

**Reading METAR Code**  
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**METAR** (Meteorological Terminal Air Report) is the international standard code for hourly and special weather observations (*AMS Glossary*). Below is a sample METAR report from Saranac Lake, New York (KSLK).

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*****  
KSLK 032151Z AUTO 26004KT 4SM -RA BR FEW011 BKN022 OVC047  
16/15 A2978 RMK AO2 RAE02B30 SLP082 60013 T01610150 53002=  
*****
```

**KSLK**: Station Identifier, where the first letter represents a country, or group of countries (i.e., **K** = lower 48 U.S., **M** = Mexico). The next three letters identify the airport location (**SLK** = Saranac Lake, NY).

**032151Z**: Time of METAR issuance (ddhhmm). All times in UTC (GMT, or Z).  
032151Z = 21:51 UTC on the 3rd of the month.

**AUTO**: Denotes that there was no human oversight. In this space, "**COR**" can also appear, which indicates a corrected METAR.

**26004KT**: Wind in knots (3 digit direction, 2-3 digit speed).  
1 knot = 1.1508 mph.

Direction is in degrees, where 360 is northerly wind (from the north), 180 is southerly, 90 is easterly, and 270 is westerly.

26004KT = 4 knot wind at 260°.

If there's a gust, then this would appear as something like 24009G19KT, a 9 kt wind with a gust of 19 kts.

**4SM**: Visibility, in statute miles and fractions. Examples: 4SM, 3/4SM, 10SM, 1 1/2SM. Values less than 1/4 SM are written M1/4SM.

**-RA BR**: Significant weather present (see table of codes for observed weather). -RA BR = Light rain and mist. Note that for station models, the most dominant, or simply the first, weather (obscuration) gets plotted.

**FEW011 BKN022 OVC047**: Cloud cover, height and type.

SKC or CLR: Sky clear  
FEW: Few, 1/8-2/8 of sky covered  
SCT: Scattered, 3/8-4/8 of sky covered  
BKN: Broken, 5/8-7/8 of sky covered  
OVC: Sky completely covered

Three digits represent the height of the cloud layer in hundreds of feet (FEW011 = Few clouds at 1,100 feet. OVC047 = Overcast at 4,700 feet.)

For a weather station model, fill in the sky cover as the greatest sky cover in a set. For the example above, the sky cover would be filled in as overcast (8/8).

The following can also appear in the cloud section of a METAR, though these are more commonly found in the remarks section (later):

TCU: Towering Cumulus

CB: Cumulonimbus

VV###: Vertical visibility (for an obscured sky cover). VV003 = Vertical visibility of only 300 ft.

**16/15:** Temperature and dew point temperature in degrees Celsius, rounded to the nearest degree. First number is temperature, second number is dewpoint. The letter M indicates negative values (M04/M08 = Temp. of -4, Dewpoint of -8).

**A2978:** Altimeter setting (based on "standard atmosphere"). In inches of mercury, with decimal out to the hundredths (A2978 = 29.78 in Hg)

**RMK:** Denotes that METAR "remarks" will follow. We'll take a look at a few important RMK variables, and examine others later.

**SLP082:** Sea level pressure (in millibars, or hectopascals) with hundreds place missing, and a decimal out to the tenths.

Since sea level pressure will (almost) always be near 1000 mb, we can easily figure out the missing information. If the three digits after SLP are <500, add a 10. If they are >500, add a 9:

SLP082 = 1008.2 mb

SLP954 = 995.4 mb

SLP716 = 971.6 mb

SLP365 = 1036.5 mb

**T01610150:** Temperature and dew point out to the nearest tenth of a degree Celsius. The first four integers are temperature, and the next four are dewpoint.

T01610150: Temp = 16.1° C, Dew point = 15.0° C.

T02330094: Temp = 23.3° C, Dew point = 9.4° C.

If a value is negative, a "1" will appear before the value, as in the example below:

T11061189: Temp = -10.6° C, Dew point = -18.9° C.

**53002:** 3-hr Pressure Tendency. 5 tells us we are about to read pressure tendency information. The next digit, in this case a 3, tells us how the pressure is trending. Refer to the pressure tendency symbols in the station model packet. The following three digits describe the amount the pressure has risen or fallen in the past three hours, with a missing tenths place decimal.

53002: In the past three hours, the pressure fell before a greater rise. The total rise was 0.2 mb.

Table of codes for observed weather

Weather phenomena:

RA	Rain	SN	Snow	SG	Snow Grains
DZ	Drizzle	IC	Ice Crystals	PL	Ice pellets (sleet)
GS	Small hail	GR	Hail	UP	Unknown precipitation

Obscurations to visibility:

BR	Mist ( $\geq 5/8$ mi)	FG	Fog ( $< 5/8$ mi)
FU	Smoke	VA	Volcanic Ash
SA	Sand	HZ	Haze
PY	Spray	DU	Widespread Dust

Other:

SQ	Squall (strong wind)	SS	Sandstorm
DS	Duststorm	PO	Dust/sand whirls
FC	Funnel Cloud	FC+	Tornado/waterspout

Qualifiers (for RA, DZ, SN, PL):

- Light  
(No sign) Moderate  
+ Heavy  
VC Vicinity

Examples:

+RA Heavy Rain  
-DZ Light Drizzle  
SN Moderate Snow  
VCTS Thunderstorm in the vicinity (5-10 mi from observation)

Other Descriptors:

MI	Shallow	BC	Patches	PR	Partial
TS	Thunderstorm	BL	Blowing	SH	Showers
DR	Drifting	FZ	Freezing		

Examples:

BCFG Patchy fog  
+TSRA Thunderstorm with heavy rain  
BLSN Blowing snow  
SHRA Moderate rain showers  
TSRAGR Thunderstorm with moderate rain and hail

ATM 209 – METAR Plotting Worksheet #1



KALB 090851Z 27007KT 10SM FEW021 SCT041 BKN050 15/12 A2973 RMK AO2  
SLP068 BKN V SCT T01500117 51007=



KSAT 071753Z 07030G45KT 1/2SM R12R/2200V2800FT +RA FG BKN008 BKN014 OVC021  
23/23 A2958 RMK AO2 PK WND 07045/1752 SLP999 P0124 60241 T02330233 10239  
20228 58077=



KGRK 080555Z 12018G30KT 1 1/2SM TSRA BR SCT004 OVC006 25/23 A2979 RMK PK  
WND 12034/25 SLP965 60490 50017=



PABR 222053Z 00000KT 10SM CLR M51/M60 A3027 RMK AO2 SLP219 T15111600 51010=



KLBL 151455Z 20023G31KT 1 1/4SM BLDU FEW013 38/M03 A2996 RMK AO2 SLP043  
T03781028 56030=

## ATM 209 METAR Practice

KSIY 141453Z AUTO 04003KT 10SM OVC075 14/06 A2996 RMK AO2 SLP141  
T01440061  
53018 \$=

KSDB 141452Z AUTO 22007KT M1/4SM FG VV001 09/09 A3004 RMK AO2 SLP098  
T00940094 53014 TSNO=

KGKY 141453Z 35012KT 3SM -RA BR OVC004 21/19 A2985 RMK AO2 SLP102 P0002  
60008 T02110194 53009=

CYLT 141500Z 22022G27KT 15SM DRSN FEW200 M03/M09 A2989 RMK CI1 SLP124=

KSYR 121054Z 31009KT 1/4SM +SN BR VV001 00/M01 A3004 RMK A02 SLP171  
T00001011 53030=

KSPS 141452Z 02016KT 8SM -DZ OVC009 19/18 A2995 RMK AO2 DZB43 CIG  
007V012 SLP131 P0005 60005 T01890178 53007=

KMWN 140853Z 30048G55KT 1/16SM FG VV001 02/02 RMK MOON DMLY VSBL

CYUB 141500Z 33017G23KT 10SM FZRA BKN005 OVC090 M01/M02 A2981 RMK  
SC7AS1 CIG RAG SLP095=

PHJR 141453Z AUTO 00000KT 10SM CLR 22/17 A2997 RMK AO2 SLP156 T02170172  
56008 TSNO=

MMCE 141448Z 10010KT 10SM FEW015 SCT120 BKN210 30/25 A2989 RMK SLP121  
52021 923 8/235=

KRDR 121155Z 01008KT 2SM FU FEW006 BKN110 M23/M23 A3025 RMK SLP277  
4/003 8/570 53007=

KMTP 271854Z AUTO 30013G20KT 4SM -SHRA 05/M02 A2990 RMK A02 SLP125  
T00501017 10056 20050 51041 TSNO=

KGCN 011653Z 00000KT 5SM HZ CLR M04/M08 A3014 RMK A02 SLP198 T10441078  
57001=

KEYW 182253Z 14082G103KT 1/2 SM +RA OVC021 A2887 RMK A02 SLP546 57122=

KBGM 141453Z 28006KT 10SM SCT012 17/13 A3003 RMK AO2 SLP165 T01720133  
51005=