

RASS Temperature BUFR message format

Our goal is a flexible format that will encompass vertical upper air profiles regardless of the type of instrumentation used to measure them, enabling future data processing systems to operate with a minimum of software development.

Also, in order to avoid time delays encountered due to data organization, we propose a single station's measurements for a single time period in each individual message. Our single most heard complaint about current data delivery is that it isn't as timely as could be, especially for use in NWP.

Proposed BUFR definition for RASS Temperature profiles:

Data Field	Element Name	Table B Descrip	Scale (10**n)	Reference (-n)	Width (Bits)	Units	Comments
1	WMO Block #	0 01 001	0	0	7	Numeric	(3 1 32) (3 1 1) MBM
2	WMO Station #	0 01 002	0	0	10	Numeric	(3 1 32)(3 1 1) MBM
3	Type of Station	0 02 001	0	0	2	Code Table	(3 1 32) 0 = automatic
4	Year	0 04 001	0	0	12	year	(3 1 32) (3 1 11)
5	Month	0 04 002	0	0	4	month	(3 1 32) (3 1 11)
6	Day	0 04 003	0	0	6	day	(3 1 32) (3 1 11)
7	Hour	0 04 004	0	0	5	hour	(3 1 32) (3 1 12)
8	Minute	0 04 005	0	0	6	minute	(3 1 32) (3 1 12)
9	Latitude (Low Accuracy)	0 05 002	2	-9000	15	Degrees	(3 1 32)(3 1 24)
10	Longitude (Low Accuracy)	0 06 002	2	-18000	16	Degrees	(3 1 32)(3 1 24)
11	Height of Station	0 07 001	0	-400	15	m	(3 1 32)(3 1 24)Elevation AS
12	Station short name	0 01 018			40	CCITT IA5	MBM
13	Type of measuring equip	0 02 003	0	0	4	Code Table	8 = RASS
14	Time Significance	0 08 021	0	0	5		2 = Time Averaged
15	Averaging Time Period	0 04 026	0	-4096	13	Seconds	-360 or -3600 for NPN (note
16	Repeat 3 descriptors	1 03 000					Includes 0 31 001
17	Replication number	0 31 001	0	0	8	Numeric	# of measurements
18	Height above station	0 07 006	0	-1000	17	Meters	
19	Virtual Temperature	0 12 007	1	0	12	K	
20	Quality Indicators	0 25 034	0	0	4	Flag Table	

Legend: MBM = May Be Missing, if station not permanent

Note 1: I believe this number should be negative to denote the fact we were averaging over the PREVIOUS n seconds.