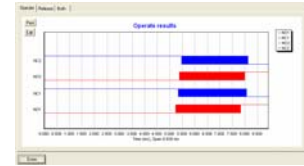


Reflex 10



TURN YOUR PC INTO A LOW-COST RELAY TESTER WITH REFLEX10



REFLEX 10 is ART's New Entry Level Relay Tester. A **LOW-COST READY-TO-USE** Relay Test Module that can be quickly connected to the Parallel Port of a user's PC to make a comprehensive Relay Tester. Ideally suited to low-volume manual production test, laboratory test and incoming inspection applications, **REFLEX 10** provides four terminal **Voltage-Drop** based contact resistance measurement. The modular architecture allows for future expansion of coil drive voltage and contact load voltage and currents when used with optional external power modules.

REFLEX 10 is controlled and programmed with **ARTWorks**, ART's latest generation of Easy-to-Use Windows™ based software for Relay Test. The software is supplied on CD for automatically installing on the users PC. Test sequences are simple, clear and built from pre-written test types to CECC, IEC, MILSpec or custom formats. A relay wizard macro allows a complete relay test program to be built from a few simple prompts. Test sequences can be run, re-tested, cycled or step executed to enable programs to be created and debugged quickly.



The compact and highly portable **REFLEX 10** fully complements ART's higher performance **REFLEX 20** Production and Ultra High-Speed **RT290** Automated Production-Line Relay Testers. The system uses the same device connector interface and test programs with the benefit of easy interchange of device adapters and test programs with the other testers. The software also includes the ability to run self-test routines without any manual adjustment.

REFLEX 10 is designed to test a wide range of relay types, including:

Device types:

- Monostable
- Single and dual coil bi-stable devices
- Form A, B, C contact styles
- 4 pole change over

Tests for:

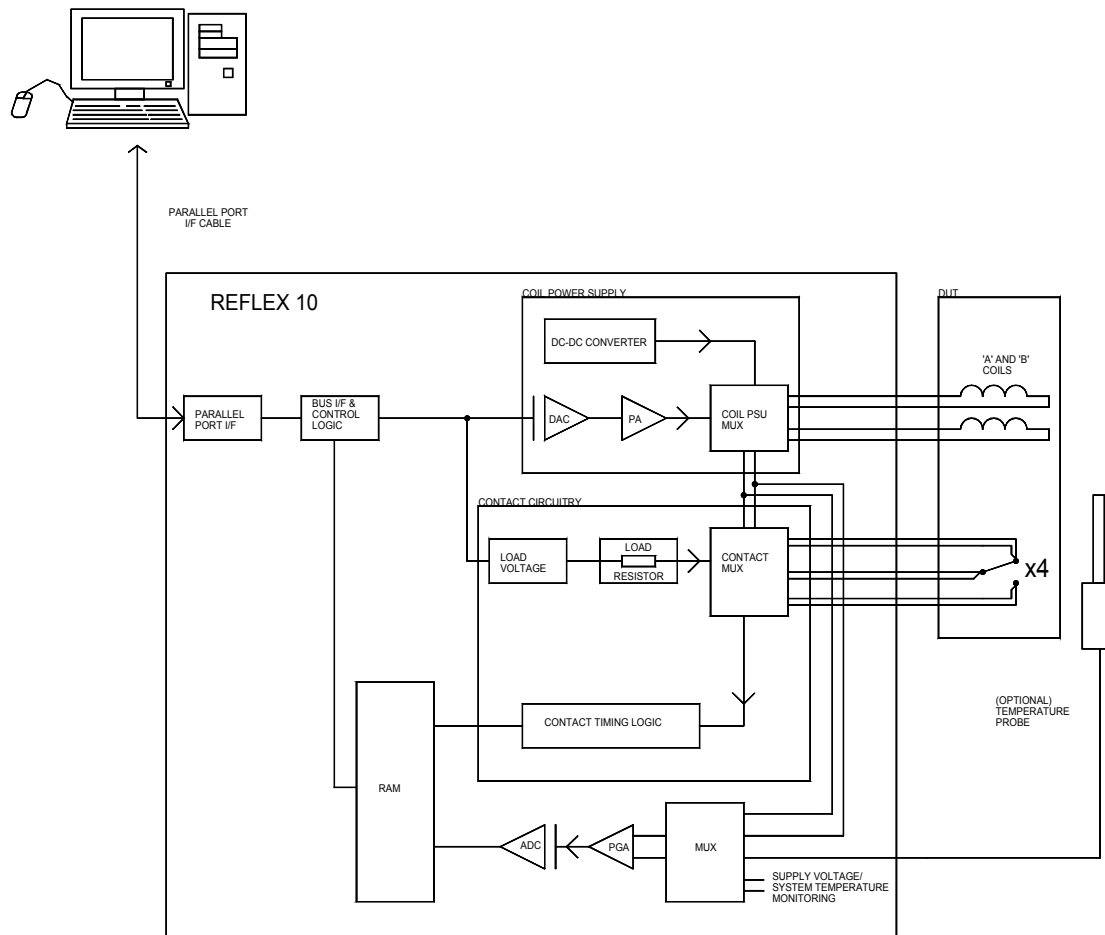
- Contact resistance
- Adaptor continuity (socket test) on all device pins
- Functional
- Coil resistance
- Timing- Operate, Release, Bounce
- Operate and Release voltage



Key Features Summary:

- Low-Cost entry level tester
- Highly Portable using PC parallel port interface
- Ready-to-Use automatically installing Windows based RTEX software
- Comprehensive library of Pre-Written relay test routines
- Voltage drop contact resistance measurement
- Self-test and calibration facility (calibration requires external module)
- Test program & Device connector compatibility with Reflex 20 & RT290
- On-line help documentation
- Expandable coil / contact drive capability

REFLEX 10 System Architecture (single changeover contact shown for clarity)

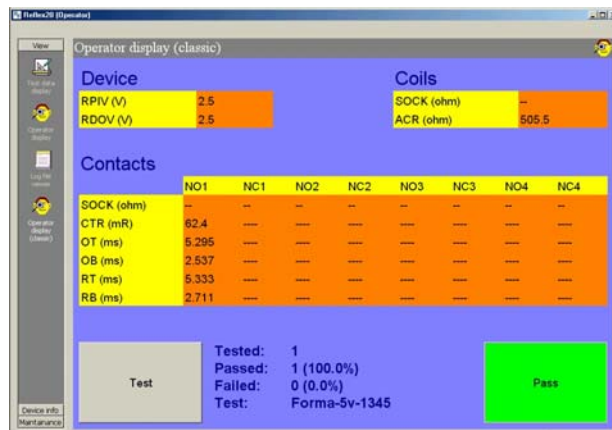


REFLEX 10 Software

Reflex 10 is supplied "Ready to Go" with a Level 1 Software Pack on CD, for easy installation on a user's PC. This includes an easy to use operator interface and a library of standard relay test routines as shown below. New test routines can be easily created or edited by changing the test limits and test condition presented by the software.

Level 1 Software Pack Standard Relay Test Routines

- Adapter Continuity
- Coil Resistance
- Coil Current
- Coil Voltage
- Ambient temperature correction
- Operate (Pull-In) Voltage / Current
- Release (Drop-Out) Voltage/ Current
- V Functional
- V Reform
- Neutral Screen
- Contact Set Shorts
- Contact Voltage Drop
- Contact Resistance
- Contact Resistance Stability

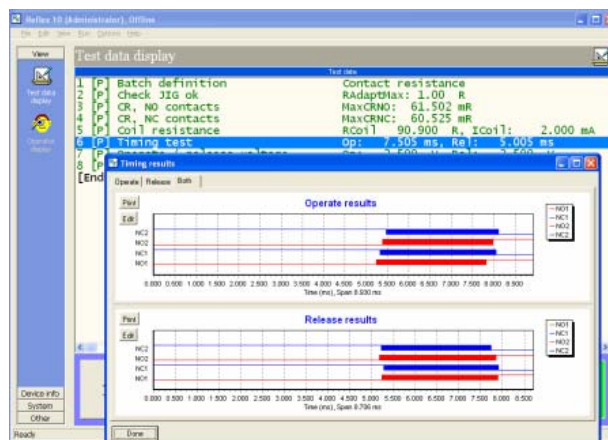


EASY-TO-USE OPERATOR INTERFACE

The basic test capability of REFLEX 10 can be extended by adding the Level 2 Library Pack which includes the following more specialised test types;

Level 2 Software Pack Optional Relay Test Routines

- Diode Check
- V delta CR
- Coil transient suppression (back emf)
- Contact stabilisation time
- Short to device can



GRAPHICAL ANALYSIS OF TEST DATA

ORDERING INFORMATION

Reflex10-4PCO REFLEX10-4 Four Pole Changeover Relay Tester, including Level 1 Software pack, user guide and power supply.

Hardware Options

RFX10-Cal R Manual Calibration leads & set of standard calibration resistors
RFX10 Tprobe Temperature Probe
RFX10 Tprobe-Cal Temperature Probe Calibration Pack
RFX10 Handle Carry handle
RFX10-ASY-700D 0-10 Amps Rated Contact Voltage Drop Measurement Unit
RFX10-PC-01 PC Control Suite for use with Reflex 10 (Windows XP installed)
RFX10-4PCO-HV High Voltage DC Coil Power supply option (5 – 370 V DC)

Software Options:

Level 2 Software Pack

RFX10-Test-Delta CR Optional Delta CR test
RFX10-Test-Diode Optional Diode check test

Note: In the interest of continuous product improvement, ART may change these specifications without notice

REFLEX 10 – SYSTEM SPECIFICATION

Contact

Max. number device contacts	4 pole changeover (multiplexed)
Connection	Fully Kelvin
Resistance measurement method	Voltage drop

Contact Loads:

Standard internal low-level load	30mV/10mA
Standard internal medium power load	6V/100mA or 28V 100mA ^{Note 1}

Measurement resolution	12 bits
CR accuracy	< 0.8% FSD

Note:

1. An alternate internal medium power load can be configured at the time of order. Select from either 6V/100mA or 28V 100mA.

Coil

Max. number device coils	2 (multiplexed)
Connection	Two wire

Coil PSU:

Coil Voltage	Range:	1 – 80V DC
	Resolution:	5mV
	Accuracy:	0.8% +/- 30mV

Max. Coil Current:	400mA (< 10V)
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Optional Higher Voltage DC Coil PSU:

Coil Voltage	Range:	5 – 370V DC
	Resolution:	25mV
	Accuracy:	0.8% +/- 30mV

Device Interface

Connector type	Hi Rose 60 way female socket, compatible with other ART Relay test systems including: RT290, RT90 & Reflex 20 systems
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Recommended System requirements

PC platform	IBM compatible
PC interface	Standard Parallel Port (2 Mtr cable supplied)
Operating system	Windows XP, Windows 2000

Power Requirements

Voltage range	100 – 240 V AC
Frequency	47 – 63 Hz
Interface	IEC inlet

SELECTING YOUR ART - RELAY TESTER

REFLEX 10 - Entry level Portable Relay Tester

Test Speed	2 to 3 seconds per device *
Accuracy	$\pm 0.8\%$
Architecture	Multiplexed
Number of models	Reflex 10 – 4 (4 pole changeover)
Max number of poles	4 pole changeover
Bi-polar CR measurement	Yes
Contact voltage drop capability	Yes
Relay Engineering Diagnostic Toolkit	No
Self-Test	Internal self-test
Calibration	External with Calibration Module

REFLEX 20 - Production Relay Tester

Test Speed	750 msec per device*
Accuracy	$\pm 0.5\% \pm 0.5 \text{ mR}$
Architecture	Parallel
Number of models	Reflex 4-20, Reflex 8-20
Max number of poles	8 pole changeover
Bi-polar CR measurement	Yes
Contact voltage drop capability	Yes
Relay Engineering Diagnostic Toolkit	Limited Tests
Self-Test	Internal self-test
Calibration	External with Calibration Module

RT290 - Ultra High Speed Production Line & Diagnostic Relay Tester

Test Speed	500 msec per device**
Accuracy	$\pm 0.2\% + 1 \text{ mR}$
Architecture	Parallel
Number of models	RT290
Max number of poles	8 pole changeover
Bi-polar CR measurement	Yes
Contact voltage drop capability	Yes
Relay Engineering Diagnostic Toolkit	Included – comprehensive
Self-Test	Internal self-test
Calibration	Internal with “removable” calibration standard

Note:

- * Typical time for 2 pole changeover device for REFLEX 10 or 20
- ** RT290 has a true parallel contact architecture and therefore test time is independent of number of poles