Products
Title 21
Code of Federal Regulations
Subchapter J

Comprehensive Lifetime Warranty

(a) Seller warrants to the original End User that products and any services furnished hereunder will be free from defects in material and workmanship as of the date of delivery, and will conform to Seller's published technical specifications. The foregoing shall apply only to failures to meet said warranties which appear within that period of time during which the Products are installed in their original installation for the original End User and operator of such Products; provided, however, that in the event of product discontinuance, warranty support is limited to five (5) years from the announcement of discontinuance. Notwithstanding the preceding sentence, the duration of the warranty period for products not manufactured by Seller (e.g., fiber optic cabling, test equipment, power supplies or batteries) shall be the warranty period offered by the original manufacturer, if any.

(b) The conditions of any tests shall be mutually agreed upon and Seller shall be notified of, and may be represented at, all tests that may be made. The warranties and remedies set forth herein are conditioned upon (a) proper storage, installation, use and maintenance, and conformance with any applicable recommendations of Seller and (b) Buyer promptly notifying Seller of any defects and, if required, promptly making the product available for correction.

(c) If any product or service fails to meet the foregoing warranties, Seller shall thereupon correct any such failure either at its option,

(i) by repairing any defective or damaged product or parts of the products, or (ii) by making available any necessary repaired or replacement products or parts thereof. Any repaired or replacement part or product shall be warranted for the remaining period of the original Warranty Period. Seller shall pay, or credit Buyer for, the cost of freight for all return shipments of products or parts to Buyer. Where a failure cannot be corrected by Seller's reasonable efforts, the parties will negotiate an equitable adjustment in price.

(d) The preceding paragraph sets forth the exclusive remedies for claims based on defect in or failure of products or services, whether the claim is in contract, indemnity, warranty, tort (including Seller's negligence), strict liability or otherwise and however instituted. Upon the expiration of the warranty period, all such liability shall terminate and BUYER shall have a reasonable time, within thirty days after the warranty period, to give written notice of any defects which appeared during the warranty period. The foregoing warranties are exclusive and in lieu of all other warranties, whether written, oral, implied or statutory. NO IMPLIED OR STATUTORY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY. Seller does not warrant any products or services of others which BUYER has designated.

Contacting us

For help installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, contact us during business hours (Monday through Friday, excluding holidays, between 5 a.m. and 5 p.m. Pacific Time).

Sales and support contact information

North America	**Toll-free:** 855.286.8889 in the US, including Alaska and Hawaii; Puerto Rico; Canada.
	Outside the toll-free area: 503.885.5700.
	E-mail: *techsupport@interlogix.com*
Europe	Select *Contact Us* at www.utcfssecurityproducts.eu
Australia	security.tech.support@interlogix.com.au

Note: Be ready at the equipment before calling.

Online

Another great resource for assistance with your Interlogix product is our online publication library. To access the library, go to our website at the following location:

http://www.interlogix.com/transmission[1]

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1.   Many Interlogix documents are provided as PDFs (portable document format). To read these documents, you will need Adobe Reader, which can be downloaded free from Adobe's website at *www.adobe.com*.

Product Disassembly Instructions for WEEE

Per European Directive 2002/95/EC Waste Electrical and Electronic Equipment

Required Tools:

One number 2 Phillips (crosstip) screwdriver.
One number 2 flat screwdriver.

For the enclosed box version:

1. Locate and remove box cover securement screws. Usually, but not limited to, at least 4 screws.
2. Lift off box top cover.
3. Locate and remove securement screws for printed circuit board.
4. If there are multiple boards to the assembly, continue removing securement screws until none are left.
5. Lift off printed circuit board.
6. Disassembly of box version of product is complete.

For rack version:

1. Locate and remove securement screws for printed circuit board. Usually, but not limited to, at least 4 screws.
2. If there are multiple boards to the assembly, continue removing securement screws until none are left.
3. Lift off printed circuit board(s).
4. Disassembly of rack card version of product is complete.