DS10X5 BASIC-programmable Digital I/O Controller

Tibbo TECHNOLOGY

Features

DS1005: 10/100BaseT Ethernet port
DS1015: Ethernet, GPRS*, WiFi*

IP68-compliant, -30C to +75C range

Free Tibbo BASIC application available

8 digital isolated inputs

6 high-power (10A/30VDC) relays

1 RS232/485 port (on a terminal block)

**optional*

About

With eight opto-isolated sensor inputs, six high-power relay outputs, and one simple RS232/485 port, the DS1005 and DS1015 are a great fit for industrial and building automation as well as security, safety, and access control applications.
The DS1005 offers the Ethernet interface only, while the DS1015 features Ethernet, as well as optional Wi-Fi and GPRS.
Unlike many "remote I/O" products, the capabilities of the DS1005 and DS1015 are not limited to just relaying I/O data to a central server. Programmability in Tibbo BASIC means you can create systems where intelligent decisions are taken in real-time by the device itself.
The DS1005 and DS1015 are especially suitable for access control applications: Four of the eight sensor inputs can be used to handle up to two card readers (two inputs per reader), which leaves four sensor inputs for connecting to a door switch, exit button, etc.
The devices come preloaded with an open-source application for remote control/monitoring of the device's inputs and relays through a web-browser or Tibbo's AggreGate device management system. This application can easily be customized for any functionality desired.

Specifications

- Network side — NB1000 (DS1005) or NB1010 (DS1015) board:
  - Based on the EM1000 module (DS1005) or compatible with it (DS1015);
  - Optional GA1000 Wi-Fi add-on (DS1015 only);
  - Optional Telit GC864 GPRS modem (DS1015 only);
  - 10/100BaseT, auto-MDIX Ethernet port;
  - 1024KB flash for firmware, application, and data storage;
  - 2KB EEPROM for data storage;
  - RTC with backup supercapacitor;
  - Built-in buzzer;
  - 11 status LEDs;
  - Power: 10-18V;
  - Firmware is upgradeable through the serial port or network;
- Interface side — IB1005 board:
  - 8 opto-isolated sensor inputs, four of which can be used to connect up to two Wiegand or clock/data readers;
  - 6 high-power (10A/30VDC) relays;
  - 1 RS232/485 port;
  - 8 status LEDs.
- Dimensions: 91x104x99mm (excluding secondary cover).
- Extruded-profile aluminum body.
- IP68 compliant (when used with secondary cover).

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Specifications (continued)

- Operating temperature -30 to +75 degrees C.
- CE- and FCC-certified.
- Included accessories:
  - Wi-Fi antenna (with DS1015G only)
  - GPRS antenna (with DS1015C and DS1015GC only)
  - DS1000 waterproof kit with secondary cover, cable glands, screws
  - DMK1000 DIN rail mounting kit
  - TB1005 test board
  - WAS-P0040 serial cable for firmware upgrades
- Optional Accessories:
  - 12V/1A adaptor: APR-P0008 (US), APR-P0009 (EU), APR-P0010 (UK)
  - WAS-1499 straight Ethernet cable (for this device can be used as crossover cable too)

Programming

Platform Objects

- Sock — socket comms (up to 16 UDP, TCP, and HTTP sessions).
- Net — controls Ethernet port.
- Ser — in charge of serial channels.
- Ssi — up to 4 serial synchronous interface channels (for SPI, I2C...).
- Io — handles I/O lines, ports, and interrupts.
- Rtc — keeps track of date and time.
- Fd — manages flash memory file system and direct sector access.
- Stor — provides access to the EEPROM.
- Romfile — facilitates access to resource files (fixed data).
- Pppoe — accesses the Internet over an ADSL modem.
- Ppp — accesses the Internet over a serial modem (GPRS, etc.).
- Pat — “plays” patterns on five status LED pairs.
- Beep — generates buzzer patterns.
- Button — monitors the setup button.
- Sys — in charge of general device functionality.

Function Groups:

String functions (27 in total!), date/time conversion functions (8), encryption/hash calculation functions (AES128, RC4, MD5, SHA-1), and more

Variable Types:

Byte, char, integer (word), short, dword, long, real, string, plus user-defined arrays and structures.

Tibbo Integrated Development Environment (TIDE)

All BASIC-programmable Tibbo devices are provided with free TIDE software.

Code in Comfort

Enjoy a modern code editor supporting syntax highlighting, context help, code hinting, and auto-completion.

Debug with Ease

Set breakpoints, watch variables, inspect the stack, step through your code... the built-in debugger in Tibbo IDE provides all the tools for fast and convenient debugging. Our debugger does not rely on any special hardware like an ICE machine or a JTAG board. Simply connect your Tibbo device to the Ethernet, select it in the IDE, and you are all set!

For more information on TIDE, see http://basic.tibbo.com/product/tide.html

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