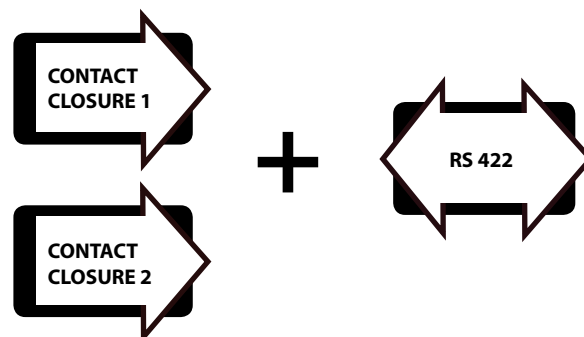# MERIDIAN
## T E C H N O L O G I E S

Digitally Encoded Two Uni-directional
Contact Closure and One Full Duplex
RS-422  Data (Manchester, Bi-Phase)
over  two single-mode fibers



CONTACT CLOSURE 1

CONTACT CLOSURE 2

**+**

RS 422

## FEATURES:

- One Slot Digital Module Design

- Real Time Contact and  Data Transmission

- Meets RS-250C Short Haul  Transmission Specifications

- 2 User-selectable, Contact Mapping (N.O, N.C)

- Full Duplex RS-422  Data Channel

- Wide Optical Dynamic Range:  Eliminates Need For Optical Attenuators

- Surface Mount Technology (SMT) for High Reliability and Repeatability

- *SpectraSmart*™ Network Management Compatible

- Local LED Status Indicators to Monitor Critical System Diagnostics for Performance Parameters

- ST, FC Optical Connector

- Hot Swappable Cards

- Laser Back - Biased Photo Detector Circuitry for
- Stable  Optical Output Over Full Temperature Range.

- Meets  EIA RS-170, RS-343A Formats

- DB25F connector for Contact/Data interfaces

## DESCRIPTION:

This ST-2C1F/1F-55/57 and SR-2C1F/1F-57/55 products incorporate an all-digital encoding technology and transmit following signals over two single-mode fibers:

Tx side:
ST-2C1F/1F-55/57
a.  2-ch Contact Closure = Tx @ 1550nm
b.  1-ch RS-422 Data = Tx @ 1550nm & Rx @ 1570nm

Rx side:
SR-2C1F/1F-57/55
a.  2-ch Contact Closure = Rx @ 1550nm
b.  1-ch RS-422 Data = Rx @ 1550nm & Tx @ 1570nm

The Contact Closure channels can be configured as either Normally Open (N.O.) or Normally Closed (N.C.).
The  standard  DB25F connector is provided for the contact/ data interfaces.
The **DigiSlim**  systems  are  also  compatible with Meridian's *SpectraSmart* Network management and diagnostic PC based system. See the *SpectraSmart* brochure for additional details.

## CONFIGURATIONS:

The **DigiSlim**  products  is  available  as rack mount cards that  can  be installed in either Meridian's  desk chassis or  in 19" racking frames.  Shelf/surface mount modules are also available.  This system can  be  configured in  either  star (module to rack) or  trunking  (rack  to rack)  configurations. These systems can be made a standalone system by  using the SR-500, SR-1000,  1 or 2  slot  desk  / wall mount chassis (87 VAC- 264VAC)

## MARKETS:

- Intelligent transportation systems (ITS)
- Security and surveillance
- Access Control

# SPECIFICATIONS:

## Contact Closure

Formats ..................................... Normally Open (N.O.) or Normally
Closed (N.C.) - jumper selectable
Rate ......................................... 10 Hz.(Per Channel)
Contact Rating ......................... 0.3A, 30V AC / DC
Contact Bounce Time .............. 5 ms

## Data

Formats — RS-422, Manchester, Bi-Phase
Data Rate — DC to 1Mb/s
Bit Error Rate — $10^{-9}$*

## Optical

Fiber Data Rate ..................... 250 Mb/s

## Connectors

Optical ..................................... ST - MM(default), FC- SM(default)
Contacts/Data........................... DB25 (Female)
Power (module) ........................ See SR-500 Brochure for details

## Power **

Card .......................................... 6 Watts

## Indicators (LEDs)

1 - Green ........................ Power On
1 - Bi-color .................... TX Carrier/ Laser Over  Current
1 - Bi-color .................... RX Carrier - Present / Error
2 - Green ........................ Contact Closure Present
1 - Green ........................ Tx Data Present
1 - Green ........................ Rx Data Present

## Physical

Dimensions (Card) .......... 160 mm (6.3") H,  127 mm (5") L
20mm (0.80") W
Weight (Card) ................ 450 gms (16 Oz)
No. of Slots ................... 1
Module .......................... See SR-500 Brochure

## Environmental

Operating Temperature ... -34ºC to +74ºC
Storage Temperature ....... -55ºC to +85ºC
Relative Humidity ........... 0 to 95% Non-condensing
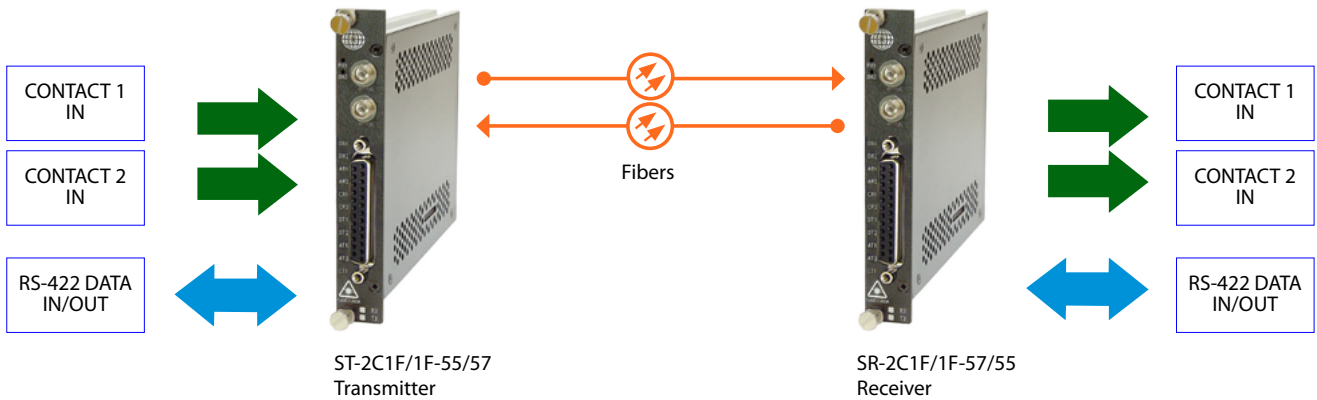
## Quality

MTBF ........................... >170,000 hours @ Ground Fix
35ºC per MIL217F
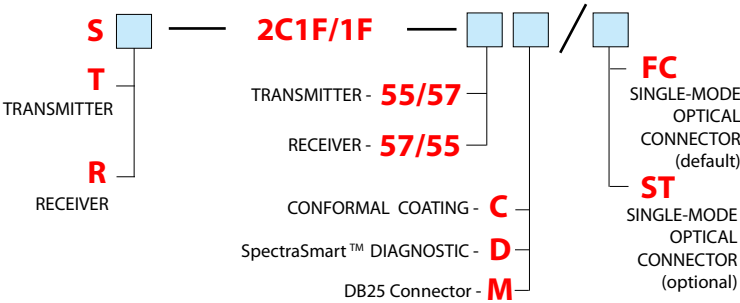
\* measured @ max. optical budget
\** Due to variations of drivers and diagnostic options,
power shown @ max  value

## Part Numbers:

```
 S □ — 2C1F/1F — □ □ / □
 T                              FC
TRANSMITTER     TRANSMITTER - 55/57    SINGLE-MODE
                                        OPTICAL
                                        CONNECTOR
                RECEIVER - 57/55        (default)
 R                                      ST
RECEIVER                                SINGLE-MODE
                CONFORMAL COATING - C   OPTICAL
                                        CONNECTOR
          SpectraSmart™ DIAGNOSTIC - D  (optional)
                DB25 Connector - M
```

CONTACT 1 IN → [ST-2C1F/1F-55/57 Transmitter] → Fibers → [SR-2C1F/1F-57/55 Receiver] → CONTACT 1 IN

CONTACT 2 IN →

RS-422 DATA IN/OUT ↔

ST-2C1F/1F-55/57
Transmitter

SR-2C1F/1F-57/55
Receiver

CONTACT 2 IN

RS-422 DATA IN/OUT

# OPTICAL:

| Fiber Type/Size (um) | Optical Output (dBm) | Receiver Sensitivity (dBm) | Optical Budget (dB) | Wavelength (nm) | Optical Connector | Optical Dynamic Range (dB) | Max Distance (Km) |
|---|---|---|---|---|---|---|---|
| Singlemode (DFB Laser) 9 / 125 | +1 | -24 | 25 | 1550. 1570 | ST, FC | 24 | 70 |