Йотова, Цветелина А.

From: Попниколова, Петранка А.
Sent: 01 юли 2022 г. 11:30
To: Йотова, Цветелина А.
Cc: Александров, Пламен Г.; Богоева, Юлия К.
Subject: FW: ПАЗАРНА КОНСУЛТАЦИЯ № 49499
Attachments: Индикативно предложение_Сидел Индустриал ООД.pdf

ВХ-Е-3525/ 01.07.2022

From: SIDEL INDUSTRIAL [mailto:office@sidelindustrial.com]
Sent: Friday, July 1, 2022 10:56 AM
To: commercial
Subject: ПАЗАРНА КОНСУЛТАЦИЯ № 49499

Уважаеми господа!

Приложено Ви изпращаме Индикативно предложение за доставка на 50 бр. аерологични сонди тип DFM-17, комплект с аерологични балони.

С уважение,

Управител, Любомир Ралков

моб. +359 8888 05529

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СИДЕЛ ИНДУСТРИАЛ ООД

София, бул.Стамболийски 205, блок Б, ет.3, офис 329

тел./факс: +359 2 812 65 18

СИДЕЛ ИНДУСТРИАЛ ООД

адрес: България, 1309 гр. София,
бул. Александър Стамболийски № 205, блок Б,
офис 329
Лице за контакт: Управител,
Ралков Любомир Колев

ЕИК: 203111634
тел./факс: +359 2 812 65 18
моб.: +359 88 880 5529
e-mail: office@sidelindustrial.com
website: www.sidelindustrial.com

Индикативно предложение по пазарна консултация № 49490
с предмет "Доставка на 50 бр. аерологични сонди тип DFM-17, комплект с аерологични балони"

№ по ред	Описание и технически характеристики на Възложителя	Описание и технически характеристики на предлаганото изделие	М.ед.	К-во	Ед. Цена, лв., без ДДС	Стойност, лв., без ДДС
1	**Аерологични сонди тип DFM-17, комплект с батерии и балони** **1. Предавател:** настройка диапазон: 400.01 MHz - 405.99 MHz; - канално отстояние: 20 KHz; - честотна стабилност: ± 4 KHz; - изходна мощност: P=100 mW; - телеметрия обхват: 250 км. минимум; **2. Захранване:** - време на работа: 150 минути; - саморазряд: по-малко от 1% на година, при стайна температура на съхранение; **3. GPS** - точност: позиция 10 метра без DGPS и по-малко от 5 м. с DGPS; **4. Общи данни** - тегло с батерии до 90 гр.	**Аерологични сонди тип DFM-17, комплект с батерии и балони** **1. Предавател:** настройка диапазон: 400.01 MHz - 405.99 MHz; - канално отстояние: < 12 kHz; - честотна стабилност: < 1 kHz (frequency drift < 1 kHz) ; - изходна мощност: P < 100 mW ; - телеметрия обхват: > 250 km ; **2. Захранване:** - време на работа: > 240 min ; - саморазряд: по-малко от 1% на година, при стайна температура на съхранение; **3. GPS** - точност: позиция 10 метра без DGPS и по-малко от 5 м. с DGPS; **4. Общи данни** - тегло с батерии 63 гр.	**бр.**	**50**	**992.00**	**49 600.00**
					Обща стойност без ДДС	**49 600.00**

Срок на доставка - до 150 календарни дни
Условие на доставка - DDP "АЕЦ Козлодуй" ЕАД
Гаранционен срок: 12 месеца от въвеждане в експлоатация, но не повече 18 месеца от дата на доставка
Условията на съхранение: в сухо помещение 2 години
Съпроводителна документация при доставка: Приемо предавателен протокол; Фактура; Ръководство за експлоатация; CE Сертификат

Забележка: По информация от Производителя, инсталираната версия на софтуер не е съвместима с най-новите модели на аерологични сонди тип DFM-17, т.е. първо трябва инсталиране на надстройка. Включена в единичната цена.

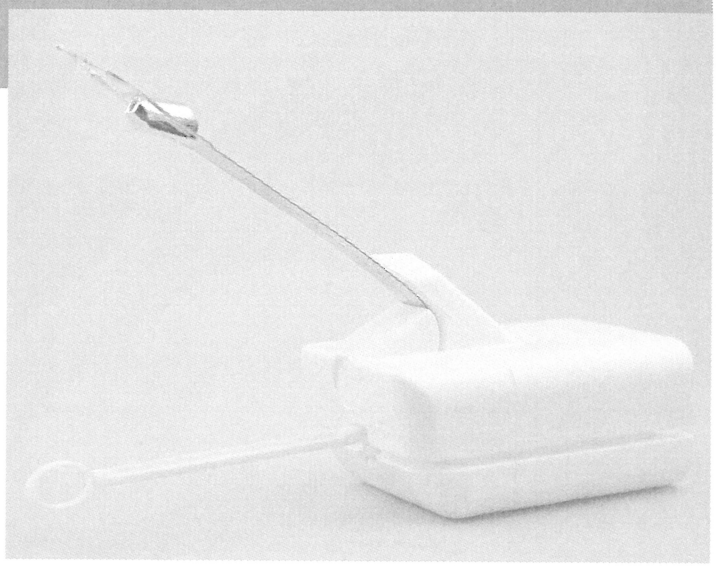
Предлаганият модел е напълно съвместим с Приложение 1 - Техническа спецификация.

01-07-2022

С уважение,
Управител, Любомир Ралков

СИДЕЛ ИНДУСТРИАЛ ООД
София
SIDEL INDUSTRIAL LTD

Radiosonde DFM-17



Features and Benefits

- Multi GNSS PTU radiosonde (GPS, GLONASS, BEIDOU)
- Excellent temperature and humidity accuracy
- Highly stable transmitter
- Status indication via status LEDs
- Optional XDATA interface
- Optional barometric pressure sensor
- Optional ground check via Near Field Communication (NFC)

Overview

The DFM-17 radiosonde is designed for reliable measurement of the atmospheric profile of pressure, temperature, humidity, wind speed and wind direction from the ground to a height of 40 km. Data records are continuously sent to the ground station via a stable radio connection.

Sensor boom

All sensors are supplied „Ready-to-Fly" - 100 % factory-set calibrated. An additional calibration before the flight is not necessary. Temperature and humidity sensors ensure measurements during the ascent, and are not influenced by thermal effects of the housing. A mirrored surface reduces the susceptibility to errors by solar radiation. The ceramic temperature sensor guarantees a fast reaction time due to low mass and heat capacity. The capacitive polymer humidity sensor is protected against icing by a mirrored capsule.

High quality telemetry

The telemetry of the radiosonde was developed for an interference-free transmission of the data and is capable of horizontal distances up to 300 km. The continuous detection and transmission of the measured values of all sensors of the radiosonde is performed in a time window of less than one second.

Indication of the operating status by status LEDs

The operating status of the battery, GNSS and radiosonde sensors is indicated by three status LEDs. This makes it easy to check the proper functionality of the radiosonde before launch.

Near Field Communication (NFC)

The DFM-17 radiosondes can be initialized either via a serial interface or via integrated near field communication.

Technical Data

Size/ Weight	Dimensions (body)	90 x 67 x 44 mm
	Weight	63 g
Power	Battery type	2 x Lithium CR123A
	Operating time	> 240 min.
Tempe-rature	Measurement range	-90 to +60 °C
	Resolution	0.01 °C (internal)
	Reproducibility in sounding	< 0.2 °C
Humidity	Measurement range	0 to 100 %rH
	Resolution	0.1 %rH
	Reproducibility in sounding	< 2 %rH
Pressure	Measurement range	1100 to 1 hPa
	Resolution	0.01 hPa (internal)
	Uncertainty > 100 hPa	< 1 hPa
	Uncertainty 100 - 10 hPa	< 0.2 hPa
	Uncertainty < 10 hPa	< 0.04 hPa
Geopotential height	Measurement range	-500 m to 40,000 m
	Resolution	0.1 m
	Uncertainty	< 8 m
	Reproducibility in sounding	< 5 m
Wind speed	Measurement range	0 to 200 m/s
	Resolution	0.01 m/s (internal)
	Uncertainty	< 0.1 m/s
Wind direction	Measurement range	0 to 360°
	Resolution	0.01°
	Uncertainty	< 1°
Telemetry	Sampling rate	1 data set per second
	Tuning range	400 - 405.99 MHz
	Bandwidth	< 12 kHz
	Max. range	> 250 km
	Frequency stability, 90% probability	< 1 kHz
	Emission bandwidth	acc. to EN 302 054
GNSS receiver	Type	GPS / GLONASS / BEIDOU
	Number of channels	72

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FL-GRS-DFM-17 en V01.03 - 06/2021 - Errors and omissions excepted.

Datasheet Radiosonde DFM-17

- Designed for balloon borne use throughout the world under all meteorological conditions
- Multi GNSS radiosonde (GPS, GLONASS, BEIDOU)
- Highly stable transmitter
- Low weight, small size
- Simplified handling
- Operating status indication via status LEDs
- Optional XDATA interface
- Easy ground check via Near Field Communication (NFC)
- Optional barometric pressure sensor
- Optional heated humidity sensor

CE UKCA

Radiosonde DFM-17

Overview

The DFM-17 radiosonde is designed for reliable measurement of the atmospheric profile of pressure, temperature, humidity, wind speed and wind direction from the ground to a height of 40 km. Data records are continuously sent to the ground station via a stable telemetry connection.

Sensor boom

To ensure consistent and reliable performance, all sensors are supplied ready to fly — 100% factory-set calibrated, and securely mounted on the sensor boom. An additional calibration before the flight is not necessary. Temperature and humidity sensors ensure measurements during the ascent, and are not influenced by thermal effects of the housing. A mirrored surface reduces the susceptibility to errors by solar radiation. The ceramic temperature sensor guarantees a fast reaction time due to low mass and heat capacity. The capacitive polymer humidity sensor is protected against moisture and icing by a mirrored capsule.

High quality telemetry

The telemetry of the radiosonde was developed for an interference-free transmission of the data and is capable of horizontal distances up to 300 km. The continuous detection and transmission of the measured values of all sensors of the radiosonde is performed in a time window of less than one second.

Near field communication (NFC)

The DFM-17 radiosondes can be initialized either via a serial interface or via integrated near field communication.

Indication of the operating status by status LEDs

The operating status of the battery, GNSS and radiosonde sensors is indicated by three status LEDs. This makes it easy to check the proper functionality of the radiosonde before launch.

Simple flight preparation

All sensors are well protected during transportation and mounted ready to fly. After unpacking, the radiosonde just needs to be initialized, thereafter it can immediately be attached to the balloon. Since the DFM-17 initialization requires very limited physical contact during flight preparation, there is no undue risk of damaging the sonde during the preflight process. The power needed during this procedure is provided by the computer via the initialization cable, thereby saving battery life. A well designed, sturdy, and convenient coupler is used for attaching the DFM-17 to the balloon train. The complete preparation takes less than 1 minute!

Stable housing

The Styrofoam housing is designed to balance between maximum robustness and minimum environmental impact. The housing is designed to fully protect the electronics, including from humidity and moisture, and is strong enough to avoid any damages before and during flight. The shape and colour is designed to minimize any thermal impacts on the sensors. The soft material with smooth edges is designed to lessen the risk of any injuries or damages as the radiosonde falls back to ground.

Technical Data

Temperature	
Type	Resistive
Measurement Range	-90 to +60 °C
Resolution	0.01 °C (internal)
Temperature accuracy	< 0.2 °C
Repeatability in calibration	< 0.05 °C
Reproducibility in sounding	< 0.2 °C
Response time (63.2%, 5 m/s, 1000 hPa)	< 0.6 s
Stability (0.5 years)	< 0.03 °C

Humidity	
Type	Thin-film capacitor
Measurement Range	0 to 100 %rH
Resolution	0.1 %rH
Uncertainty	< 3 %rH
Reproducibility in sounding	< 2 %rH
Repeatability in calibration	< 1 %rH
Response time (6 m/s, 1000 hPa, +20 °C)	0.2 s
Response time (6 m/s, 1000 hPa, -60 °C)	10 s (time lag corrected)
Optional heating (de-icing)	Expected availability end of 2020

Pressure	
Type	Calculated by GPS (optional barometric)
Measurement Range	1100 to 1 hPa
Resolution	0.01 hPa (internal)
Uncertainty > 100hPa	< 1 hPa
Uncertainty 100 - 10hPa	< 0.2 hPa
Uncertainty < 10hPa	< 0.04 hPa

Geopotential height	
Measurement Range	-500 m to 40,000 m
Resolution	0.1 m
Uncertainty	< 8 m
Reproducibility in sounding	< 5 m

Wind speed	
Method	Calculated by GPS
Measurement Range	0 to 200 m/s
Resolution	0.01 m/s (internal)
Uncertainty	< 0.1 m/s

Wind direction	
Method	Calculated by GPS
Measurement Range	0 to 360°
Resolution	0.01° (internal)
Uncertainty	< 1°

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Telemetry	
Transmitter type	Synthesized
Tuning Range	400 - 405.99 MHz
Bandwidth	< 12 kHz
Max. range	> 250 km
Frequency stability	< 1 kHz (frequency drift < 1 kHz)
Emission bandwidth	Acc. to EN 302 054
Output power	< 100 mW
Sideband radiation	Acc. to EN 302 054
Modulation	GFSK
Data downlink	1250 bit/s
Data loss	< 1%
Sampling rate	1 Hz
Frequency channels	300 (tuneable in 20 KHz steps)
National standards	ETSI (Europe), NTIA (USA)

GNSS receiver	
Type	GPS/GLONASS/BEIDOU
Number of channels	72
Cold start acquisition time	26 s
Reacquisition time	1 s
Technology	DGPS (SBAS)
Horizontal position accuracy	< 2.5 m
Horizontal position error	< 5 m (CEP90)
Vertical position error	< 10 m (CEP90)
Velocity accuracy	< 0.05 m/s
Heading accuracy	< 0.3°
Maximum altitude	unlimited

Interface to external sensors	
Protocol	Xdata
Transfer rate	24 bytes/s

Miscellaneous	
Battery type	2 x Lithium CR123A, replaceable
Battery capacity	2 x 1500 mAh
Battery operating time	> 240 min
Battery voltage	3 - 6 V
Battery saving feature	Radiosonde powered by groundstation during preparation
Dimensions (body)	90 x 67 x 44 mm
Weight	63 g
Antenna	Soft wire with cover to protect from injuries
Documentation	Complete user documentation set is available

Unwinder	
Material of string	Polypropylene (optional cotton)
Tenacity	< 120 N
Length of string	30 m
Unwinding Speed	0.3 m/s
Weight	25 g

Packing / Labelling	
Packing type	Robust carton with individual protective placeholders
Moisture protection	Optional sealed packing with an appropriate desiccant package
Quantity per carton	Standard (1, 5, 25) or customer-specific
Labelling	Standard or customer-specific with durable and legible marking
Serial numbers	Standard or customer-specific
Shipping documentation	Standard or customer-specific packing lists, commercial invoices, customs documents, etc.

Notes: Uncertainties are expressed with 2-sigma confidence level (k=2); Reproducibility calculated by twin soundings.

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EN17050:2004 Industrie / *Industry* DOC-CE-IND	**DOC** EU – Konformitätserklärung *EU – Declaration of Conformity*	GRAW RADIOSONDES

Zertifikatsnummer / *Certificate ID:* DOC_2020-034_CE-IND_DFM

Hersteller / *Manufacturer:*

GRAW Radiosondes GmbH & Co. KG
Muggenhofer Straße 95
90429 Nürnberg
Germany

Gegenstand der Erklärung / *Object of declaration:*

Hiermit erklärt der Hersteller in alleiniger Verantwortung, dass die folgenden Produkte /
We hereby declare on our exclusive authority that the following products:

Produktgruppe / *Productgroup*	**Produkt / *Product***
Radiosonde / *radiosonde*	DFM-09, DFM-17, PS-15

EU-Richtlinien und Normen / *EU Directives and standards:*

gemäß den nachfolgenden EU-Richtlinien unter Einhaltung der beschriebenen Normen konform sind /
are in conformity with the following EU Directives. This is verified by confirming the listed standards:

EMV-Richtlinie / *EMC Directive:*	**2014/30/EU**	EN 301489
RoHS-Richtlinie / *RoHS Directive:*	**2011/65/EU**	EN 50581 : 2012
Telekommunikationsrichtlinie / *Radio Equipment Directive (RED):*	**2014/53/EU**	EN 300220-2 : 2018-09
Niederspannungsrichtlinie / *Low Voltage Directive (LVD):*	**2014/35/EU**	
Gesundheits- und Sicherheitsanforderungen / *Health and safety requirements:*		EN 62368-1 EN 62479 : 2010
Harmonized Standards (Meteorological Aids):		EN 302054-2

Unterzeichnet für und im Namen des Herstellers / *signed for and on behalf of the manufacturer:*

Nürnberg / *Nuremberg*, 03.03.2020

Florian Schmidmer (CEO)

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