Product Datasheet - Technical Specifications

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Your contact

Technical and commercial sales, price information, quotations, demo/test equipment, consulting:

Tel.:   **+49 - (0)81 41 - 52 71-0**

FAX: **+49 - (0)81 41 - 52 71-129**

E-Mail: **sales@meilhaus.com**

www.meilhaus.com

U3900DAQ Switching System for Education Lab

DAQ switching system for DC electronics and RF signal

Overview

U3900DAQ Switching System for Education Lab consist of the DAQ970A data acquisition system (DAQ), this instrument enabling remote switching measurement point on a DUT (device under test), to provide a complete hands-on learning for engineering students to measure different point in a training board circuit.

As Web-enabled Solution, it offers engineering solution to enable remote laboratory with simple and flexible choices of GPIO switches and RF switch multiplexers.

Taking advantage of Keysight DAQ capabilities to link up student computers and the physical lab setup over the internet which can immediately be deployed.

Figure 1. Data acquisition system

Why data acquisition system?

- Industry grade instrument providing robust and reliable usage as remote learning infrastructure
- Allows students to learn data acquisition system including the PathWave Benchvue DAQ App
- Easy to expand further measurement as a modular instrument

KEYSIGHT TECHNOLOGIES

Introduction

U3900DAQ Switching System for Education Lab is a bundle consists of multiple components below:

- DAQ970A data acquisition system
- DAQ modules selection
- Accessories

DAQ970A data acquisition system

A 3-slot mainframes main system that allows LAN or USB for easy connectivity, supported by Benchvue DAQ apps for comprehensive remote switching usage case design. With built in DMM and high accuracy.

DAQ modules selection

Broad choice of DAQ modules to cater different training kit or board as remote DUT target.

- **DAQM901A 20 Channel Multiplexer**

  The Keysight DAQM901A module Data Acquisition System is the most versatile multiplexer for general purpose scanning. It combines dense, multi-function switching with 80 channel/second scan rates to address a broad spectrum of data acquisition applications. Two- and four-wire channels can be mixed on the same module. Two additional fused inputs (22 channels total) route up to 1A of current to the internal DMM, allowing ac and dc current measurements without the need for external shunt resistors.
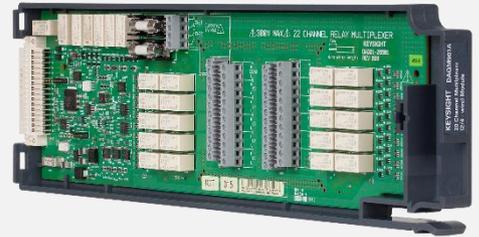
- **DAQM903A 20-Channel Actuator/General Purpose Switch**

  The Keysight DAQM903A is a general-purpose switch module Data Acquisition System. It has 20 independent single-pole, double-throw (SPDT) relays and is used to cycle power to products under test, control indicator and status lights, and to actuate external power relays and solenoids. Combine it with matrix and multiplexer modules to build custom switch systems. Its 300 V, 1 A contacts can handle up to 50 W, enough for many power-line switching applications.
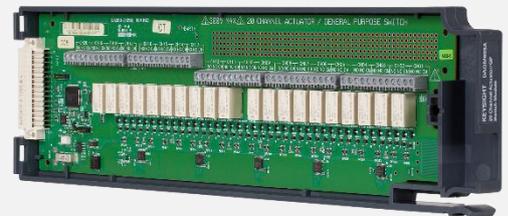
- **DAQM905A Dual 4-Channel RF Multiplexer 50 Ω**

  The Keysight DAQM905A RF multiplexer module Data Acquisition System offers broadband switching capabilities for high-frequency and pulsed signals. Use it to route test signals between your device under test and your signal generator, oscilloscope, spectrum analyzer, or other instrumentation. The RF multiplexers are arranged as two independent 1 x 4 multiplexers, each with a common shield and a switched center conductor. Connections can be made directly to SMB inputs with 2 GHz usable bandwidth, or to the BNC-to-SMB adapters provided with 1 GHz bandwidth. Multiple banks may be cascaded together for applications requiring even larger topologies-- create a stubless 16:1 multiplexer in a single frame.

Accessories

Keysight offers accessories to enable complete switching capabilities for both basic electronics lab and RF lab setup, accessories are connecting cables that connect between the DAQ modules and the target training kit. Accessories are part of the U3900DAQ bundle ordering.

- For DAQM901A or DAQM903A
  Including U3900DAQ-AC1. Alpha 78025 1.5 m, 5 twisted pairs, OD 5.26 mm, 24 AWG

- For DAQM905A
  Including U3900DAQ-AC2. SMB(F) - SMA (M). SMA (M) Straight Plug to SMB Right Angle Plug on Flexible Cable RG-316/U (1300 mm)

Recommended Switching System Configurations

Targeted device test unit or training kit	
For Electronics Lab	DAQ970A DAQM901A DAQM903A
For Radio Frequency Lab	DAQ970A DAQM905A

Test and Measurement Basics for DAQ

Test and Measurement Basics DAQ video series demonstrates how quick and easy it is to use Keysight DAQ. Ranging from the fundamentals of data acquisition to the more complex configurations of DAQ instruments, Keysight offers simple and easy solutions to your DAQ related questions.

Spending only about 2 minutes every week, see topics that reveal how to save hours of your time with software connections, hardware interfaces and so much more. Click away to find out the tips and tricks to make the most out of your measurements.

https://www.keysight.com/main/editorial.jspx?cc=US&lc=eng&ckey=2891034&id=2891034

Typical Usage for Remote Learning

Please refer to the user getting stated guide for more detail.

Ordering Information

Product number	Description
U3900DAQ	
DAQ970A DAQM901A DAQM903A	For electronics lab
DAQ970A DAQM905A	For RF lab

Accessories are included:

- Each unit of DAQM901A and DAQM903A in the U3900DAQ purchase comes with two cables
- Each unit DAQM905A in the U3900DAQ purchase comes with five RF cables