Explanation to some of the most common codes used in meteorological reports

Date: 19.11.2025

METAR

A METAR is a weather observation that is issued at half-hourly intervals, with observation time 20 and 50 minutes past each hour.

AUTOMETAR is usually issued during non-operational hours.

If the weather changes significantly from the last METAR, and it is not yet time for the next one, then a SPECI may be issued. The format and contents of a SPECI is similar to a METAR. There is no requirement of issuing SPECI when METAR is sent twice each hour. Since a SPECI is not sent at fixed intervals, the date-time group (DTG) of the SPECI is the time it is issued.

The observation time for METAR is given in UTC. A METAR contains actual weather observed during the observation period, which is normally the last 10 minutes prior to the observation time.

The DTG (Date Time Group) when the METAR/SPECI is issued, is in the format DDHHMM

Examples: METAR 191050Z …

METAR AUTO 230320Z

SPECI 191107Z …

Examples of METAR/SPECI:

METAR 191050Z VRB03KT CAVOK 03/M05 Q1014

SPECI 191107 12012G36KT 3000 -SHSN SCT008 BKN015 M06/M06 Q0997

METAR 191050Z 25007KT 9999 FEW025 SCT040 03/M03 Q1013 RERA

METAR 191050Z 04011KT 350V090 9999 VCSH FEW020 SCT030 BKN050 08/M03 Q1005 NOSIG

METAR 191050Z 13005G18KT 6000 -SHRAGSSN FEW015CB SCT025 BKN050 01/M08 Q1014

METAR 191050Z 01002KT 0200 FZFG R36/0350 VV001 M02/M02 Q1007 WS R36

TAF

A TAF is an aerodrome forecast.

The validity period of a TAF is 6-9 hours for short TAF (with prefix FC), and 24 hours for long TAF (with prefix FT)

A Norwegian TAF will never contain temperature, dewpoint or QNH.

The DTG (Date Time Group) when the TAF is issued, is in the format DDHHMM.

The validity period of a TAF is given in the DDHH format, 1909/1918 means that the TAF is for the 19th, valid from 0900 to 1800 hours UTC.

Examples of TAF (FC and FT):

TAF (FC) 190800Z 1909/1918 03015KT 9999 SCT012 BKN025 PROB30 TEMPO 1909/1918 3000 -SNRA BKN008

TAF (FC) 190800Z 1909/1918 26008KT 9999 FEW030TCU

TAF (FT) 191700Z 1918/2018 VRB05KT CAVOK

TAF (FC) 190800Z 1909/1918 20005KT 9999 FEW025 BKN040 BECMG 1912/1915 3000 -SN VV012

WEATHER ELEMENTS REPORTED IN METAR

WIND

The mean surface wind direction and speed is reported in steps of 10 degrees true and 1 kt respectively.

Variations from the mean wind direction during the past 10 minutes will be reported as follows, if the total variation is 60° or more:

a) when the total variation is 60° or more and less than 180° and the wind speed is 3 kt or more, such directional variations will be reported as the two extreme directions between which the surface wind has varied.
   Example: 12012KT 030V190
b) when the total variation is 60° or more and less than 180° and the wind speed is less than 3 kt, the wind direction will be reported as variable with no mean wind direction.
   Example: VRB02KT
c) when the total variation is 180° or more, the wind direction will be reported as variable with no mean wind direction.
   Example: VRB08KT

Variations from the mean wind speed (gusts), during the past 10 minutes will be reported when the maximum wind speed exceeds the mean speed by 10 kt or more.

Example: 21015G25KT, meaning wind from 210 degrees, mean strength 15 knots with gust of 25 knots during the last ten minutes.

When the 10-minute period includes a marked discontinuity in the wind direction and/or speed, only variations from the mean wind direction and mean wind speed occurring since the discontinuity is reported. A marked discontinuity occurs when there is an abrupt and sustained change in wind direction of 30° or more, with a wind speed of 10 kt before or after the change, or a change in wind speed of 10 kt or more, lasting at least 2 minutes.

Wind speed of 100 kt or more is reported as more than 99 knots, P99KT

VISIBILITY

Visibility is reported as prevailing visibility, which means the greatest visibility value, observed in accordance with the definition of 'visibility', which is reached within at least half the horizon circle or within at least half of the surface of the aerodrome. These areas could comprise contiguous or non-contiguous sectors

If visibility is 10 kilometers or more, the code will be 9999.

When the lowest visibility is different from the prevailing visibility, and (1) less than 1 500 m or (2) less than 50 % of the prevailing visibility, and less than 5 000 m, the lowest visibility observed should also be reported and, when possible, its general direction in relation to the aerodrome reference point indicated by reference to one of the eight points of the compass.

Example: 9000 4000NE,

2000 1400S

RUNWAY VISUAL RANGE

Runway visual range (RVR) reported throughout periods when either the visibility or the runway visual range is less than 1 500 m.

The RVR is prefixed by the letter R followed by runway designator, then a slash (/) followed by the RVR in meters.

Example: R24/0500

RVR is reported in steps of 25 m when it is less than 400 m, in steps of 50 m when it is between 400 and 800 m, and in steps of 100 m when it is more than 800 m.

When the RVR is above the maximum value that can be determined by the system in use, it shall be reported using the abbreviation 'P' in METAR and SPECI followed by the maximum value that can be determined by the system.

Example R19/P2000

When the RVR is below the minimum value that can be determined by the system in use, it shall be reported using the abbreviation 'M' in METAR, followed by the minimum value that can be determined by the system.

Example: R36/M0050, meaning that for RWY36 the RVR is less than 50 meters

If the RVR is measured by instruments, it is usually the mean RVR over ten minutes that is given. When the variation of the RVR values shows an upward or downward tendency, this should be indicated by the abbreviation 'U' or 'D', respectively. In cases when actual fluctuations during the 10-minute period show no distinct tendency, this should be indicated using the abbreviation 'N'.

Example: R01/0900U: Mean RVR of 900 meters and the RVR is improving

CLOUDS

Clouds of operational significance is reported.

Cloud amount is reported using the abbreviations 'FEW' (1 to 2 oktas), 'SCT' (3 to 4 oktas), 'BKN' (5 to7 oktas) or 'OVC' (8 oktas).

Cloud type is reported only for cumulonimbus (CB) and towering cumulus (TCU).

Height of cloud base is reported in feet.

Cloud coverage is indicated in up to three groups, depending on coverage: (Number of cloud groups may exceed three, but only if clouds CB or TCU is observed and not included in one of the other groups). First group will always be the lowest clouds:

1st group: Lowest clouds, regardless of how much of the sky is covered.

2nd group: Cloud coverage of SCT, BKN or OVC.

3rd group: Cloud coverage of BKN or OVC.

If clouds are obscured, vertical visibility will be used instead. This is indicated by VV followed by the vertical visibility in feet.

CAVOK (Clouds And Visibility OK) may be used in lieu of visibility and clouds if all of the following criteria are met:

- No clouds below 5000 feet or minimum sector altitude (MSA) if MSA is higher than 5000 feet.
- No CB or TCU.
- No significant weather, either at the aerodrome or in the vicinity.
- Visibility of 10 kilometers or more.

If there are no clouds of operational significance and no restriction on vertical visibility and the abbreviation 'CAVOK' is not appropriate, the abbreviation 'NSC' is used.

NCD (No Cloud detected) is used in automatic observations when no clouds below 5000 feet or minimum sector altitude (MSA) if MSA is higher than 5000 feet is reported.

PRESENT WEATHER

Present weather is reported at the aerodrome and its vicinity in terms of type and characteristics and qualified with respect to intensity or proximity to the aerodrome, as appropriate.

Intensity	**Description**	**Precipitation**	**Weather that reduces visibility**	**Other weather phenomena**
- Light Moderate (no indication) + Heavy VC: Within 16 kilometers from,	MI: Shallow BC: Patches PR: Partial, part of runway DR: Drifting BL: Blowing SH: Showers TS: Thunder FZ: Freezing	DZ: Drizzle RA: Rain SN: Snow SG: Snow grains PL: Ice pellets GR: Hail GS: Small hail	BR: Mist FG: Fog FU: Smoke VA: Volcanic ash DU: Dust devils SA: Sand HZ: Dry mist, haze	PO: Dust/sand swirls SQ: Squalls FC: Funnel clouds, tornado, twister SS: Sand storm DR: Dust storm

but not at the aerodrome.		UP. Unknown precipitation (AUTO)		

Examples: +SHRA: Heavy showers of rain.

MIFG: Shallow fog.

FZFG Freezing fog.

PRFG: Partial fog, part of the runway is obscured by fog.

-DZRA: Light drizzle and rain.

SN: Moderate snow.

VCSH: Precipitation within 16 kilometers (but not at) the aerodrome.

TEMPERATURE/DEWPOINT

The temperature group in a METAR contains both the air temperature and the dewpoint, separated by a slash (/). Temperatures are given in whole degrees Celsius. Temperatures below zero are prefixed with the letter M (minus).

AIR PRESSURE

QNH is an international code for the air pressure at the aerodrome reduced to sea level. In METAR this is prefixed with the letter Q, and QNH is given in hectopascal.

RECENT WEATHER

'Recent weather phenomena' is understood as being the weather phenomena observed at the aerodrome during the period since the last issued routine report or last hour, whichever is the shorter, but not at the time of observation.

Examples: RERA, REFZDZ, RETS

WIND SHEAR

If wind shear (WS) is reported by pilots, it will be present in the METAR.

Example, WS R36 means that windshear for runway 36 has been reported.

WS reported means indicates that at least one aircraft during the latest 60 minutes has reported wind shear during approach or departure up to approximately 1600 feet.

TREND

Trend is a short forecast given in METAR and is used to advise expected significant changes within the two hours following the observation. Only approved aerodromes are allowed to use TREND in METARs. In such cases, three keywords will be used:

NOSIG: No significant change expected within the next two hours.

TEMPO indicates that there is forecast a temporary significant change to the weather given after the TEMPO group.

BECMG (becoming) indicates at least 50% chance of a gradual transition to longer lasting significant changes from the weather in the main part of the METAR.

REMARK

RMK (remark). After the abbreviation RMK, METAR may contain useful and important information. RMK is placed in the end of the METAR.

Wind at higher levels (mountain peaks) above the runway level will always be put after RMK.

Example: RMK WIND 1200FT 12015KT

TAF

In a TAF there may be given indications for a change in the weather during the validity period of the TAF:

PROB30: 30% probability of ...

PROB40: 40% probability of ...

TEMPO followed by date and a two-digit validity time group indicates that there is forecast a temporary change to the weather given after the TEMPO group. TEMPO 1209/1215 thus means that on the 12th (day of a month) between 0900Z and 1500Z hours the weather is forecast to be.

BECMG (becoming) followed by date and a two-digit validity time group indicates at least 50% chance of a gradual transition to longer lasting changes from the weather in the main part of the TAF.

BECMG means a change in forecast to commence at date and hours and be completed by date and hours (1912/1915). Only those elements for which a change is forecast are to be given following «BECMG».

FM followed by date and a four-digit validity time, hours and minutes UTC (FM191230) is used to indicate a rapid change from the main part of the TAF. All the elements given before «FM» are to be included following «FM».