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MODEL 1582-45L Switch

1.0 General

1.1 Equipment Description - The 1582-45L provides remote or local latched relay switching between CH1, CH2, CH3 and CH4 data signals. The maximum data rate is 1 Mbps on the clock and data lines (8 lines) and up to 56 kbps on all other lines. Remote selection of CH1 to CH4 is by a contact closure to ground of the corresponding selection pin when the SELECT switch on the front panel is set to REMOTE. Local Selection of CH1 to CH4 is by push button switches on the front panel when the SELECT switch on the front panel is set to LOCAL. When in LOCAL operation all remote commands will be disabled, and when in REMOTE operation all the push buttons on the front panel will be disabled.

On power loss the selected channel remains on. LEDs and contact closures to ground indicate the channels selected and REMOTE or LOCAL operation. The 1582-45L Switch is housed in a 1 3/4” X 19” X 12” deep rack mount chassis.

FIGURE 1.1 Model 1582-45L Front and Rear Panels

FIGURE 1.2 Model 1582-45L Block Diagram
1.2 Technical Characteristics

**TABLE 1.1 1582-45L Switch Specifications***

**Data Characteristics**

<table>
<thead>
<tr>
<th>Input/Output</th>
<th>RS422 or RS232</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Rate, max.</td>
<td>1 Mbps on clock and data lines up to 56 kbps on other lines</td>
</tr>
<tr>
<td>Pins Switched</td>
<td>All 25</td>
</tr>
</tbody>
</table>

**Switch Characteristics**

<table>
<thead>
<tr>
<th>Type</th>
<th>Latching Relay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Direction</td>
<td>Both ways, non-blocking</td>
</tr>
<tr>
<td>Isolation</td>
<td>40 dB, min.</td>
</tr>
<tr>
<td>Switch time</td>
<td>10 milliseconds, max.</td>
</tr>
<tr>
<td>Contact resistance</td>
<td>10Ω max., &lt; 1Ω typ.</td>
</tr>
<tr>
<td>Configuration</td>
<td>25P4T</td>
</tr>
</tbody>
</table>

**Controls and Indicators**

- LOCAL/REMOTE Switch: Slide switch selects between LOCAL and REMOTE operation
- LOCAL CH Select: Push button switches locally select CH1, CH2, CH3, or CH4
- LEDs: CH1, CH2, CH3, CH4 ON-LINE; POWER; LOCAL; REMOTE

**Other**

- Connector, Alarm/Control: Barrier Strip
- Connectors, Data: DB25, female
- Mechanical: 19 inch standard chassis 1.75” high X 12” deep
- Power: Single AC Power Supply; 100-240 ±10% VAC, 47 - 63 Hz, 30 W

*+10 to +40 degrees C; Specifications subject to change without notice*
2.0 Installation

2.1 Mechanical - The 1582-45L consists of one printed circuit board (PCB) housed in a 1 RU (1 3/4 inch high) by 12 inch deep chassis. A single power supply provides +5V and +15V DC power to the PCB. Connectors are DB25, female for the data connections and a barrier strip for the controls/indicators. The 1582-45L can be secured to a rack using the 4 holes on the front panel. Figure 2.1 shows how the 1582-45L is assembled. J6 connects DC Power to the PCB as shown and J2 and J4 are connected to the rear panel DB25 connectors via a ribbon cable.

![FIGURE 2.1 1582-45L Mechanical Assembly](image-url)
2.2 Rear Panel Signals - The input/output and control/indicator connectors located on the rear panel are shown in Figure 2.2. In order to select CH1 to CH4 remotely, switch SW5 on the front panel must be set to REMOTE operation. With SW5 set to REMOTE operation, the local push button switches on the front panel will be disabled.

### J6 - CONTROLS/INDICATORS
Contains REMOTE SELECT signals, CH1 to CH4 indicator signals and LOCAL and REMOTE indicator signals.

### J1 to J4 - DATA 1 to 4
CH1 to CH4 data from which J5 (DATA SWITCHED) is switched between; DB25, female connector.

### J5 - DATA SWITCHED
The data switched will be from (or to) either CH1, CH2, CH3, or CH4; DB25, female connector.

---

**FIGURE 2.2 1582-45L Rear Panel Signals**

**FIGURE 2.3 DB25, Female Connector Pinout**

---

**TABLE 2.1 J1,J2,J3,J4,J5 Pinout (Data, DB25 - Figure 2.3)**

<table>
<thead>
<tr>
<th>Function</th>
<th>Pin #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLOCK/DATA</td>
<td>2,3,9,11,14,16,17,24</td>
<td>1 Mbps RS422 clock/data lines</td>
</tr>
<tr>
<td>OTHER</td>
<td>1,4,5,6,7,8,10,12,13,15, 56 kbps data/other lines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18,19,20,21,22,23,25</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 2.2 J6 Pinout (Controls and Indicators, Barrier Strip)**

<table>
<thead>
<tr>
<th>Function</th>
<th>Pin #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH1 SELECT</td>
<td>1</td>
<td>Closure to ground and switch SW5 set to REMOTE selects CH1</td>
</tr>
<tr>
<td>CH2 SELECT</td>
<td>3</td>
<td>Closure to ground and switch SW5 set to REMOTE selects CH2</td>
</tr>
<tr>
<td>CH3 SELECT</td>
<td>5</td>
<td>Closure to ground and switch SW5 set to REMOTE selects CH3</td>
</tr>
<tr>
<td>CH4 SELECT</td>
<td>7</td>
<td>Closure to ground and switch SW5 set to REMOTE selects CH4</td>
</tr>
<tr>
<td>CH1 ONLINE</td>
<td>9</td>
<td>*Relay closure to ground (&lt;5Ω) indicates CH1 is selected</td>
</tr>
<tr>
<td>CH2 ONLINE</td>
<td>10</td>
<td>*Relay closure to ground (&lt;5Ω) indicates CH2 is selected</td>
</tr>
<tr>
<td>CH3 ONLINE</td>
<td>11</td>
<td>*Relay closure to ground (&lt;5Ω) indicates CH3 is selected</td>
</tr>
<tr>
<td>CH4 ONLINE</td>
<td>12</td>
<td>*Relay closure to ground (&lt;5Ω) indicates CH4 is selected</td>
</tr>
<tr>
<td>LOCAL ALARM</td>
<td>13</td>
<td>**Open collector output (&lt;5Ω) to ground when in LOCAL operation</td>
</tr>
<tr>
<td>REMOTE ALARM</td>
<td>14</td>
<td>**Open collector output (&lt;5Ω) to ground when in REMOTE operation</td>
</tr>
<tr>
<td>GND</td>
<td>2,4,6,8</td>
<td>Ground</td>
</tr>
</tbody>
</table>

*Max voltage able to be connected to this is +30VDC @ 100ma
**Max voltage able to be connected to this is +20VDC @ 30ma
2.3 Front Panel Controls and Indicators - Figure 2.4 shows the controls and indicators located on the front panel. When switch SW5 is set to REMOTE operation, the push button selection switches, SW1-SW4, on the front panel are disabled. When switch SW5 is set to LOCAL operation the push button switches, SW1-SW4, will be enabled and all remote control will be disabled.

2.4 Operation

2.4.1 Installing and Operating the 1582-45L

1.) Install the 1582-45L in the equipment rack.
2.) Connect data to the DB25 DATA connectors, J1 - J5 (Figure 2.2).
3.) Connect to signals on the CONTROLS/INDICATORS connector, J6, as desired (Figure 2.2).
4.) Connect 100-240 ±10% VAC, 47 - 63 Hz to AC IN on the back panel (Figure 2.2).
5.) Be sure the POWER LED, DS3, is on (Figure 2.4).
6.) Set SW5 for REMOTE or LOCAL operation (Figure 2.4).
7.) Choose the desired data path either remotely (J6, Figure 2.2) or locally using the push buttons (SW1 - SW4, Figure 2.4) and check for proper data flow and that the appropriate CHANNEL LED (DS4 - DS7, Figure 2.4) is lit.
8.) AC Fuse - The fuse is a 5 mm X 20 mm, 2 amp slow blow (Type T) and is inserted in the far slot in the drawer below the AC input as shown in Figure 2.5. There is a spare fuse in the near slot. If a fuse continues to open, the power supply is most likely defective.
AC Fuse - 2 amp slow blow (Type T), 5 mm X 20 mm

INPUT
100-240± 10% VAC
47-63 Hz
2A MAX

FUSE
TYPE T 2A GDC
250 VOLT
FOR 100 - 240 V~

FIGURE 2.5  Fuse Location and Spare Fuse
3.0 Environmental Use Information

A. **Rack-Mounting** - To mount this equipment in a rack, please refer to the installation instructions located in the user manual furnished by the manufacturer of your equipment rack.

B. **Mechanical Loading** - Mounting of equipment in a rack should be such that a hazardous condition does not exist due to uneven weight distribution.

C. **Elevated Operating Ambient Temperature** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack may be greater than room ambient temperature. Therefore, consideration should be given to Tmra.

D. **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. Additional space between unit may be required.

E. **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits could have on over current protection and supply wiring. Appropriate consideration of equipment name plate rating should be used when addressing this concern.

F. **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connection to the Branch (use of power strips).

G. **Top Cover** - There are no serviceable parts inside the product so, the Top Cover should not be removed. If the Top Cover is removed the ground strap and associated screw MUST BE REINSTALLED prior to Top Cover screw replacement. FAILURE TO DO this may cause INGRESS and/or EGRESS emission problems.