



Innovative design delivers reliable performance and minimizes maintenance

DTN's Revolver Transmissometer, developed and built by DTN, represents a design that eliminates major detrimental attributes generally related to transmissometers while introducing innovative features — all to support reliable performance, reduced maintenance, and improved overall cost of ownership.

Patented contamination control system

Our unique, online automatic contamination detector continuously monitors all sections of glass on the protective, rotating outside window; compensates for contamination as needed; and automatically rotates a new piece of clean glass into place. An alarm is raised when the rotating disk needs maintenance cleaning.

Scalable system targets your needs

You can integrate the DTN Revolver with our easy-to-use MetConsole software, as a stand-alone system or fully integrated into the DTN AWOS.

Optimized return on investment

Our innovative design means your investment in the DTN Revolver Transmissometer will yield longterm, high-accuracy performance, require a fraction of the maintenance required of traditional systems, allow system extension as needed, and minimize your total cost of ownership.

Overview

- Visibility measurement and automatic determination of RVR.
- Easy installation, alignment, and calibration. The improved automatic sensor alignment system eliminates tedious installation; high-accuracy alignment of transmitter and sensors is based on a computer-controlled scan at the push of a button.
- Reduced maintenance. Innovative design provides direct window contamination measurement and control reducing cleaning time and cost.
- Standard features: auto-diagnostic, data validation, Built-in Test Equipment (BITE), remote configuration and maintenance via web interface.
- Robust design. Self-standing full protective head and wind shield; heaters fitted in for reliable operation in cold climates.
- Compliant design and operation for accuracy. RVR calculated from extinction, background luminance and runway lights settings, using official ICAO/WMO algorithms (accuracy meets or exceeds ICAO Annex three recommendations for RVR ranging from CAT I to CAT IIIB,C); CE standards compliant.
- Multiple communication options. Fiber optic, FSK modem, radio modem, RS232/422 serial output, wireless, and Ethernet.
- Proven performance. Several successful installations throughout Europe and Asia.
- Listed by the Australian Bureau of Meteorology in MA8i as one of the 2 only instruments suitable for the assessment of RVR.

Technical Data

Transmissometer Technical Data

MOR range	10 ... 10,000m
Transmittance range	0 ... 100%
Measurement resolution	0.005%
Reporting solution	1 m
Averaging period	1 min (configurable)
Output rate	5 sec (configurable)
Lamp transmitter source	Xenon flash lamp
Lamp life	More than 200,000 hours
Measurement principle	Pulsed Xenon transmitters and receivers measure transmissivity of the atmosphere
Receiver module	Human eye adapted photo diode
Base line	10–100m, single and double
RVR accuracy	According to ICAO and WMO specifications for RVR ($\pm 10\text{m}$ up to 400m, $\pm 25\text{m}$ between 400m and 800m, $\pm 10\%$ above 800 m)
Front Revolver disk	270mm diameter toughened glass
Automatic calibration and	automatic alignment
Communication options	Ethernet (embedded web server) Serial (RS232/485/422) SHDSL/Fiber/Radio/FSK modem

Background Luminance Sensor Technical Data (Model 650)

Measuring range	0 ... 40,000 cd/m ²
Accuracy	$\pm 7\%$
Viewing angle	10°
Environmental conditions	Temperature: $-40 \dots +60^\circ\text{C}$ Humidity: 0 ... 100% RH Protection: IP66

Electrical Data

Power supply	115/130/230/240 VAC 50 ... 60Hz $\pm 10\%$
Power consumption	500W with heaters, per unit

Environmental Conditions

Ambient temperature range	$-40 \dots +60^\circ\text{C}$
Relative humidity range	0 ... 100% RH
Wind speed range	0 ... 75 m/s

Constructive Features

Standard height	2.5m
Optical head	Aluminum and fiberglass
Centre pole	Aluminum
Transmitter electronics enclosure	Stainless steel and fiberglass
Protection	IP66
Frangibility	Fuse bolts according ICAO Doc 9157. Part 6, Paragraph 4.5.2
Colour	White

Optional

Double baseline receiver
Background luminance sensor model 650
Obstruction Lights for TX and RX
Battery Backup

Compliances

CE Certified	ENV 50204:1995
EN 61000-3-2:1995	EN 61000-3-3:2003
EN 61000-4-2:1995	EN 61000-4-3:1995
EN 61000-4-4:1995	EN 61000-4-5:1995
EN 61000-4-6:1996	EN 61000-4-11:1994
AS/NZS CISPR11:2204 Group 1, Class A	