RoboThespian™ Model RT3 Product Brief

What's New in Model RT3

- RoboThespian™ has had a complete make over below the waist, Model RT3 is completely self supporting, with a new torso, pelvis and leg design.
- The control system has been completely integrated into RoboThespian™ 's body, the separate control console is no longer necessary.
- Even better, his 'umbilical', the bundle of air tubes and wires tying him to his control console has gone too.
- We've designed customised air valves, shrunk his control computer and reinvented his audio system.
- He's a mover and a shaker, he bends, sways and turns his torso, with three additional servo axis.
- It's not just hardware; we've been busy on the software too:
- We've integrated a 'state of the art' text to speech engine, he can read your scripts, say what you type, and access written content, not just in English, in Spanish, German, French, Dutch … fifteen languages including Mandarin Chinese.
- All of the software you can't see or hear has been rewritten too, making the RoboThespian™ platform more stable, adaptable and fault tolerant.
- We've added a diagnostic system and improved remote management, so its easier to find and fix problems when they arise and easier to get support when you need it.

What Can Your Visitors Do With RoboThespian™

RoboThespian™ has been designed from the ground up to be flexible and adaptable, but you don't have to add or change anything until you are ready – switch on and it's ready to go the following touch screen pages are included as standard:

Deliver your content with the 'Library' section. RoboThespian™ delivers set piece performances at a touch of the screen, expand, edit and customise the 'library' page to suit your needs.

Exercise control with the 'Live' section, change his mood, make him laugh, cry and dance.

Create a 2 minute RoboThespian™ performance with the **'Compose' section**

The list of RoboThespian™ user pages is growing continually, as new interactive scenarios, games and content become available they can be added to compatible model RoboThespian™ s free of charge.

Upcoming interactive screens include:

Poetry Corner : Like the fridge magnet game, drag words to make poems, even add colours to your words to show emotions – play with up to four players for amusing results.

Wiki Bot: ask RoboThespian™ a question, he finds the answers and tells you all about it.

The Turing Test: Is RoboThespian™ really intelligent?, or are you talking to another person – can you tell? Requires additional console or additional RoboThespian™ .

Other Ways To Control RoboThespian™

RoboThespian™ is a web connected device, in fact you can visit his control interface, just like any other website, (if you have the password!).

You can see what RoboThespian™ sees, make him move and tell him what to say from any where in the world with a net connection – the ultimate tele-presence.

This works in just about any web browser that has an Adobe Flash player plugin. On PC's running Linux or Windows, and on Mac's.

How You Can Customise RoboThespian™

- You don't have to be a computer programmer or robotics propeller head to create content for RoboThespian™ , its as simple as writing the words you want him to say.

- If you want to get in deeper, you can create your own detailed robotic performance with our virtual animated RoboThespian™ – make the on screen robot move and RoboThespian™ will follow. Virtual RoboThespian™ animation software is built around the Blender 3D animation package and is included free of charge.

- If you are really serious we can help you integrate experimental software, or use RoboThespian™ for academic research. The system is net connected and very controllable.

RoboThespian™ Model RT3 Technical Specification

Hardware – On Robot

- 10 fully proportional air muscle powered axis with encoder feedback and closed loop control, for arm movement.
- 2 proportional air cylinder axis for leg control.
- 6 servo motor axis with encoder feed back and closed loop control, for torso and head movement.
- 1 ultra high speed servo axis for mouth movement.
- 8 miniature air cylinder axis for finger moment.
- integrated single board computer with 1.6 GHz Atom Processor, 32Gb SSD for motion storage and control software.
- 2 800mhz Arm 9 processors for eye screen and RGB face colour control
- Head mounted camera – with streaming images for remote view.
- Integrated 20W high quality audio amp – balanced line out option available.
- 5 multicore embedded processors for motion and air valve control.
- All position encoders are non contacting absolute magnetic hall effect devices with 12bit resolution, better than 0.1 degrees resolution.
- Welded chassis in 6028 grade aluminium.
- Vacuum formed PET body shell.

Hardware – Off Robot

- Base with integral 24v power supply and 4 port wireless router.
- Interface PC and 19” LCD touchscreen housed in floor standing console
- Light weight minimal console options available – please ask.

Software

- Back end software 'IOServe' is custom written in C++, it controls and integrates every aspect of RoboThespian™ configuration and performance handling multiple hardware devices and connection protocols simultaneously in real time. Based on a modular 'plugin' structure it is extensible and reconfigurable.
- The integrated TTS engine generates emotive speech in real time.
- 'EyeToons' is a custom written graphical application for RoboThespian™'s eyes, it can use uploaded .jpg .gif .png image file formats which are composited on the fly to create emotional and controllable eye animations.
- Audio Motion another custom written real time module that generates 'lip sync'd' mouth movement, and can also be used to control audio related gesturing
- All software is preloaded and configured, a recovery disc or USB drive is provided in case of disc failure.
- The touchscreen user interface has a modular and configurable structure, and is written in Adobe Flash AS3. Users can configure pages, alter button text and change languages.
- Additional customised touchscreen pages can be added to customer specification.
- Blender animation software and virtual robot animation files provided on separate disc. PC / Mac / linux compatible.

Physical Dimensions

RoboThespian™

Weight	33kgs (72 lbs)
Height:	1750mm (5'9”)
Height on Base:	1900mm (6'4”)
Width:	410mm (16”) - shoulders

RoboThespian™ Base:

Weight:	9.7kgs (21 lbs)
Height:	150mm (6”)
Diameter:	600mm (24”)

Touch screen Console:

Weight:	36kgs (79 lbs)
Height:	1006mm (40”)
Width:	472mm (18.5”)
Depth:	420mm (16.5”)

Warranty

12 month (one year) warranty for the RoboThespian™ exhibits starting as of installation date. The warranty relates to defective parts or design faults. EAL will supply replacements in exchange for defective parts or assemblies free of charge for the warranty period.

Country of Origin: United Kingdom

Harmonized Commodity Description Coding System (HS) Classification Code: 9023 HTSUS
The RoboThespian™ exhibit is classifiable under heading 9023, HTSUS. It is specifically provided for in subheading 9023.00.0000, which covers, "Instruments, apparatus and models, designed for demonstrational purposes (for example, in educational or exhibitions) .. .".

Installation

Essential Requirements

Each RoboThespian™ unit is supplied with all software and hardware necessary for operation, **excluding** the following which **must be supplied by host venue**. Installation cannot commence until these items are in place at the installation location of each RoboThespian™ exhibit.

a) **Electrical supply** 100 – 240 VAC @ 50/60 Hz 10 Amps

b) **Compressed air supply** – filtered dry air at 7 Bar (105 PSI) maximum consumption per RoboThespian™ unit is 2 CFM @ 7 Bar

c) **Cat 5 LAN for Internet connection** - this is essential for remote maintenance and diagnostics.

d) **Stage area** for RoboThespian™ exhibits with hand rail or barrier to prevent contact with visitors. RoboThespian™ must not be operated without this barrier in place. A reference drawing with recommended stage area dimensions is available upon request.

For more information on RoboThespian™ RT3 please contact:

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