



## Zürich FLEXTY Full-Size Mock-Up

In March 2017 Verkehrsbetriebe Zürich (VBZ) awarded Bombardier a contract for 70 FLEXTY trams with an option for 70 more (see R 2/17, p. 74). To familiarise the travelling public in Zürich with what the future holds for them, and to obtain feedback, VBZ decided to create a full-size mock-up of two sections in its main works at Altstetten, shown in these photos, taken on 23 April 2018.

The mock-up is flexible, in the sense that the exterior design can be modified, and the interior can be fitted out in different ways. This is because the intention is to evaluate which design is most acceptable to prospective trav-

ellers, based on feedback from visits. The design, developed jointly by Bombardier, VBZ and the design agency milani design & consulting of Thalwil involves a predominance of natural materials and shades, yet is also very simple and practical.

One example of practicality is the vertical LED strips on the entrance doors. These are green, when it is possible to board or alight, but turn red when the tram is about to depart, or has not yet come to a stop. The door status is also repeated on a LED ring on the front and rear ends of the tram. All lighted advisory and warning lights are designed to be visible by people with poor eyesight. For instance, the LED screens showing route number use large cha-



racters, which can be read from a considerable distance.

Although the design details have yet to be determined, the technical specifications of VBZ's FLEXTY trams are known already. They will be seven-section, uni-directional vehicles, 42,860 mm long, 2,400 mm wide, 3,600 mm high, with a general floor height of 375 mm and entrance door thresholds 350 mm above rail top. They will be powered by eight 81 kW traction motors, and have a Bo'2'Bo'Bo' axle arrangement, the bogies being under the first, third, fifth and seventh sections.

The second, fourth and sixth sections, suspended between the others, will each have two double-leaf 1,300 mm

wide entrance doors. In the first and seventh sections, at the outer ends, there will be another single leaf, 800 mm wide entrance doors. Deliveries of the new trams are to start at the end of 2019 and it is planned to put them into commercial service starting the following year.

Starting in May 2018 one of VBZ's Cobra trams was fitted with ODAS (Obstacle Detection Assistance System) for test runs. This is the first time that „driver assistant“ has been tested on a Swiss tramway network. It assists the driver in making predictive decisions, and detects possible collision situations in advance.

Bohuslav Kotál

Photos: Jürg D. Lüthard



## Wiener Linien First FLEXTY Tram On Test

In late 2017 the first of the 119 Wiener Linien's new FLEXTY trams, ordered in June 2015, was moved from Bombardier's Donaustadt factory onto the urban tramway network for testing. It went to the WL's central Simmering depot where a number of tests were made within the complex. On 9 March it was presented to representatives from several companies which are involved in the project. This photo was taken at the Westbahnhof loop while the tram numbered 301 was on its way back to Simmering, making a rare daytime appearance on the city's network.

In March FLEXTY 301 ventured out for the first runs on the capital's tramway network. Tests involve runs without

passengers and test runs carrying iron weights simulating a passenger load. Driver and depot staff training is also taking place during these test.

The second of the trams, 302, which had been completed very early in 2018, was moved by low-loader on 7 March to the RTA climatic chamber for testing. The tram was subjected to testing at temperatures ranging from -25 °C to +40 °C, the possible extremes that it might meet while in service in Wien. One of the test programmes involved the HVAC system. This is designed so that when it is running at full power it can change the air in the interior of the tram 16 times each hour. Moreover it constantly measures on-board CO<sub>2</sub> levels. When low values are recorded it assumes that the tram is only occupied by a few passengers and reduces its operational rate to a third of

its full power rate. In May 302 joined 301 on on-street testing.

While the HVAC system is innovative, so are several other on-board features. These include the new ticket vending machines, which accept both coins and debit/credit cards. Passengers use large touch-screen displays, and have a choice of all principal European languages, including Hungarian, Slovenian, Slovakian and Czech. One special seat is also provided for children. While the standard seat base height is between 450 and 480 mm above floor, this seat had been adjusted so that its base is only 400 mm above floor.

26 May 2018 was U-Bahn-Tag in Wien, to celebrate the 40th anniversary of the inauguration of the first modern metro line in the capital. 302 was exhibited in the yard of the Verkehrsmuseum at Ludwig-Koessler-Platz as part of the celebrations, enabling the general public to examine it, one of the various opportunities they will probably get to see it prior to it entering service following testing and being granted authorisation, probably towards the end of 2018.

Jan Dvořák

Photo: Ernst Lassbacher

## Powering Devices Using The Contact Wire

Since May 2018 MTM Power has offered in its range Series HVC DC/DC 250 W converters for rail uses. These devices are available with an input range of 420 to 1,100 V DC (375 to 1,125 VDC; t ≤ 2 s), an isolation of up to 8 kV AC and a standard output voltage of 24 V DC. With these high voltage converters it is possible to power electronic equipment from an overhead contact wire energised at 600 V or 750 V.

The DC/DC converters can be used for powering point motors, signal aspect lights and rail network electronic monitoring. One specific feature of the HVC series is that the converters can be used to start-up trams or trolleybuses whose batteries have been completely discharged - that eliminates the need for towing. The high efficiency of over 88 % and the dimensions of 330 x 170 x 87 mm allow operation without the need for forced ventilation. Moreover the converters work within an ambient temperature range of -40 to +85 °C, and are designed in compliance with EN 50 155.



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