



Toilet module control solution

In the year 2018 Ingeteam started supplying more than 200 control systems for toilet modules to a spanish toilet module manufacturer. These systems were installed in Alstom USA High Speed Trains.

The INGESYS IC2 control unit not only is in charge of control different elements that compose a toilet (door control, water tanks, taps, hand dryer,....), also supplies a Web Application for maintenance functionalities and performs the communications with the VCU by CIP protocol. The CIP protocol and Web Application comply with specifications and requirements to be integrated on Alstom's communication net.

In February of 2018, Ingeteam passed the certification tests of the CIP protocol (Common Industrial Protocol) integrated in its INGESYS.

Ingeteam Web Server

ALSTOM	TOI01	<i>Ingeteam</i>
<p>Admin tools:</p> <p>Parameters</p> <p>Software update</p> <p>Maintenance tools:</p> <p>Version</p> <p>Status Info</p> <p>Tests on demand</p> <p>History</p> <p>Operating data</p> <p>Device maint.</p> <p>Logout</p>	<p>DEVICE MAINTENANCE</p> <p>Toilet module</p>	
	<p>Passenger facilities</p> <p>SOS buttons status</p> <p>Toilet temperature management</p> <p>Air pressure 8.5 bar</p> <p>Toilet temperature 8.5 °C</p> <p>Water pressure 8.5 bar</p> <p>Parameter adjustment</p> <p>Tank status</p>	<p>Water supply</p> <p>Water pressure sensor 8.50 bar</p> <p><input type="radio"/> Water pump relay</p> <p><input type="radio"/> Intermediate tank level sensor</p> <p><input type="radio"/> Water heater enabled</p> <p><input type="radio"/> Drainage EV</p> <p><input type="radio"/> Ejector drainage EV</p> <p>Toilet module healthy</p> <p>Wear of devices</p> <p>WC System</p>

RAILWAY TOILET MODULE CONTROLLERS

Scope of Supply

INGESYS IC2

HARDWARE

24Vdc Power Supply CPU
 1xCAN Open
 24x Digital Inputs
 28x Digital Outputs
 2xNTC
 6x Analog Inputs (V/I)
 1 Door Control Module

SOFTWARE

CIP communication Protocol, Alstom Profile

SW application according to Toilet manufacturer's specification

STANDARDS

Immunity and Emission

EN 50121-3-2:2016

Temperature Range

EN 50155:2017 [OT4 (-40°C +70°C)]

Vibrations

EN 50155:2017 [Body Mounted, Class B] / IEC 61373:2010

Fire protection

EN 45545-2



INGESYS IC2 Toilet Module Controller

The technical data in this catalogue is subject to change without prior notice. CS49IPTT01A0925