

Temperature indices				
No	Index	Unit	CF-standard name	Description
1	FD	No.	frost_days_index_per_time_period	Frost days index is the number of days where minimum of temperature is below 0 degree Celsius. The time period should be defined by the bounds of the time coordinate.
2	SU	No.	summer_days_index_per_time_period	Summer days index is the number of days where maximum of temperature is above 25 degree Celsius. The time period should be defined by the bounds of the time coordinate.
3	CFD	No.	consecutive_frost_days_index_per_time_period	Consecutive frost days index is the greatest number of consecutive frost days in a given time period. Frost days is the number of days where minimum of temperature is below 0 degree Celsius. The time period should be defined by the bounds of the time coordinate.
4	CSU	No.	consecutive_summer_days_index_per_time_period	Consecutive summer days index is the greatest number of consecutive summer days in a given time period. Summer days is the number of days where maximum of temperature is above 25 degree Celsius. The time period should be defined by the bounds of the time coordinate.
5	HD	K	heating_degree_days_per_time_period	Heating degree days relates the outside temperature with the room temperature during the heating period. It is the sum of the difference between room temperature X and daily mean temperature Y on days where Y is below a given constant A. X is 20 degree Celsius and A is 15 degree Celsius according to VDI guidelines. According to ECAD both X and A are 17 degree Celsius. The time period should be defined by the bounds of the time coordinate.
6	ID	No.	ice_days_index_per_time_period	Ice days index is the number of days where maximum of temperature is below 0 degree Celsius. The time period should be defined by the bounds of the time coordinate.
7	TR	No.	tropical_nights_index_per_time_period	Tropical nights index is the number of days where minimum of temperature is above 20 degree Celsius. The time period should be defined by the bounds of the time coordinate.
8	TN10p	percent	cold_nights_percent_wrt_10th_percentile_of_reference_period	This is the percent of time per time period where daily minimum temperature is below a reference value. The reference value is calculated as the 10 <sup>th</sup> percentile of daily minimum temperatures of a five day window centred on each calendar day of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the variable attribute e.g. 1961-

				1990.
9	TX10p	percent	very_cold_days_percent_wrt_10th_percentile_of_reference_period	This is the percent of time per time period where daily maximum temperature is below a reference value. The reference value is calculated as the 10 <sup>th</sup> percentile of daily maximum temperatures of a five day window centred on each calendar day of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the variable attribute e.g. 1961-1990.
10	TG10p	percent	cold_days_percent_wrt_10th_percentile_of_reference_period	This is the percent of time per time period where daily mean temperature is below a reference value. The reference value is calculated as the 10 <sup>th</sup> percentile of daily mean temperatures of a five day window centred on each calendar day of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the variable attribute e.g. 1961-1990.
11	TN90p	percent	warm_nights_percent_wrt_90th_percentile_of_reference_period	This is the percent of time per time period where daily minimum temperature is above a reference value. The reference value is calculated as the 90 <sup>th</sup> percentile of daily minimum temperatures of a five day window centred on each calendar day of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the variable attribute e.g. 1961-1990.
12	TX90p	percent	very_warm_days_percent_wrt_90th_percentile_of_reference_period	This is the percent of time per time period where daily maximum temperature is above a reference value. The reference value is calculated as the 90 <sup>th</sup> percentile of daily maximum temperatures of a five day window centred on each calendar day of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the variable attribute e.g. 1961-1990.
13	TG90p	percent	warm_days_percent_wrt_90th_percentile_of_reference_period	This is the percent of time per time period where daily mean temperature is above a reference value. The reference value is calculated as the 90 <sup>th</sup> percentile of daily mean temperatures of a five day window centred on each calendar day of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the variable attribute e.g. 1961-1990.
14	HWDI	1) No. 2) No.	1) heat_wave_duration_index_wrt_mean_of_reference_period 2) heat_waves_per_time_period	1) This is the number of days per time period where in intervals of at least 6 consecutive days the daily maximum temperature is more than 5 degrees above a reference value. The reference value

				<p>is calculated as the mean of maximum temperatures of a five day window centred on each calendar day of a given 30 year climate reference period.</p> <p>2) Number of heat waves per time period.</p> <p>The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the variable attribute e.g. 1961-1990.</p>
15	CWDI	<p>1) No.</p> <p>2) No.</p>	<p>1) cold_wave_duration_index_wrt_mean_of_reference_period</p> <p>2) cold_waves_per_time_period</p>	<p>1) This is the number of days per time period where in intervals of at least 6 consecutive days the daily minimum temperature is more than 5 degrees below a reference value. The reference value is calculated as the mean of minimum temperatures of a five day window centred on each calendar day of a given 30 year climate reference period.</p> <p>2) Number of cold waves per time period.</p> <p>The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the variable attribute e.g. 1961-1990.</p>
16	HWFI	<p>1) No.</p> <p>2) No.</p>	<p>1)warm_spell_days_index_wrt_90<sup>th</sup>_percentile_of_reference_period</p> <p>2) warm_spell_periods_per_time_period</p>	<p>1) This is the number of days per time period where in intervals of at least 6 consecutive days the daily mean temperature is above a reference value. The reference value is calculated as the 90<sup>th</sup> percentile of daily mean temperatures of a five day window centred on each calendar day of a given 30 year climate reference period.</p> <p>2) Number of warm spell periods per time period.</p> <p>The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the variable attribute e.g. 1961-1990.</p>
17	CWFI	<p>1) No.</p> <p>2) No.</p>	<p>1)cold_spell_days_index_wrt_10th_percentile_of_reference_period</p> <p>2) cold_spell_periods_per_time_period</p>	<p>1) This is the number of days per time period where in intervals of at least 6 consecutive days the daily mean temperature is below a reference value. The reference value is calculated as the 10<sup>th</sup> percentile of daily mean temperatures of a five day window centred on each calendar day of a given 30 year climate reference period.</p> <p>2) Number of cold spell periods per time period.</p> <p>The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by the</p>

				variable attribute e.g. 1961-1990.
18	ETR	K	intra_period_extreme_temperature_range	Difference between the absolute extreme temperatures in observation period. The time period should be defined by the bounds of the time coordinate.
19	GSL	No. No.	1) growing_season_length_index 2) Day_of_year_of_growing_season_start	1) Counted are the number of days per calendar year between the first occurrence of at least 6 consecutive days where the daily mean temperature is above 5 degree Celsius and the first occurrence of at least 6 consecutive days after 1 <sup>st</sup> of July where the daily mean temperature is below 5 degree Celsius. 2) Day of year of growing season start. The time period should be defined by the bounds of the time coordinate.

Precipitation indices				
No	Index	unit	CF-standard name	Description
1	R10mm	No.	heavy_precipitation_days_index_per_time_period	Heavy precipitation days is the number of days per time period with daily precipitation sum exceeding 10mm. The time period should be defined by the bounds of the time coordinate.
2	R20mm	No.	very_heavy_precipitation_days_index_per_time_period	Very heavy precipitation days is the number of days with daily precipitation sum exceeding 20mm. The time period should be defined by the bounds of the time coordinate.
3	RX1day	mm per day or kg/m <sup>2</sup> per day	highest_one_day_precipitation_amount_per_time_period	highest one day precipitation is the maximum of one day precipitation amount in a given time period. The time period should be defined by the bounds of the time coordinate.
4	RX5day	1) mm per 5day or kg/m <sup>2</sup> per 5day 2) No.	1) highest_five_day_precipitation_amount_per_time_period 2) number_of_5day_heavy_precipitation_periods_per_time_period	1) highest precipitation amount for five day interval (including the calendar day as the last day) 2) Number of 5day periods in given time period with precipitation amount exceeding 50mm/5 days The time period should be defined by the bounds of the time coordinate.
5	CDD	1) No. 2) No.	1) consecutive_dry_days_index_per_time_period 2) number_of_cdd_periods_with_more_than_5days_per_time_period	1) Consecutive dry days is the greatest number of consecutive days per time period with daily precipitation amount below 1mm. 2) Number of cdd periods in given time period with more than 5 days. The time period should be defined by the bounds of the time coordinate.
6	CWD	1) No. 2) No.	1) consecutive_wet_days_index_per_time_period 2) number_of_cwd_periods_with_more_than_5days_per_time_period	1) Consecutive wet days is the greatest number of consecutive days per time period with daily precipitation above 1mm. 2) Number of cwd periods in given time period with more than 5 days.

				The time period should be defined by the bounds of the time coordinate.
7	R75p	Percent	moderate_wet_days_wrt_75th_percentile_of_reference_period	This is the percent of time per time period of wet days (daily sum at least 1mm/day) where daily precipitation amount of a wet day is above a reference value. The reference value is calculated as the 75 <sup>th</sup> percentile of all wet days of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by variable attribute e.g. 1961-1990.
8	R95p	Percent	very_wet_days_wrt_95th_percentile_of_reference_period	This is the percent of time per time period of wet days (daily sum at least 1mm/day) where daily precipitation amount of a wet day is above a reference value. The reference value is calculated as the 95 <sup>th</sup> percentile of all wet days of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by variable attribute e.g. 1961-1990.
9	R99p	Percent	extremely_wet_days_wrt_99th_percentile_of_reference_period	This is the percent of time per time period of wet days (daily sum at least 1mm/day) where daily precipitation amount of a wet day is above a reference value. The reference value is calculated as the 99 <sup>th</sup> percentile of all wet days of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by variable attribute e.g. 1961-1990.
10	R90p	Percent	wet_days_wrt_90th_percentile_of_reference_period	This is the percent of time per time period of wet days (daily sum at least 1mm/day) where daily precipitation amount of a wet day is above a reference value. The reference value is calculated as the 90 <sup>th</sup> percentile of all wet days of a given 30 year climate reference period. The time period should be defined by the bounds of the time coordinate. The climate reference period should be defined by variable attribute e.g. 1961-1990.
11	R75pTOT	Percent	precipitation_percent_due_to_R75p_days	percentage of total precipitation amount per time period due to moderate_wet_days_wrt_75th_percentile_of_reference_period. The time period should be defined by the bounds of the time coordinate.
12	R95pTOT	Percent	precipitation_percent_due_to_R95p_days	percentage of total precipitation amount per time period due to very_wet_days_wrt_95th_percentile_of_reference_period. The time period should be defined by the bounds of the time coordinate.
13	R99pTOT	Percent	precipitation_percent_due_to_R99p_days	percentage of total precipitation amount per time period due to extremely_wet_days_wrt_99th_percentile_of_reference_period. The time period should be defined by the bounds of the time coordinate.
14	R90pTOT	Percent	precipitation_percent_due_to_R90p_days	percentage of total precipitation amount per time period due to wet_days_wrt_90th_percentile_of_reference_period. The time period should be defined by the bounds of the time coordinate.
15	SDII	mm or kg/m <sup>2</sup>	Simple_daily_intensity_index_per_time_period	Simple daily intensity index is the mean of precipitation amount on wet days. A wet day is a day with precipitation sum exceeding 1mm. The time period

				should be defined by the bounds of the time coordinate.
16	R1mm	No.	wet_days_index_per_time_period	Wet days index is the number of days per time period with daily precipitation exceeding 1mm. The time period should be defined by the bounds of the time coordinate.

Other indices				
No	Index	unit	CF-standard name	Description
1	WCT	Celsius	wind_chill_temperature	<p>Windchill temperature describes the fact that low temperatures are felt to be even lower in case of wind. It is based on the rate of heat loss from exposed skin caused by wind and cold. It is calculated according to the empirical formula: <math>33 + (T - 33) * (0,478 + 0,237 * (\sqrt{ff^{3,6}} - 0,0124 * ff^{3,6}))</math></p> <p>T = air temperature in degree Celsius, ff = 10m wind speed in m/s</p> <p>Windchill temperature is only defined for temperatures at or below 33 degree Celsius and wind speeds above 1.39 m/s. It is mainly used for freezing temperatures.</p> <p>The time period should be defined by the bounds of the time coordinate.</p>
2	HI	Celsius	hum_index	<p>Humindex describes empirically in units of temperature how the temperature and humidity influence the wellness of a human being.</p> <p><math>HI = T + 5/9 * (A - 10)</math></p> <p>with <math>A = e * (6.112 * 10^{((7.5 * T)/(237.7 + T))} * R/100)</math></p> <p>T = air temperature in degree Celsius, R = relative humidity in %, e= vapour pressure.</p> <p>Humindex is only defined for temperatures of at least 26 degree Celsius and relative humidity of at least 40 degree Celsius.</p> <p>The time period should be defined by the bounds of the time coordinate.</p>
3	FD_NS	No.	frost_days_where_no_snow_index_per_time_period	<p>Frost days where no snow index is the number of days without snowcover and where minimum of temperature is below 0 degree Celsius. The time period should be defined by the bounds of the time coordinate.</p>
4	STR_BR	1) No. 2) No.	1) strong_breeze_days_index_per_time_period 2) consecutive_strong_breeze_days_index_per_time_period	<p>1) Strong breeze days index is the number of days per time period where maximum wind_speed is above 10,5 m/s</p> <p>2) Greatest number of consecutive strong breeze days per time period.</p> <p>The time period should be defined by the bounds of the time coordinate.</p>
5	STR_GA	1) No. 2) No.	1) strong_gale_days_index_per_time_period 2) consecutive_strong_gale_days_index_per_time_period	<p>1) Strong gale days index is the number of days per time period where maximum wind_speed is above 20,5 m/s</p> <p>2) Greatest number of consecutive strong gale days per time period.</p> <p>The time period should be defined by the bounds of the time coordinate.</p>
6	HURR	1) No. 2) No.	1) hurricane_days_index_per_time_period 2) consecutive_hurricane_days_index_per_time_period	<p>1) Hurricane days index is the number of days per time period where maximum wind_speed is above 32,5 m/s</p> <p>2) Greatest number of consecutive hurricane days per time period.</p> <p>The time period should be defined by the bounds of the time coordinate.</p>