ALFA-INT s.r.o.
Výstaviště 1

647 00 BRNO
CZECH REPUBLIC

TEL.: +420 – 776 704450
FAX: +420 – 577 341787

E-mail: info@alfa-int.cz
http://www.alfa-int.cz

Weather Station Sirius-NBC

Features

- **Robust and reliable integrated weather station for wind speed, wind direction, air temperature, barometric pressure, relative humidity, with no moving parts technology**
- **Incorporates an innovative wind velocity and direction sensor that detects Thermal Aura Variation (TAV) caused by the wind flowing past a heated cylinder**
- **Compact and completely self-contained meteorological instrument. All components are enclosed in a sealed, water-proof cylinder**
- **Maintenance-free measuring element with permanent air density compensation**
- **Operation under severe climatologically conditions and wind speed up to 60m/s**
- **Simple installation on a 50 mm standard pipe and central plug connector or customized mechanical extension for fixing on a vehicle**
- **Operational condition from −40 °C to +70 °C**
- **Rugged and corrosion-free housing with integrated plug connector**
- **Serial interface RS485**
- **MTBF of 10 years**
- **Automatic cyclic self-testing and reporting**

Applications

- **The Sirius-NBC is especially designed for NBC applications. The system provides information concerning the effects due to the nuclear, biological and chemical combat substances and makes it possible to define their propagations. NBC vehicles, main battle tanks, mobile weather stations**

Standards

Standard of construction:	**VDE 100**
Low voltage guideline:	**73/23 EWG and VDE 100**
EMV:	**DIN EN 50081-1**
	VG 95373
	EC 630004-3,-6
ESD / Burst:	**EC 630004-2,-4**
Vibration:	**BV 0440, diagram 1,8,9**
Shock resistance:	**BV 0430, diagram 3**
Salt spray test:	**MIL STD 810 D**
Class protection:	**IP 67**
Message format:	**HEX or NMEA 0183**
Interface:	**RS485 (EIA standard)**

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Technical Data & Dimensions

General

Operation temperature range	-40 °C to +70 °C
Storage temperature	-50 °C to +90 °C
Interface	RS485
Power supply	12 to 30 VDC / 15 Watt
Isolation voltage	500 VDC

Measurement Specifications

Wind speed

Range	0...60 m/s
Accuracy (RMS)	0.5 m/s ±5 % of actual wind
Resolution	0.1 m/s

Wind Direction

Azimuth	0...360° (no electrical gap)
Accuracy (RMS)	± 5°
Resolution	1°

Air Temperature

Range	-40...70 °C
Accuracy (RMS)	±1°C at wind speed ≥ 2m/s
Resolution	0.1°C

Barometric Pressure

Range	600...1100 mbar
Accuracy (RMS)	± 1.5mbar at 20°C ±3 mbar, -40°C to +70°C
Resolution	0.1 mbar

Relative Humidity

Range	0...100 %
Accuracy (RMS)	± 3 % at 20...80 % ±4 % for <20 % and >80 %
Resolution	0.1 %

Option

Powder Temperature Input

Range	0-10 VDC
Resolution	2.44 mV

Digital Counter

Range	16-bit counter

Mechanical extension for fixing on the vehicle

This mechanical extension is adapted to the customer (see next column for an example)

Accessory (not included)

Mating connector for cable

Version

Sirius-NBC

Robust and reliable integrated weather station for wind speed, wind direction, air temperature, barometric pressure and relative humidity, with serial interface RS485; for installation on 50 mm standard pipe

Sirius-NBC/Largo

Robust and reliable integrated weather station for wind speed, wind direction, air temperature, barometric pressure and relative humidity, with serial interface RS485; with mechanical extension for fixing on the vehicle (contact us for more information)

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WEATHER STATION
SIRIUS-NBC

SIRIUS-NBC

IČO: 63489783
VAT: CZ63489074

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1. GENERAL INFORMATION

SCOPE

This technical document contains the performance specifications and the installation procedures of the SIRIUS-NBC/L series weather station. This series measures and reports 6 weather parameters

INTRODUCTION

The SIRIUS-NBC/L weather station is a very rugged and reliable, all solid-state automatic instrument with no moving parts. The SIRIUS-NBC/L reports wind speed and direction, air temperature, barometric pressure, relative humidity and soil temperature.

The SIRIUS-NBC/L is a compact and completely self-contained meteorological instrument. All components are enclosed in a sealed, water-proof cylinder. The package contains a microprocessor for determining weather parameters, performing self-diagnostics tests, and transmitting data and status information. The weather station is an intelligent device capable of transmitting data over an RS-485 serial digital interface.

INTENDED USE

The SIRIUS-NBC/L is a fully automated meteorological system that mounts on a vehicle or mast and provides constantly updated measurements of weather conditions over its serial digital output. The station is designed to operate in the severest of weather conditions. It is ideal for the harsh environments found in alpine climates, or in mobile applications with motion, shock and vibration.

PERFORMANCE SPECIFICATIONS

Wind speed

Range:	0-60m/s, software limited
Accuracy (RMS):	0.5 m/s +/- 5% of actual wind
Resolution:	0.1 m/s

Wind direction

Azimuth:	0-360° (no electrical gap)
Accuracy (RMS):	± 5°
Resolution:	1°

Air temperature

Range:	-40°C to +70°C
Accuracy:	± 1°C at wind speed 2m/s
Resolution:	0.1°C

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Barometric Pressure

Range:	600 to 1100 mbar
Accuracy (RMS):	± 3 mbar, -40 % to 60°C
Resolution:	1 mbar

Soil temperature from external sensor

Range:	-40°C to +70°C
Accuracy (RMS):	+/- 1°C
Resolution:	0.1°C

Sample & Self-Test Rate:	Every 10msec
Start-up:	Automatic, < 10 seconds from power on to first valid Output
Output rate:	Every 100msec
Signal Output:	RS-485, 9600 baud, half duplex

PHYSICAL CHARACTERISTICS

Power

Input Voltage:	18 to 32 VDC
Typical Power:	< 10 Watts

Operating Temperature:	- 40°C to + 70°C
Storage Temperature:	- 55°C to + 95°C

Dimensions

Height:	548mm
Diameter:	83mm
Weight:	3 kg