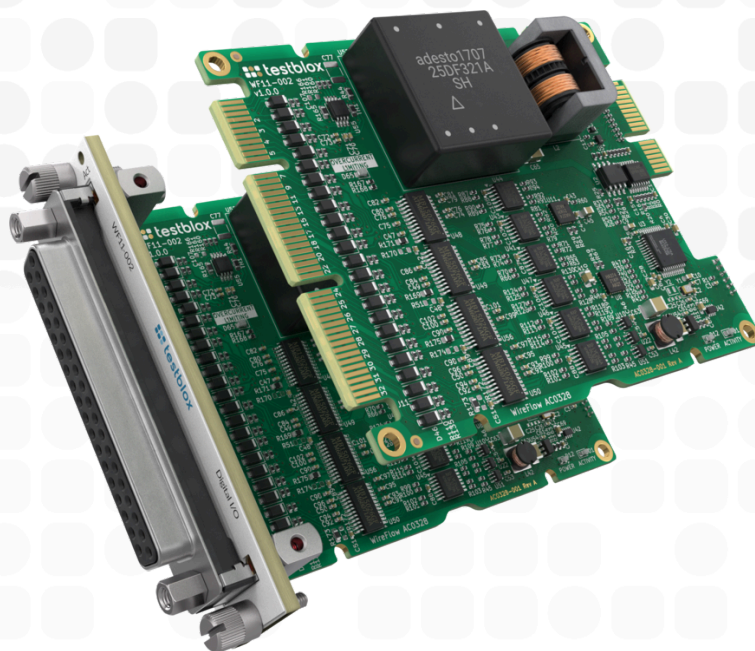




Testblox WF11-002

Digital I/O 24 V, 24 channels



The WF11-002 is a 24-channel 24 V digital I/O module in the Testblox family, for industrial control and status signals in production fixtures. It helps integrate sensors, actuators and DUT interfaces directly into a compact functional tester.

All 24 channels can be inputs, and 12 sourcing and 12 sinking outputs are interleaved among them. Six channels can also measure pulses: duty cycle, pulse width, frequency and pulse count. The outputs are protected against over-current, and the channels are isolated from the backplane ground.

Functionality

- 24 digital inputs, 24 V
- 12 sourcing and 12 sinking outputs
- 6 pulse input channels
- Over-current protected outputs
- Isolated from backplane ground



Specifications

Digital Inputs and Outputs	
Number of channels	24 ¹
General	
Logic Levels, V _{digital}	24 V
Absolute maximum input voltage	42 V (TBC)
Absolute minimum input voltage	-18 V (TBC)
Pull-down resistance (typical, fixed, all channels)	1 MΩ (TBC)
Input mode	
Low level input voltage	$< 0.3 \times V_{\text{digital}}$
High level input voltage	$> 0.7 \times V_{\text{digital}}$
Input current	$\pm 5 \mu\text{A}$ (TBC)
Sampling frequency (max, one channel)	10 kHz (TBC)
Sampling frequency (max, all channels)	5 kHz (TBC)
Pulse input mode	
Number of channels	6 ²
Capabilities	duty cycle, pulse width, frequency, pulse count
Sampling frequency (max, one channels)	$> 100 \text{ kHz}$ (TBC)
Sampling frequency (max, all channels)	TBD kHz
Output mode	
Source current (max per channel)	500 mA (TBC)
Source current (max total)	500 mA (TBC)
Sink current (max per channel)	$> 700 \text{ mA}$ (TBC)
Sink current (max total)	$> 2500 \text{ mA}$ (TBC)
Switching frequency (max, one channel)	5 kHz (TBC)
Switching frequency (max, all channels)	5 kHz (TBC)
Protection	Over-current protection

Power supply	
Supply voltage	24 VDC $\pm 5\%$
Rated power	22 W

Isolation	
Channel-to-earth (backplane ground)	
Isolation working voltage	250 V continuous
Isolation Barrier Bleeder Resistance	10 MΩ



Environmental	
Operating temperature	0°C to +55°C
Indoor / Outdoor	Indoor use only
Altitude	< 5000 m over sea level (TBC)

Mechanical	
Size (w x d x h)	90 x 69 x 15.3 mm
Weight	50 g

Calibration	
Factory calibrated	Yes
Field recalibration	Not required

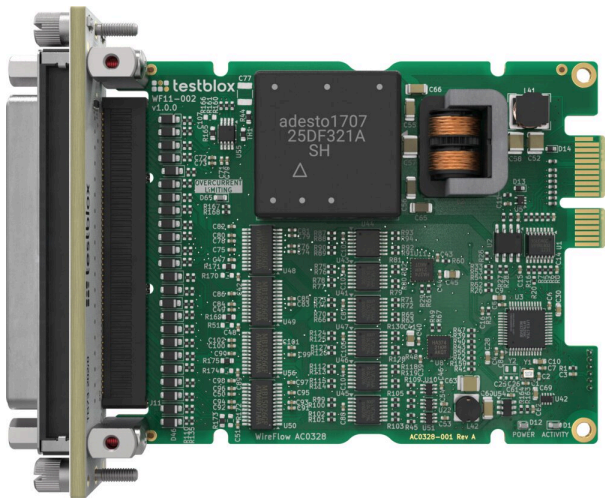
Compliance	
CE marked	
EMC compliant	
RoHS compliant	
REACH compliant	
WEEE compliant	

¹ All channels can be used as inputs. 12 source and 12 sink output channels are interleaved.

² Shared with DIO1-DIO6

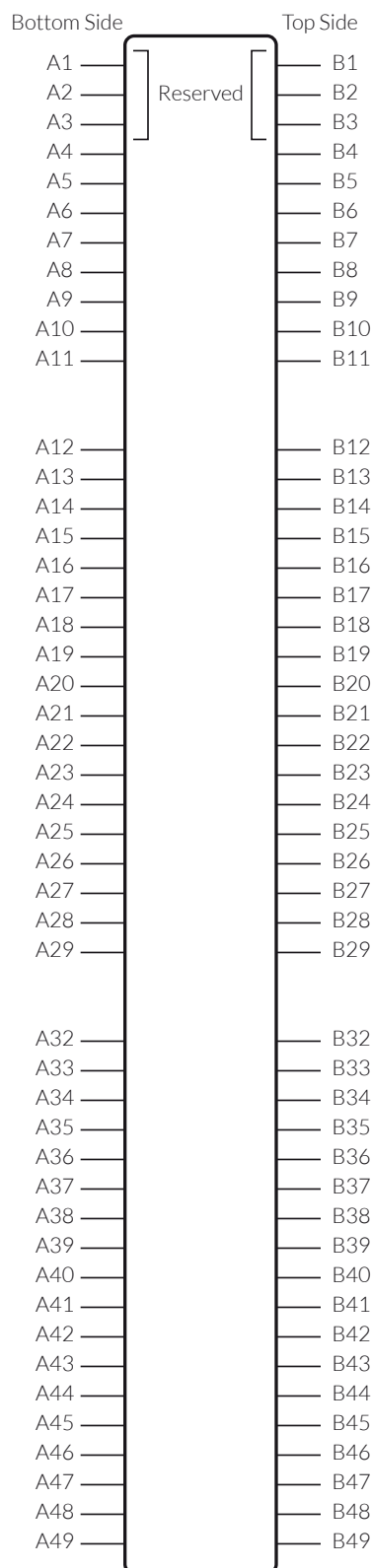
Product Order Codes

Testblox Digital I/O +24V	WF11-002
Single-Module USB-C Backplane	TB92-001
Three-Module Horizontal USB-C Backplane	TB94-003-001
Four-Module Vertical USB-C Backplane	TB94-004-001



Pinout - Front Edge Connector

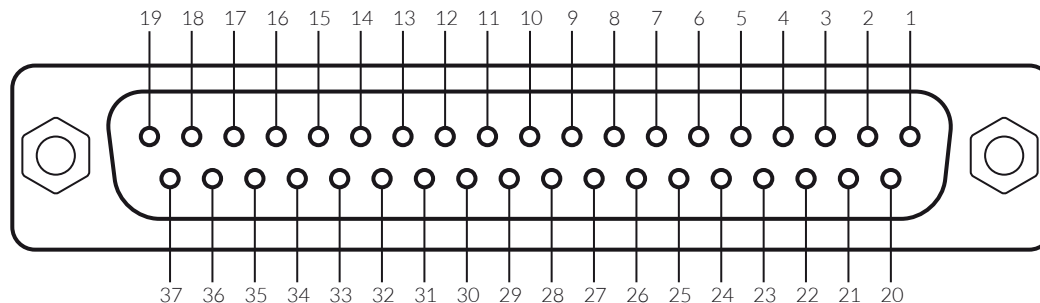
Pinout for Front Edge Connector - WF11-002	
Pin A1 - RESERVED	Pin B1 - RESERVED
Pin A2 - RESERVED	Pin B2 - RESERVED
Pin A3 - RESERVED	Pin B3 - RESERVED
Pin A4 - DI23	Pin B4 - DI22
Pin A5 - DI23	Pin B5 - DI22
Pin A6 - DI24	Pin B6 - DI21
Pin A7 - DI24	Pin B7 - DI21
Pin A8 - GND	Pin B8 - DI20
Pin A9 - GND	Pin B9 - DI20
Pin A10 - GND	Pin B10 - DI19
Pin A11 - GND	Pin B11 - DI19
Pin A12 - GND	Pin B12 - DI18
Pin A13 - GND	Pin B13 - DI18
Pin A14 - GND	Pin B14 - DI17
Pin A15 - GND	Pin B15 - DI17
Pin A16 - GND	Pin B16 - DIO16
Pin A17 - GND	Pin B17 - DIO16
Pin A18 - GND	Pin B18 - DIO15
Pin A19 - GND	Pin B19 - DIO15
Pin A20 - GND	Pin B20 - DIO14
Pin A21 - GND	Pin B21 - DIO14
Pin A22 - GND	Pin B22 - DIO13
Pin A23 - GND	Pin B23 - DIO13
Pin A24 - GND	Pin B24 - DIO12
Pin A25 - GND	Pin B25 - DIO12
Pin A26 - GND	Pin B26 - DIO11
Pin A27 - GND	Pin B27 - DIO11
Pin A28 - GND	Pin B28 - DIO10
Pin A29 - GND	Pin B29 - DIO10
Pin A32 - GND	Pin B32 - DIO9
Pin A33 - GND	Pin B33 - DIO9
Pin A34 - GND	Pin B34 - DIO8
Pin A35 - GND	Pin B35 - DIO8
Pin A36 - NC	Pin B36 - DIO7
Pin A37 - NC	Pin B37 - DIO7
Pin A38 - NC	Pin B38 - DIO6/P6
Pin A39 - NC	Pin B39 - DIO6/P6
Pin A40 - NC	Pin B40 - DIO5/P5
Pin A41 - NC	Pin B41 - DIO5/P5
Pin A42 - NC	Pin B42 - DIO4/P4
Pin A43 - NC	Pin B43 - DIO4/P4
Pin A44 - NC	Pin B44 - DIO3/P3
Pin A45 - NC	Pin B45 - DIO3/P3
Pin A46 - NC	Pin B46 - DIO2/P2
Pin A47 - NC	Pin B47 - DIO2/P2
Pin A48 - NC	Pin B48 - DIO1/P1
Pin A49 - NC	Pin B49 - DIO1/P1



Pinout Diagram for Front Edge Connector

Pinout - Using 37-pin D-type Interface Board

Pinout for 37-pin D-type Interface Connector - TB73-202	
Pin 1 - DIO1/P1	Pin 20 - GND
Pin 2 - DIO2/P2	Pin 21 - GND
Pin 3 - DIO3/P3	Pin 22 - GND
Pin 4 - DIO4/P4	Pin 23 - GND
Pin 5 - DIO5/P5	Pin 24 - GND
Pin 6 - DIO6/P6	Pin 25 - GND
Pin 7 - DIO7	Pin 26 - GND
Pin 8 - DIO8	Pin 27 - GND
Pin 9 - DIO9	Pin 28 - GND
Pin 10 - DIO10	Pin 29 - GND
Pin 11 - DIO11	Pin 30 - GND
Pin 12 - DIO12	Pin 31 - GND
Pin 13 - DIO13	Pin 32 - GND
Pin 14 - DIO14	Pin 33 - DI24
Pin 15 - DIO15	Pin 34 - DI23
Pin 16 - DIO16	Pin 35 - DI22
Pin 17 - DI17	Pin 36 - DI21
Pin 18 - DI18	Pin 37 - DI20
Pin 19 - DI19	

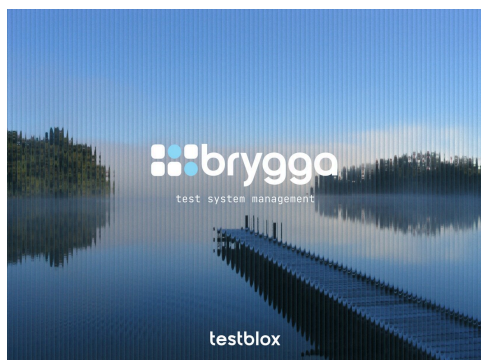


**37-pin Female D-type Connector
as viewed from front of module**



About Testblox

Testblox is an integrated, modular instrumentation platform designed specifically for automated functional test. Its playing-card-sized modules can be embedded inside standard test fixtures, bringing measurement, switching, power, and I/O closer to the device under test. This reduces rack space, cabling, and overall system complexity while providing the reliability and support expected in production ATE.



The Testblox portfolio includes analog and digital I/O, digital multimeters, power supplies, DUT communication, and a broad selection of switching modules, including multiplexers, matrices and general-purpose relays. Electrically isolated modules help prevent ground loops and simplify integration. Engineers can control Testblox systems using Brygga Test Management Software, Python, LabVIEW or C#, with a consistent software model across the platform.

Modules can be used individually with a single-module backplane or combined together with three- or four-module backplanes to create a test system tailored to the application. DUT signals are available directly from each module's front-edge connector or through standard D-sub cabling.

Testblox is a multi-vendor platform developed through complementary expertise. Testblox AB provides the core architecture, backplanes, system software and selected I/O; Wireflow contributes multifunction I/O and power-supply technology; and Pickering Interfaces contributes switching and measurement expertise. Together, they deliver specialist instrumentation through a common form factor, electrical interface and software workflow.

Designed and manufactured in Europe, Testblox modules are backed by a three-year warranty and a commitment to more than 20 years of hardware availability — providing a compact, cost-effective platform built for long-term automated test.

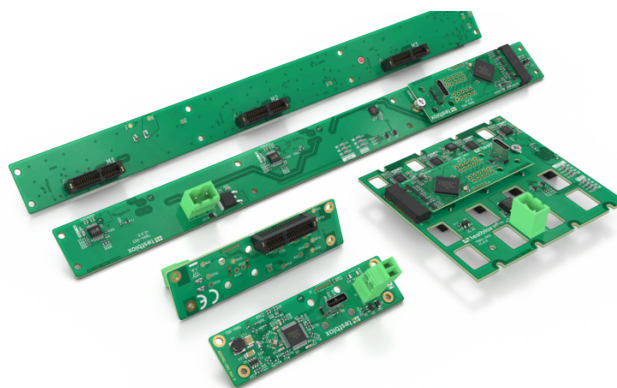
For more information, visit: www.testblox.com





Testblox Backplanes

Every Testblox system requires a backplane. Choose a one-, three- or four-module backplane to bring compact measurement, switching, power and I/O into your test fixture, with a USB-C connection to the host computer.



Backplane	Part Number	Typical Use
Single-Module USB-C Backplane	TB92-001	A single instrument in a compact fixture
Three-Module Horizontal USB-C Backplane	TB94-003-001	A low-profile arrangement of instruments
Four-Module Vertical USB-C Backplane	TB94-004-001	More instruments within a small footprint

USB communication and system power

Control the system using USB Full Speed at 12 Mbit/s through a USB Type-C connector. All backplanes use an external 24 V supply through a pluggable screw terminal. Check the selected backplane datasheet for power requirements; the system is not powered by the USB-C connection.

Mounting inside the fixture

Testblox mounting accessories support and retain modules while allowing individual modules to be removed for maintenance. Choose the mounting accessory to suit the backplane and the fixture connection method. You are also free to print your own with the files available on testblox.com. DUT signals connect through each module's front-edge connector or an available D-sub front panel.

Accessory	Application
TB82-003	Module guides for the Three-Module Horizontal Backplane
TB82-001	Module guides for one module in the Four-Module Vertical Backplane
TB82-002	Module guides for four modules in the Four-Module Vertical Backplane



Before ordering, check module count, fixture clearance, DUT connectors, power budget and required mounting accessories. Refer to the individual module specifications for module-to-backplane isolation ratings.

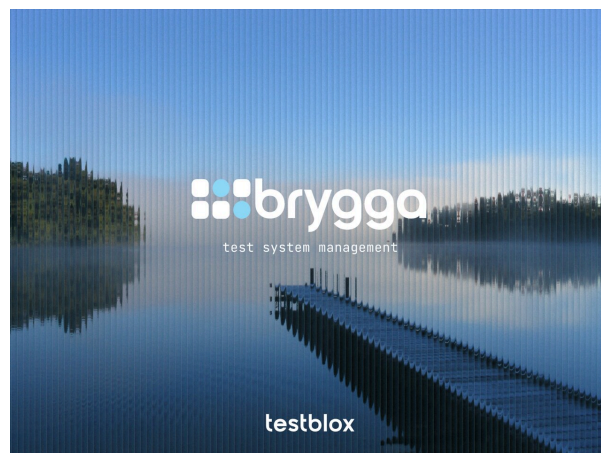


Testblox Software

Use Brygga Test Management Software to discover, configure and interactively test your Testblox system, then use the APIs and module simulation to develop your automated test application.

Brygga system setup and interactive control

Bring up hardware without writing code. Brygga Test Management Software combines system discovery, configuration, module test panels and firmware management in one test system management interface, helping you check connections and exercise instruments before automating a test.



Task	What you can do with Brygga
Discover and locate	Automatically discover connected backplanes and modules. Activate module front panel LEDs to match software entries to physical hardware.
View the system	See backplanes, installed modules, slot positions and connection status together.
Name and configure	Assign hardware and channel aliases shared with the API. Set module ranges, channels, limits and start-up states where supported.
Measure and control	Use module-specific test panels to take measurements, control outputs and operate switches without writing software.
Update firmware	Identify available firmware updates and install them on selected systems or modules.

APIs for automated test development

Integrate Testblox into your own test software using drivers, APIs and example programs. Windows and Linux support, together with Python, NI LabVIEW and C# integration, lets you use familiar development tools. Hardware and channel aliases assigned in Brygga carry through to the API, helping you use recognizable names in your test code. Refer to the software documentation for supported operating-system versions and module-specific functionality.

Module simulation

Configure simulated modules offline and develop your application before the hardware arrives. Simulation is intended to provide representative signal data, so you can exercise configuration, API calls and application logic while fixture development continues.

Software downloads and documentation: testblox.com/software



Testblox Support & Services

Testblox combines a three-year warranty, long-term hardware availability and technical support to help you build and maintain production test systems throughout their working life.

Three year warranty and long term availability

Testblox modules are backed by a three-year warranty and a commitment to more than 20 years of hardware availability. This helps protect your test system investment and reduces the disruption associated with premature product obsolescence.

Contact Testblox to discuss lifecycle requirements, product availability and support for your application. Refer to the published warranty terms for coverage and the process for arranging service.



Technical help from setup to troubleshooting

Use the Testblox technical support forums to ask questions, share solutions and discuss hardware, software and system integration. For an issue that needs direct assistance, or includes confidential application information, contact the support team by email.

Contact or resource	Where to go
Technical support forums	https://forum.testblox.com/
Technical support and service enquiries	support@testblox.com
Product information	https://testblox.com/

Help us resolve your issue

Include the module and backplane order codes, serial numbers, software and firmware versions, host operating system, and a short description of the problem. Attach relevant error messages, logs and a simple example that reproduces the issue. Keep confidential data out of public forum posts.

