

METeorological Aerodrome Report (METAR)

METAR is a routine report containing information about the meteorological conditions at an airport. METAR messages at Polish communication airports are issued every 30 minutes (HH:00 and HH:30).

A METAR message contains:

- Message identifier
- Airport code (ICAO)
- Day and time of issuance (in UTC)
- Wind direction and speed at the surface
- Prevailing visibility
- Directional visibility (if available)
- Runway visual range (if available)
- Current weather phenomena (if present)
- Cloud cover and cloud base height (or vertical visibility, if provided)
- Air temperature and dew point temperature
- QNH pressure
- Additional information
- TREND forecast (in Poland, only for Chopin Airport in Warsaw)"

Tab. 1. METAR example

	METAR EPWA 102100Z	13005KT 100V190	1900 0600W R11/1800N	BCFG	SCT002 BKN005	07/06 Q1016	TEMPO 0800 FG=
Group number from table 2	1	2	3	4	5	7	9

Tab. 2. Detailed METAR description

	NAME OF MESSAGE ELEMENT	DESIGNATION OF MESSAGE ELEMENT	EXAMPLES
1. LOCATION INDICATOR AND TIME OF THE OBSERVATION	METAR	METeorological Aerodrome Report – a message used to transmit routine airport meteorological observations	METAR EPWA METAR EPPO
	COR	Optional notation indicating a corrected message	METAR COR EPSC
	NIL	Optional notation indicating the absence of a message	METAR EPLB 102100Z NIL=
	EPWA	Location indicator	EPWA, EPLL, EPGD, EPBY
	102100Z	Day of the month, hour and minutes of the observation and the UTC time indicator	131430Z 250030Z 030330Z
	AUTO	Automated report identifier	METAR EKRN 102100Z AUTO 13005KT

2. WIND	13005KT	Surface wind (the average direction and average wind speed from the 10-minute period preceding the observation are given): direction from which the wind is blowing (rounded to 10 degrees); wind speed; wind speed unit indicator (KT-knots).	22003KT 36012KT 36018KT
	00000KT	Silence	00000KT
	VRB02KT	Variable wind direction	VRB01KT VRB08KT
	27012G22KT	Optional group specifying the maximum wind gust: wind direction; mean wind speed; gust indicator; max poryw wiatru w KT.	22008G18KT VRB18G28KT 27020G42KT
	100V190	Additional, optional wind direction group (specifies the two extreme directions present)	16008KT 130V220 25005KT 200V270 11005KT 080V180

3. VISIBILITY	7000	Visibility (in meters), additionally includes significant weather phenomena with the visibility group, if present.	6000 8000 -RA 9999 (widzialność 10km i więcej) 9999 -SN
	1900 BR	Visibility below 5000 meters, with the requirement to report the phenomenon (in this case, mist)	3000 BR 1200 -SN BR 0500 DZ FG
	0600W	Directional changes in visibility, optionally recorded alongside prevailing visibility, are given as: visibility in meters; geographical direction	1900 0600W
	R11/1800N	Runway visual range, the following are provided: R indicator for runway visual range; runway number; runway visibility in meters; RVR past tendency (D-decreasing, U-improving, N-no change).	R11/1800N R15L/1400D R27R/1600U
	R11/P2000 R11/M0400	The P and M indicators are used in the case of fully automated observations: P – indicates that the visibility has reached the maximum value that the instrument can measure, meaning the actual visibility is greater than recorded in the message; M – indicates that the visibility has reached the minimum value that the instrument can measure, meaning the actual visibility is less than recorded in the message.	R15L/P2000 R27R/M0050

4. PHENOMENON	3000 -FZDZ BR	Significant weather phenomenon	1500 BR HZ 9999 -FZDZ
	(-)	Phenomenon intensity light	7000 -RA
	bez wskaźnika	Phenomenon intensity moderate	3000 TSRA
	(+)	Phenomenon intensity heavy	1200 +SHRA
	DZ	Drizzle	-DZ
	RA	Rain	-RA
	SN	Snow	+SNRA
	SG	Snow grains	SG
	PL	Ice pellets	-PL
	GR	Hail (Reported when diameter of largest hailstones is 5 mm or more).	+TSGR
	GS	Small hail and/or snow pellets (Reported when diameter of largest hailstones is less than 5 mm);	-TSGS
	UP	Type of precipitation unknown (in automated observations)	UPFZ
	BR	Mist (Reported when visibility is at least 1 000 m but not more than 5 000 m)	BR
	FG	Fog FG (Reported when visibility is less than 1 000 m, except when qualified by "MI", "BC", "PR" or "VC")	FG FZFG
	FU	Smoke	FU
	VA	Vulcanic ash	VA
	DU	Dust (widespread)	DU
	SA	Sand	SA
	HZ	Haze	HZ
	PO	Dust/sand whirls (dust devils)	PO
	SQ	Squall	SQ
	FC	Funnel cloud (tornado or waterspout)	FC
	SS	Sandstorm	+SS
	DS	Duststorm	DS
	MI	Shallow (Less than 2 m (6 ft) above ground level)	MIFG
	BC	Patches (Fog patches randomly covering the aerodrome)	BCFG
	PR	Partial (A substantial part of the aerodrome covered by fog while the remainder is clear)	PRFG
	DR	Low drifting (weather phenomena raised by the wind to less than 2 m (6 ft) above ground level)	DRSN, DRSA, DRDU
	BL	Blowing (weather phenomena raised by the wind to a height of 2 m (6 ft) or more above the ground)	BLSN, BLDU, BLSA
	SH	Shower	-SHRA, SHSN
	TS	Thunderstorm	TSRA, +TSGR, -TSSN, TS
	FZ	Freezing	FZFG, -FZRA, FZDZ
	VC	Vicinity (Between approximately 8 and 16 km of the aerodrome reference point)	VCTS, VCSS, VCSH, VCFG
	NSW	No significant weather (in TREND forecast)	NSW

5. CLOUD/VERTICAL VISIBILITY	SCT002 BKN005	Cloud cover is encoded by indicating the amount of sky covered by clouds using the terms FEW, SCT, BKN, OVC , and by providing the cloud base height in hundreds of feet . For convective clouds, the abbreviations TCU (Tower Cumulus) and CB (Cumulonimbus) are additionally used. If no operationally significant clouds are present, the abbreviations NSC or CAVOK are used.	SCT030 BKN001 OVC008 SCT020TCU BKN015CB SCT010 BKN020
	FEW	1-2/8 cloud amount (12,5-25%)	FEW030
	SCT	3-4/8 cloud amount (37,5%-50%)	SCT020
	BKN	5-7/8 cloud amount (62,5%-87,5%)	BKN020
	OVC	8/8 cloud amount (100%)	OVC004
	VV002	Vertical visibility is reported instead of cloud cover when the sky is not visible. The vertical visibility indicator (VV) and its value in hundreds of feet are provided	VV001 VV003

6. CAVOK/NSC/NCD	CAVOK	It applies if: - no operationally significant cloud cover is observed - no TCU (Towering Cumulus) and CB (Cumulonimbus) clouds are observed - no weather phenomena occur, and visibility is 10 km or more (9999)	METAR EPBY 111430Z 13005KT CAVOK 16/06 Q1016=
	NSC	It applies if: - no operationally significant cloud cover is observed - no TCU (Towering Cumulus) and CB (Cumulonimbus) clouds are observed - weather phenomena occur or visibility is observed to be below 10 km; (the abbreviation CAVOK cannot be used)	METAR EPGD 211800Z 15010KT 5000 BR NSC 07/06 Q1016= METAR EPSC 030230Z 24006KT 8000 NSC 12/08 Q1016=
	NCD	No Cloud Detected used in automated METAR/SPECI	METAR EPML 041530Z AUTO 24011KT 9999 NCD 09/M01 Q1023=

7. AIR TEMPERATURE AND QNH PRESSURE	07/06	Air temperature/dew point temperature . In the case of a negative temperature, it is preceded by the sign "M"	05/02 04/M02 M10/M12
	Q1016	The QNH pressure value (in hPa)	Q1023 Q0993

8. OPTIONAL GROUP (RECENT WEATHER, WIND SHEAR)	RE	An optional group that is provided if significant phenomena occurred since the issuance of the previous METAR report (within half an hour). The phenomenon is given after the indicator RE	RESHRA RETS RERA
	WS	An optional group that is encoded when wind shear occurs in the layer from the runway level to 1600 ft. The runway number is provided to specify the location of the wind shear	WS R15L WS R27 WS ALL RWY

9. TREND FORECAST	TEMPO 0800 FG=	The landing forecast TREND contains information about forecasted significant changes (or lack thereof) in meteorological elements within the next two hours from the issuance of the METAR report. In the FIR EPWW, the TREND forecast is issued only for the EPWA airport	BECMG 3000 BR OVC005=
	NOSIG	An indicator provided when no significant changes in meteorological elements are forecasted.	NOSIG=
	TEMPO	An indicator provided when temporary, short-term (up to a maximum of half the forecast validity period) significant changes in meteorological elements are forecasted, according to the values given after the indicator	TEMPO BKN010= TEMPO 5000 RA= TEMPO 26012KT=
	BECMG	An indicator provided when a permanent, significant change in meteorological elements to the values recorded after the indicator is forecasted	BECMG OVC002= BECMG 0600FG= BECMG 15006KT=
	FM	An additional, optional group specifying the exact UTC time of the beginning of the forecasted significant change in meteorological elements described in the TREND forecast	BECMG FM1620 BKN015= TEMPO FM0317 5000 RA BR= BECMG FM1215 7000 NSW=
	TL	An additional, optional group specifying the exact UTC time at which the forecasted significant change in meteorological elements described in the TREND forecast is expected to end	BECMG TL1330 BKN015= TEMPO FM0317 TL0420 5000 RA BR= BECMG FM1215 TL1330 7000 NSW=
	AT	An additional, optional group specifying the exact UTC time at which a significant, permanent change in meteorological elements described in the TREND forecast is expected to occur	BECMG AT1315 OVC002= BECMG AT0010 0600FG= BECMG AT2330 15006KT=

Base on: Annex 3 "Meteorological Service for International Air Navigation"