LOGIC BEACH Inc.

Control System Troubleshooting

CK-2 Control System Troubleshooter

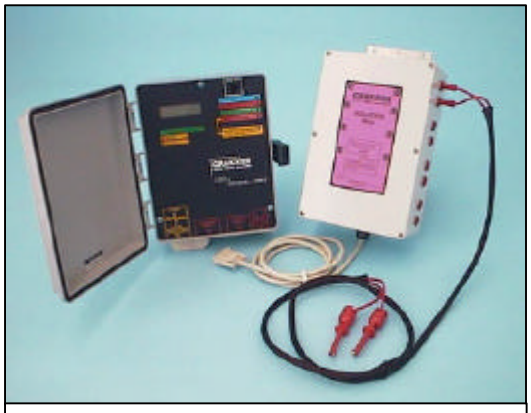
Features

- Trap problems on up to 16 channels of Relay Logic and/or PLC I/O
- Identifies hard-to-find intermittent I/O problems
- Traps `First-Out' events and sequences
- Pinpoints critical control timing at real-time speeds
- Characterizes control system dynamics
- Powerful graphic display simplifies complex relay logic and PLC control sequences
- Great development tool for implementing new control strategies and more.

Overview

The Crakker™ is a revolutionary portable instrument designed to troubleshoot systems utilizing Programmable Logic Controllers (PLC), relay logic or other ON/OFF control techniques. The Crakker™ traps intermittent I/O problems, checks critical process timing, analyzes new or faulty control logic (at real-time speeds) and characterizes control and process system dynamics.

A powerful, high-speed, stand-alone test instrument, the Crakker continuously monitors up to 16 User-selected I/O over time. Signal Isolation Pods allow for direct connection to high and low voltage signals such as level, limit, and proximity switches, pumps, valves, and motors. When a User-defined trigger condition occurs (such as contradicting signals or a fault) the status, switch transitions, and timing of the 16 monitored points before and after the trigger occurred are trapped and stored in Crakker memory. This trapped data is then uploaded to a personal computer and displayed in a time referenced multi-trace graphic format. Events occurring as fast as 200 uS apart can readily be displayed and analyzed using the powerful Zoom feature of the Crakker Communications software.



Crakker CK-2-8 system.

Programming

The Crakker Communications for Windows (CCW) software is used to program the Crakker and perform data analysis. The Crakker is programmed via a Run Program which is completed via a menu-driven `fill-in-the-blank' format and downloaded to the Crakker.

After a run session, the collected data is readily reviewed and analyzed via the powerful multi-channel graphic display. The display is readily customized for inter-channel timing and state studies and can be expanded using the Zoom command to view data on a uS time base. The Trigger and alarm points are clearly marked and powerful cursor control allows for fast onscreen delta-time analysis.

Operation

The Crakker is fast and simple to set-up and use. Connections to monitored signal points are quickly made using leads equipped with unique insulation displacement spring hooks, allowing for fast electrical connection without affecting the integrity of the existing control system wiring.

The Crakker ships complete with Isolation Pod(s), Quick Connect Leads, Crakker Communications

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Software, a plug-in power supply, and User's Manual.

Each Crakker Isolation Pod provides 600VAC of electrical isolation as well as initial signal conditioning for up to eight independent ON/OFF signals. Direct signal input ranging from 5VDC (TTL) to 280VAC/400VDC can be applied to each of the 8 Pod channels.

The Crakker front panel display and status indicators provide important User feedback during setup and operation. Pushbuttons allow for a real time state display of the inputs as well as system status, and enable/disable of a recording session.

In addition to the trigger initiated storage of signal inputs, two individual alarm conditions can be set. When the Crakker recognizes the Alarm on the inputs, a relay output is activated which can be slaved to a audio/visual alarm or dial up system.

SPECIFICATIONS

CK-2 System Base

Inputs: One or two IP-2 Isolation Pods may be connected, 8 or 16 inputs total
Input Scan Rate: 165uS to 1mS depending on setup
Input filtering: 3 programmable levels and OFF (for debounce and AC filtering)
Trigger capability: 1)Logical AND-OR for all channels 2)Trigger Level (Hi/Low) and Edge (Rise/Fall) 3)time based between two channels 4) any channel change
Sample Capacity: 8 Channel – apx. 57,000 records, 16 Channels – apx. 38,000 records. Records only upon input change.
Output Alarms: 2 alarm relays (1A, low-voltage)
Base to PC Serial Comm: RS-232; auto-adjusting Baud Rate; (cables and adapters provided)
Enclosure: gasketed door, dust/splash proof molded plastic; 9.8x8.5x5.5"
Power Requirements: 10 - 26 VDC; 100mA, AC XF provided
Operating: 0 to 50 C; 95% RH (non-condensing)

IP-2 Isolation Pods

Channels: 8 (ON/OFF)
Input Signal Range: 0 to 280VAC/400VDC
Protection Over-Voltage clamped and fused
Input impedance: 100K ohms
Channel Isolation: 600VAC
Pod to Base Isolation: 600VAC
ON/OFF Thresholds: 33 selectable voltages steps, 2Vdc to 210Vdc
I/O Connection method: 5' silicone lead pairs with insulation displacement spring clips; insulated banana jacks on Pod enclosure.
Pod to Base Connection: 4' multi-conductor DB-15M cable
Enclosure: 4.5 x 7.5 x 2.5; dust/splash proof molded plastic w/ hanger

Crakker Communication Software

Menu driven Run Program setup (Triggers, alarms, thresholds, modes). See separate CCW data sheet.
Zoomable Graphic Timing display
Hard Copy banner printout
Self-configuring (no Install Required)
Requires Windows 95, 98, 2000, NT, XP. Serial port.

Ordering Information

CK-2-8: Includes System Base, Isolation Pod (1) and quick-connect leads, CCW Software, connectors DB-9, DB-25, communications cable, AC power adapter and manual.
CK-2-16: includes above and 2 IP-2 Isolation Pods.

Options

CK-CASE: waterproof carrying case for CK-2 and two pods, leads and documentation.

Warranty

One year parts and labor for factory defects or failure under normal use. No liability assumed for consequential damage.

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