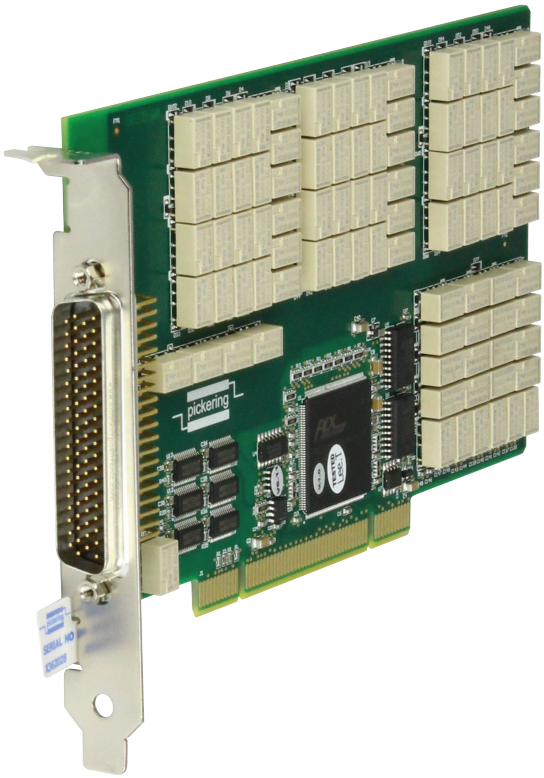
PRELIMINARY DATA

X50-200
CAN/FlexRay/Differential Bus Fault Insertion Card

- Fault Insertion on 4 or 8 Channels of 2 Wire Connections
- Suited for CAN Bus and FlexRay Fault Insertion
- Controlled Transmission Line Impedance
- Simple Insertion of Shorted Pair, Open and Battery/Ground Connection
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by eBIRST
- 3 Year Warranty



The X50-200 is designed to simulate common faults on two wire communication interfaces such as CAN Bus. It supports 4 or 8 channels of two wire serial interfaces which can simulate an open fault in either or both wires, a short between both wires or a short to one of eight externally applied fault connections – such as a battery connection or ground - via four fault buses.

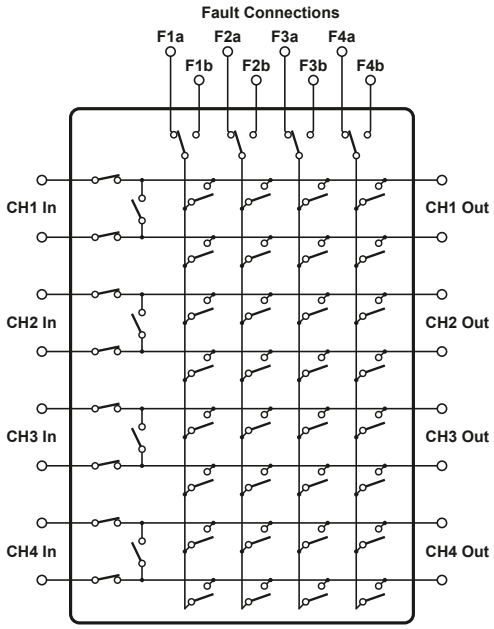
Each channel can support up to 0.3A and is rated to handle up to 100V between the wire pairs. These pairs have controlled transmission line impedance suited to most differential signalling systems, including fast CAN Bus interfaces and RS232.

Each fault bus is capable of carrying 2A allowing multiple channels to be connected to the same fault condition. Additionally, each fault bus features a changeover relay to allow the user to select alternative fault conditions.

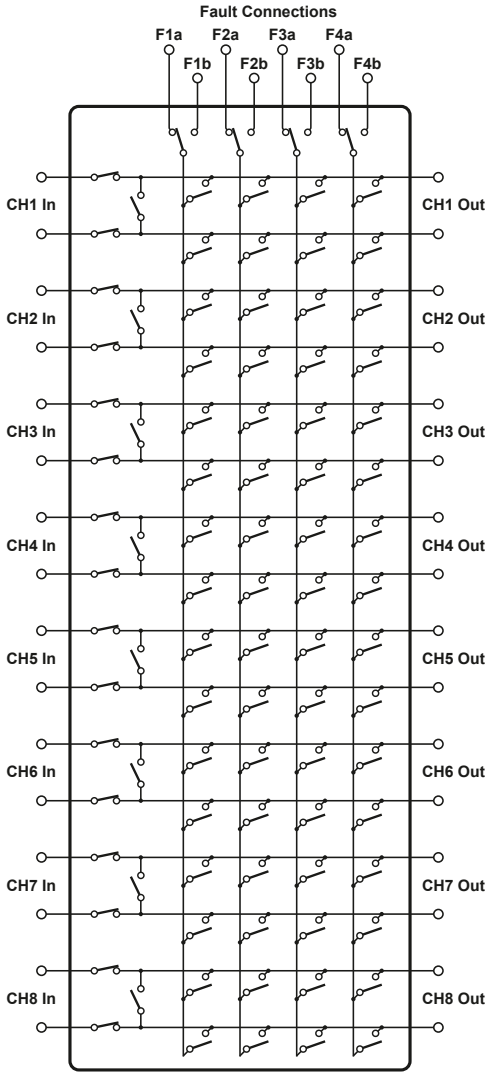
The front panel connector is an easy to use 78-way D-type which is fully supported by Pickering Interfaces range of connector accessories. Relays are high quality EMR types designed for telecommunications use with a long service life.

Supported by eBIRST

This product is supported by eBIRST which tests the switching system using an external tool. eBIRST provides a graphical output of its tests which includes an image showing the location of any defective relay. For more information on eBIRST see 93-000D.pdf



X50-200-004 2-Wire, 4-Channel Fault Insertion Switch



X50-200-008 2-Wire, 8-Channel Fault Insertion Switch

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Data Path Specification

Configuration:	4 or 8 pairs of two wire connections designed for use on differential serial interfaces.
Faults Simulated:	Open on either wire or both, short between wires, short to one of eight fault connections via four fault buses.
Differential Line Impedance:	120Ω
Voltage Rating: Current Rating: Max Hot Switch Power:	100V 0.3A 30W
Path Resistance:	<2Ω
Typical Bandwidth:	50MHz Differential
Operate Time:	3ms typical

Fault Bus Specification

Configuration:	Four fault buses each with a changeover relay for selecting one of two fault conditions.
Voltage Rating: Current Rating: Max Hot Switch Power:	100V 2A 60W

Power Requirements

+3.3V	+5V	+12V	-12V
150mA	1A	0	0

Physical Parameters

Physical Characteristics:	Single slot short PCI format
Signalling Environment:	33MHz, 32-bit, Universal (+3.3V & +5V).
Front Panel Connector:	78-way male D-Type

Relay Type

The X50-200 is fitted with high quality electro-mechanical relays, Palladium-Ruthenium Gold covered contacts. A **Spare Relay** is built onto the circuit board to facilitate easy maintenance with minimum downtime.

PCI Compliance

The X50-200 complies with the PCI Specification 2.0 (issued Feb 2004).

Safety & CE Compliance

All cards are fully CE compliant and meet applicable EU directives: Low-voltage safety EN61010-1:2001,
EMC Immunity EN61000-6-1:2001, Emissions EN55011:1998.

Programming

Pickering provide kernel, IVI and VISA (NI and Agilent) drivers which are compatible with all Microsoft supported versions of Windows and popular older versions. The VISA driver is also compatible with Real-Time Operating Systems such as LabVIEW RT. For other RTOS support contact Pickering.

These drivers may be used with a variety of programming environments and applications including:

- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C+)
- **Agilent** VEE
- **Mathworks** Matlab
- **Marvin** ATE Easy
- **MTQ Testsolutions** Tecap

Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries.

Product Order Codes

PCI 4-Channel Differential Pair Fault Insertion Switch Card:	**X50-200-004**
PCI 8-Channel Differential Pair Fault Insertion Switch Card:	**X50-200-008**

Support Products

eBIRST Switching System Test Tool

This product is supported by the eBIRST test tools which simplify the identification of failed relays, the required eBIRST tools are below. For more information see **eBIRST**.

Product	Test Tool	Adapter
All Types	**93-006-001**	**Not Required**

Spare Relay Kits

Kits of replacement relays are available for the majority of Pickering's switching products, simplifying servicing and reducing down-time.

Product	Relay Kit
All Types	**91-100-001**

For further assistance, please contact your local Pickering sales office.

Mating Connectors & Cabling

For general purpose (non-differential) connection accessories for the X50-200 card please refer to the **90-006D** 78-way D-type connector data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

Note: To use the X50-200 up to its full operating frequency, cables with twisted pairs must be used.

Operating/Storage Conditions

Operating Conditions

Operating Temperature:	0°C to 55°C
Humidity:	Up to 90% non-condensing
Altitude:	5000m

Storage and Transport Conditions

Storage Temperature:	-20°C to +75°C
Humidity:	Up to 90% non-condensing
Altitude:	15000m

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