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| WORLD METEOROLOGICAL ORGANIZATIONCOMMISSION FOR BASIC SYSTEMS-----------------------------SECOND MEETING OFINTER-PROGRAMME EXPERT TEAM ONCODES MAINTENANCEOFFENBACH, GERMANY, 28 MAY - 1 JUNE 2018 |  | IPET-CM-II / Doc. 2.4(10)23.05.2018-------------------------ITEM 2.4ENGLISH ONLY |

MANUAL ON CODES: TABLE-DRIVEN CODE FORMS

FM 94 BUFR/FM 95 CREX

Revised BUFR template for surface observations from n-minute period

*Submitted by Tanja Kleinert (EUMETNET), Sibylle Krebber (DWD)*

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**Summary and Purpose of Document**

This document proposes further changes and amendments to TM307092 for n-minute AWS data reporting, requested during the validation.

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**ACTION PROPOSED**

The meeting is requested to review and approve the contents for inclusion within the November 2018 fast-track (FT2018-2) update to the WMO Manual on Codes.

**ANNEXES:**

1. Validation report IPET-CM-II-Validation-SubHourlyAWS.docx
2. Document and Annex to the EUMETNET governing body STAC (Scientific and Technical Advisory Committee):

EMN-STAC16\_Doc06\_Sub\_hourly\_AWS\_BUFR\_template\_Item\_4.5

**DISCUSSIONS**

EUMETNET Members had agreed to work towards an international exchange of surface sub-hourly AWS data in future and a Task Team was set up in 2016 to draft a new BUFR template for sub-hourly AWS data reporting on the basis of the draft template 307092. The Task Team met in online conference meetings on 17th October 2016 as well as on 9th November 2017 and agreed on a new draft BUFR template for reporting sub-hourly AWS data which was circulated among EUMETNET Members and several IPET-CM Members via email on 26th January 2018. 12 replies containing either approvals of the template but also comments and questions were received. Change requests have been added to the template afterwards.

The final draft version of the BUFR template (3 07 092) was presented to EUMETNET governing body STAC (Scientific and Technical Advisory Committee). STAC approved the draft template in its conclusion STAC16.06 and agreed to the proposed way forward to propose the template to IPET-CM (next meeting end of May 2018) for consideration, validation and official WMO approval – via fast-track procedure.

Afterwards the validation has been done between ECMWF and DWD.

**PROPOSAL**

Revised Table D sequence 3 07 092:

|  |  |  |  |
| --- | --- | --- | --- |
| TABLEREFERENCE | TABLEREFERENCES | ELEMENT NAME | ELEMENT DESCRIPTION |
| F X Y |
|  |  |  |  |
|  |  | (BUFR template for surface observations from n-minute period) |  |
| **3 07 092** | 3 01 150 | WIGOS identifier |  |
|  | 3 01 001 | WMO block and station numbers |  |
|  | 2 08 040 | Change width of CCITT IA5 |  |
|  | 0 01 019 | Long station or site name | 40 characters |
|  | 2 08 000 | Change width of CCITT IA5 |  |
|  | 3 01 011 | Year, month, day | The time identification refers to the end of the n-minute period. |
|  | 3 01 012 | Hour, minute |
|  | 3 01 021 | Latitude/longitude (high accuracy) |  |
|  | 0 07 030 | Height of station ground above mean sea level |  |
|  | 0 01 023 | Observation Sequence number |  |
|  | 1 08 000 | Delayed replication of 8 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 07 031 | Height of barometer above mean sea level |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 10 004 | Pressure | Measured value of the air pressure at the sensor location and sensor height |
|  | 0 10 051 | Pressure reduced to mean sea level |  |
|  | 0 07 004 | Pressure (standard level) |  |
|  | 0 10 009 | Geopotential height of the standard level |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 1 15 000 | Delayed replication of 15 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 032 | Height of sensor above local ground  |  |
|  | 0 08 010 | Surface qualifier |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 12 101 | Temperature/Air-temperature | Scale: 2 |
|  | 0 12 103 | Dew-point temperature | Scale: 2 |
|  | 2 02 129 | Change scale |  |
|  | 2 01 132 | Change data width |  |
|  | 0 13 003 | Relative humidity | Mandatory to report (presuming a humidity sensor is installed), data width 11 Bits |
|  | 2 01 000 | Cancel change data width |  |
|  | 2 02 000 | Cancel change scale |  |
|  | 0 13 009 | Relative humidity (original measured value) |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 0 07 032 | Height of sensor above local ground | Set to missing (cancel) |
|  | 0 08 010 | Surface qualifier | Set to missing (cancel) |
|  | 1 07 000 | Delayed replication of 7 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 061 | Depth below land surface |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 12 130 | Soil temperature |  |
|  | 0 13 111 | Soil moisture |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 0 07 061 | Depth below land surface | Set to missing (cancel) |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Delayed descriptor replication factor |  |
|  | 0 33 041 | Attribute of following value |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 20 001 | Horizontal visibility |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 1 13 000 | Delayed replication of 13 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 20 010 | Cloud cover (total) |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 1 07 000 | Replicate 7 descriptors four times |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 08 002 | Vertical significance |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 20 011 | Cloud amount |  |
|  | 0 20 013 | Height of base of cloud |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 0 08 002 | Vertical significance | Set to missing (cancel) |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 20 062 | State of ground (with or without snow) |  |
|  | 0 13 013 | Total snow depth |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 1 05 000 | Delayed replication of 5 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period  | = - n minutes |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 20 003 | Present weather |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 1 05 000 | Delayed replication of 5 descriptors  |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period | = - n minutes |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 13 011 | Total precipitation / total water equivalent of snow  |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 1 15 000 | Delayed replication of 15 descriptors |  |
|  | 0 31 001 | Delayed descriptor replication factor |  |
|  | 0 07 032 | Height of sensor above local ground |  |
|  | 0 08 021 | Time significance | = 2 Time averaged |
|  | 0 04 025 | Time period | = –10 minutes, or number of minutes after a significant change of wind |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 11 001 | Wind direction |  |
|  | 0 11 002 | Wind speed |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 0 08 021 | Time significance | Set to missing (cancel) |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 11 043 | Maximum wind gust direction |  |
|  | 0 11 041 | Maximum wind gust speed  |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 0 07 032 | Height of sensor above local ground | Set to missing (cancel) |
|  | 1 05 000 | Delayed replication of 5 descriptor  |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period  | = - n minutes (Default n=10) |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 14 031 | Total sunshine |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 1 10 000 | Delayed replication of 10 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor | Open or close (1/0) |
|  | 0 04 025 | Time period | = - n minutes (Default n=10) |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 14 002 | Long-wave radiation, integrated over period specified | Upward long-wave radiationAccording to BUFR Table B, under Class 14, Note (2): negative values |
|  | 0 14 002 | Long-wave radiation, integrated over period specified | Downward long-wave radiationAccording to BUFR Table B, under Class 14, Note (1): positive values |
|  | 0 14 004 | Short-wave radiation, integrated over period specified  | Upward short-wave radiationAccording to BUFR Table B, under Class 14, Note (2): negative values |
|  | 0 14 028 | Global solar radiation (high accuracy), integrated over period specified |  |
|  | 0 14 029 | Diffuse solar radiation (high accuracy), integrated over period specified  |  |
|  | 0 14 030 | Direct solar radiation (high accuracy), integrated over period specified |  |
|  | 2 04 000 | Cancel associated field |  |
|  | 1 13 000 | Delayed replication of 13 descriptors |  |
|  | 0 31 000 | Short delayed descriptor replication factor |  |
|  | 0 04 025 | Time period | = - n minutes (Default n=10) |
|  | 0 02 071 | Spectrographic wavelength | UV-A: 315 nm |
|  | 0 02 072 | Spectrographic width | UV-A: 85 nm |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance |  |
|  | 0 14 072 | Global UV irradiation, integrated over period specified  | UV-A irradiationAccording to BUFR Table B under Class 14, Note (8)*(ISO 21348: UV-A wave length range 315 ≤ λ ≤400 nm)* |
|  | 2 04 000 | Cancel associated field |  |
|  | 0 02 071 | Spectrographic wavelength | UV-B: 280 nm |
|  | 0 02 072 | Spectrographic width | UV-B: 35 nm |
|  | 2 04 018 | Add associated field |  |
|  | 0 31 021 | Associated field significance | Quality flag |
|  | 0 14 072 | Global UV irradiation, integrated over period specified  | UV-B irradiationAccording to BUFR Table B under Class 14, Note (8)*(ISO 21348 UV-B wave length range 280 ≤ λ ≤ 315 nm)* |
|  | 2 04 000 | Cancel associated field |  |

The corresponding TM:

**TM 307092 - BUFR template for AWS surface observations from n-minute period**

This template is proposed to be used for representation of observation data from surface-based automatic weather stations obtained in n-minute intervals.

Main principles:

* All groups of data have replication factors: if your automatic system doesn’t code the group, the 0 31 001 factor is put to 0 and the group is « closed »
* Main data are able to be qualified with an Associated field significance

This BUFR template further expands as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **Table References** | **Element Name** | **Unit, Scale** | **Element Description** |
|  |  | **(WIGOS identifier)** (1) |  |  |
| 3 01 150 | 0 01 125  | WIGOS identifier series | Numeric, 0 |  |
|  | 0 01 126  | WIGOS issuer of identifier | Numeric, 0 |  |
|  | 0 01 127  | WIGOS issue number | Numeric, 0 |  |
|  | 0 01 128 | WIGOS local identifier (character) | CCITT IA5 |  |
|  |  | **(Surface station identification)** |  |  |
| 3 01 001 | 0 01 001 | WMO block number (2) | Numeric, 0 |  |
|  | 0 01 002 | WMO station number (2) | Numeric, 0 |  |
| 2 08 040 |  | Change width of CCITT IA5 |  |  |
| 0 01 019 |  | Long station or site name | CCITT IA5, 0 | 40 characters |
| 2 08 000 |  | Change width of CCITT IA5 |  |  |
|  |  | **(Year, month, day)** |  |  |
| 3 01 011 | 0 04 001 | Year(3) | Year, 0 |  |
|  | 0 04 002 | Month(3) | Month, 0 |  |
|  | 0 04 003 | Day(3) | Day, 0 |  |
|  |  | **(Hour, minute)** |  |  |
| 3 01 012 | 0 04 004 | Hour(3) | Hour, 0 |  |
|  | 0 04 005 | Minute(3) | Minute, 0 |  |
|  |  | **(Latitude, longitude (high accuracy))** |  |  |
| 3 01 021 | 0 05 001 | Latitude (high accuracy) | Degree, 5 |  |
|  | 0 06 001 | Longitude (high accuracy) | Degree, 5 |  |
| 0 07 030 |  | Height of station ground above mean sea level | m, 1 |  |
| 0 01 023 |  | Observation Sequence number | Numeric, 0 |  |
|  |  |  |  |  |
|  |  | **(INSTANTANEOUS DATA)** |  |  |
|  |  | **(Air pressure)** |  |  |
| 1 08 000 |  | Delayed replication of 8 descriptors |  |  |
| 0 31 000 |  | Short delayed descriptor replication factor | Numeric, 0 | Open or close (1/0) |
| 0 07 031 |  | Height of barometer above mean sea level | m, 1 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 10 004 |  | Pressure | Pa, –1 | Measured value of the air pressure at the sensor location and sensor height |
| 0 10 051 |  | Pressure reduced to mean sea level | Pa, –1 |  |
| 0 07 004 |  | Pressure (standard level) | Pa, –1 |  |
| 0 10 009 |  | Geopotential height of the standard level | gpm, 0 |  |
| 2 04 000 |  | Cancel associated field |  |  |
|  |  | **(Temperature and humidity)** |  | Data measured in different heights (e.g. 2m and 0cm or 5cm for ground temperature) |
| 1 15 000 |  | Delayed replication of 15 descriptors |  |  |
| 0 31 001 |  | Delayed descriptor replication factor | Numeric, 0 |  |
| 0 07 032 |  | Height of sensor above local ground  | m, 2 |  |
| 0 08 010 |  | Surface qualifier | Code table, 0 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 12 101 |  | Temperature/Air-temperature (scale 2)  | K, 2 |  |
| 0 12 103 |  | Dew-point temperature (scale 2) | K, 2 |  |
| 2 02 129 |  | Change scale |  |  |
| 2 01 132 |  | Change data width |  |  |
| 0 13 003 |  | Relative humidity | %, 1 | Mandatory to report (presuming a humidity sensor is installed), data width 11 Bits |
| 2 01 000 |  | Cancel change data width |  |  |
| 2 02 000 |  | Cancel change scale |  |  |
| 0 13 009 |  | Relative humidity (original measured value) | %, 1 |  |
| 2 04 000 |  | Cancel associated field |  |  |
| 0 07 032 |  | Height of sensor above local ground(set to missing to cancel the previous value) | m, 2 |  |
| 0 08 010 |  | Surface qualifier (set to missing to cancel the previous value) | Code table, 0 |  |
|  |  | **(Soil temperature and soil moisture)** |  |  |
| 1 07 000 |  | Delayed replication of 7 descriptors |  |  |
| 0 31 001 |  | Delayed descriptor replication factor | Numeric, 0 |  |
| 0 07 061 |  | Depth below land surface | m, 2 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 12 130 |  | Soil temperature | K, 2 |  |
| 0 13 111 |  | Soil moisture | g kg-1, 0 |  |
| 2 04 000 |  | Cancel associated field |  |  |
| 0 07 061 |  | Depth below land surface (set to missing to cancel the previous value) | m, 2 |  |
|  |  | **(Visibility)** |  |  |
| 1 05 000 |  | Delayed replication of 6 descriptors |  |  |
| 0 31 000 |  | Delayed descriptor replication factor | Numeric, 0 |  |
| 0 33 041 |  | Attribute of following value | Code table, 0 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 20 001 |  | Horizontal visibility | m, –1 |  |
| 2 04 000 |  | Cancel associated field |  |  |
|  |  | **(Cloud)** |  |  |
| 1 13 000 |  | Delayed replication of 13 descriptors |  |  |
| 0 31 000 |  | Short delayed descriptor replication factor | Numeric, 0 | Open or close (1/0) |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 20 010 |  | Cloud cover (total) | %, 0 |  |
| 2 04 000 |  | Cancel associated field |  |  |
| 1 07 000 |  | Replicate 7 descriptors four times |  | 4 cloud layers |
| 0 31 001 |  | Delayed descriptor replication factor | Numeric, 0 |  |
| 0 08 002 |  | Vertical significance | Code table, 0 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 20 011 |  | Cloud amount | Code table, 0 |  |
| 0 20 013 |  | Height of base of cloud | m, –1 |  |
| 2 04 000 |  | Cancel associated field |  |  |
| 0 08 002 |  | Vertical significance (set to missing) | Code table, 0 |  |
|  |  |  |  |  |
|  |  | **(State of ground and snow depth measurement)** |  |  |
| 1 05 000 |  | Delayed replication of 5 descriptors |  |  |
| 0 31 000 |  | Short delayed descriptor replication factor | Numeric, 0 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 20 062 |  | State of ground (with or without snow) | Code table, 0 |  |
| 0 13 013 |  | Total snow depth | m, 2 |  |
| 2 04 000 |  | Cancel associated field |  |  |
|  |  |  |  |  |
|  |  | **(PERIOD DATA)** |  |  |
|  |  | **(Present weather)** |  |  |
| 1 05 000 |  | Delayed replication of 5 descriptors |  |  |
| 0 31 000 |  | Short delayed descriptor replication factor | Numeric, 0 | Open or close (1/0) |
| 0 04 025 |  | Time period (= - n minutes) | Minute, 0 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 20 003 |  | Present weather |  |  |
| 2 04 000 |  | Cancel associated field |  |  |
|  |  | **(Precipitation)** |  |  |
| 1 05 000 |  | Delayed replication of 5 descriptors  |  |  |
| 0 31 000 |  | Short delayed descriptor replication factor | Numeric, 0 | Open or close (1/0) |
| 0 04 025 |  | Time period (= - n minutes) | Minute, 0 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 13 011 |  | Total precipitation / total water equivalent of snow  | kg m-2, 1 |  |
| 2 04 000 |  | Cancel associated field |  |  |
|  |  | **(Wind)** |  | Data measured in different heights |
| 1 15 000 |  | Delayed replication of 15 descriptors |  |  |
| 0 31 001 |  | Delayed descriptor replication factor | Numeric, 0 |  |
| 0 07 032 |  | Height of sensor above local ground | m, 2 |  |
| 0 08 021 |  | Time significance = 2 Time averaged | Code table, 0 |  |
| 0 04 025 |  | Time period = –10 minutes, or number of minutes after a significant change of wind | Minute, 0 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 11 001 |  | Wind direction | Degree true, 0 |  |
| 0 11 002 |  | Wind speed | m s-1, 1 |  |
| 2 04 000 |  | Cancel associated field |  |  |
| 0 08 021 |  | Time significance = missing value | Code table, 0 |  |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 11 043 |  | Maximum wind gust direction | Degree true, 0 |  |
| 0 11 041 |  | Maximum wind gust speed  | m s-1, 1 |  |
| 2 04 000 |  | Cancel associated field |  |  |
| 0 07 032 |  | Height of sensor above local ground(set to missing to cancel the previous value) | m, 2 |  |
|  |  | **(Sunshine)** |  |  |
| 1 05 000 |  | Delayed replication of 5 descriptor  |  |  |
| 0 31 000 |  | Short delayed descriptor replication factor | Numeric, 0 | Open or close (1/0) |
|  |  |  |  |  |
| 0 04 025 |  | Time period (= - n minutes) | Minute, 0 | Default 10 minutes |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
|  |  |  |  |  |
| 0 14 031 |  | Total sunshine | Minute, 0 |  |
| 2 04 000 |  | Cancel associated field |  |  |
|  |  | **(Short- and long-wave radiation)** |  |  |
| 1 10 000 |  | Delayed replication of 10 descriptors |  |  |
| 0 31 000 |  | Short delayed descriptor replication factor | Numeric, 0 | Open or close (1/0) |
| 0 04 025 |  | Time period (= - n minutes) | Minute, 0 | Default 10 minutes |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 14 002 |  | Long-wave radiation, integrated over period specified | J m-2, -3 | Upward long-wave radiationAccording to BUFR Table B, under Class 14, Note (2): negative values |
| 0 14 002 |  | Long-wave radiation, integrated over period specified | J m-2, -3 | Downward long-wave radiationAccording to BUFR Table B, under Class 14, Note (1): positive values |
| 0 14 004 |  | Short-wave radiation, integrated over period specified  | J m-2, -3 | Upward short-wave radiationAccording to BUFR Table B, under Class 14, Note (2): negative values |
| 0 14 028 |  | Global solar radiation (high accuracy), integrated over period specified | J m-2, -2 |  |
| 0 14 029 |  | Diffuse solar radiation (high accuracy), integrated over period specified  | J m-2, -2 |  |
| 0 14 030 |  | Direct solar radiation (high accuracy), integrated over period specified | J m-2, -2 |  |
| 2 04 000 |  | Cancel associated field |  |  |
|  |  | **(UV radiation)** |  |  |
| 1 13 000 |  | Delayed replication of 13 descriptors |  |  |
| 0 31 000 |  | Short delayed descriptor replication factor | Numeric, 0 | Open or close (1/0) |
| 0 04 025 |  | Time period (= - n minutes) | Minute, 0 | Default 10 minutes |
|  |  |  |  |  |
|  |  |  |  |  |
| 0 02 071 |  | Spectrographic wavelength | m, 13 | UV-A: 315 nm |
| 0 02 072 |  | Spectrographic width | m, 13 | UV-A: 85 nm |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 14 072 |  | Global UV irradiation, integrated over period specified  | J m-2, 0 | UV-A irradiationAccording to BUFR Table B under Class 14, Note (8)*(ISO 21348: UV-A wave length range 315 ≤ λ ≤400 nm)* |
| 2 04 000 |  | Cancel associated field |  |  |
| 0 02 071 |  | Spectrographic wavelength | m, 13 | UV-B: 280 nm |
| 0 02 072 |  | Spectrographic width | m, 13 | UV-B: 35 nm |
| 2 04 018 |  | Add associated field |  |  |
| 0 31 021 |  | Associated field significance | Code table, 0 | Quality flag |
| 0 14 072 |  | Global UV irradiation, integrated over period specified  | J m-2, 0 | UV-B irradiationAccording to BUFR Table B under Class 14, Note (8)*(ISO 21348 UV-B wave length range 280 ≤ λ ≤ 315 nm)* |
| 2 04 000 |  | Cancel associated field |  |  |

1. WIGOS Station Identifiers shall be used for n-minute period observations.
2. According to WMO letter 37992/2017/OBS/WIS/DRMM/DRC/WIGOS/ID issued 30 October 2017 Members are asked to follow the guidelines: When Members report data from observation sites that have traditional station identifiers, such as WMO block number (0 01 001)/WMO station number (0 01 002) and buoy platform identifier (0 01 005), they should also be reported in addition to corresponding WSI (3 01 150), to ensure the continuity of data use. On the other hand, the traditional station identifiers should be reported as "missing" when observation sites do not have the traditional identifiers.
3. The time identification refers **to the end of the n-minute period**.