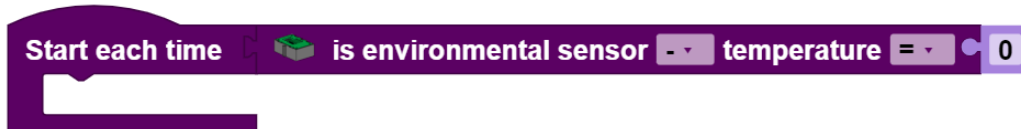


# I2C

The I2C sensors described in this section are connected to the TXT 4.0 Controller using a suitable ribbon cable.

## The Start each time block

The **Start each time block** offers the option of running a program when a condition is fulfilled. Therefore, it works similar to a case distinction, but runs not only one time, but rather every time the condition is fulfilled during the entire course of the program. The **Start each time block**:



Is an abbreviation for the following construct:



You can insert all conditions from this category into the I2C category in the **Start each time block**.

**Note:** The program section in the **Start each time block** should be kept short, and should not contain any blocking calls or endless loops, so that this part of the program can be processed quickly.

## Combi sensor



The combi sensor combines the three functions of an acceleration sensor, gyroscope, and compass sensor in one component.

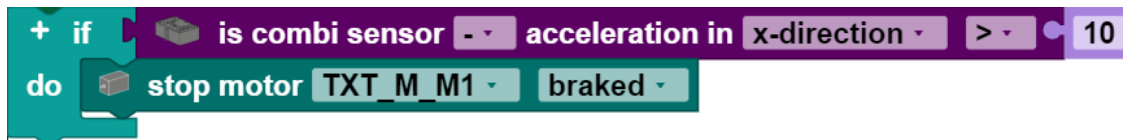
## Acceleration sensor

## Call

Use **get combi sensor acceleration in []** to obtain the acceleration in one spatial direction. You can select the desired spatial direction using the drop down menu (small triangle). The acceleration is indicated in g.

## Query

Use the **combi sensor acceleration in [] [] ...** block to query whether you are measuring a certain acceleration. You can use the drop down menu (small triangle) to select how the acceleration should be compared to the entered value (<, ?, =, ?, ?, >) and what spatial direction should be queried. The comparison value is entered in the number field at the end of the block. This block can be used as a condition. In the example, the motor is stopped when the acceleration in the x direction is greater than 10.



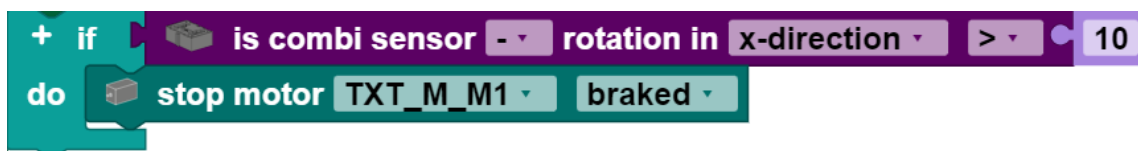
## Gyroscope

### Call

Use **get combi sensor rotation in []** to obtain the rotation in one spatial direction. You can select the desired spatial direction using the drop down menu (small triangle). The rotation is indicated in °/s.

### Query

Use the **combi sensor rotation in [] [] ...** block to query whether you are measuring a certain angular speed. You can use the drop down menu (small triangle) to select how the rotation should be compared to the entered value (<, ?, =, ?, ?, >) and what spatial direction should be queried. The comparison value is entered in the number field at the end of the block. This block can be used as a condition. In the example, the motor is stopped when the rotation in the x direction is greater than 10.



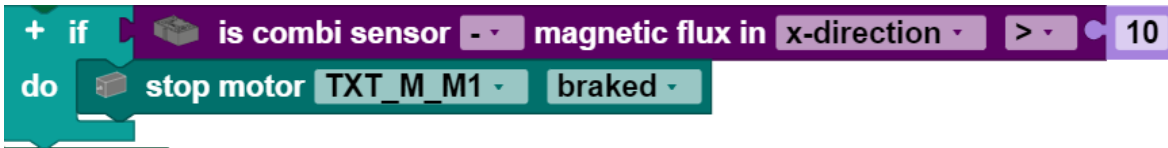
## Compass sensor

### Call

Use **get combi sensor magnetic flux in []** to obtain the magnetic flux in one spatial direction. You can select the desired spatial direction using the drop down menu (small triangle). The magnetic flux is indicated in ?T.

### Query

Use the **combi sensor magnetic flux in [] [] ...** block to query whether you are measuring a certain magnetic flux. You can use the drop down menu (small triangle) to select how the magnetic flux should be compared to the entered value (<, ?, =, ?, ?, >) and what spatial direction should be queried. The comparison value is entered in the number field at the end of the block. This block can be used as a condition. In the example, the motor is stopped when the magnetic flux in the x direction is greater than 10.



# Environmental sensor



The environmental sensor combines the four functions of an air quality sensor, humidity sensor, barometer, and thermometer in one component.

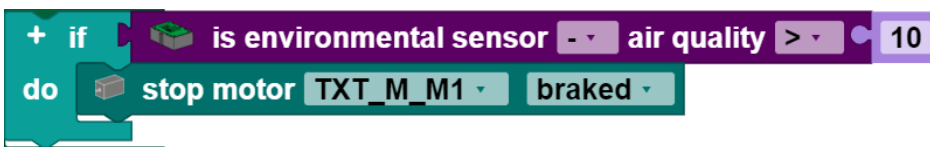
## Air quality sensor

### Call

You can use the **get environmental sensor air quality as []** block to measure the air quality. You can use the drop down menu (small triangle) to select whether the air quality should be returned as a numerical value (from 0 to 500) or as a text.

### Query

Use the **environmental sensor air quality [] ...** block to query whether you are measuring a certain air quality. You can use the drop down menu (small triangle) to select how the air quality should be compared to the entered value (<, ?, =, ?, ?, >) . The comparison value is entered in the number field at the end of the block. This block can be used as a condition. In the example, the motor is stopped when the air quality is greater than 10.



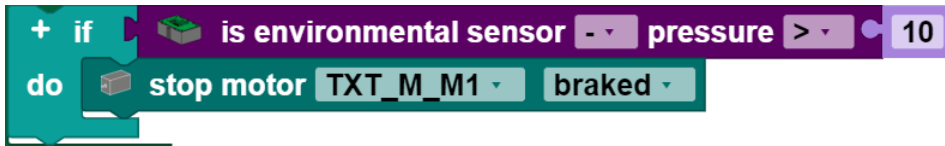
## Barometer

### Call

You can use the **get environmental sensor air pressure block** to measure the air pressure.

### Query

Use the **environmental sensor air pressure [] ...** block to query whether you are measuring a certain air pressure. You can use the drop down menu (small triangle) to select how the air pressure should be compared to the entered value (<, ?, =, ?, ?, >) . The comparison value is entered in the number field at the end of the block. This block can be used as a condition. In the example, the motor is stopped when the air pressure is greater than 10.



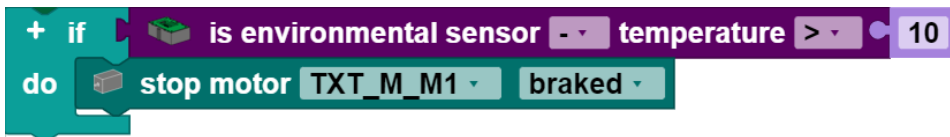
## Thermometer

### Call

You can use the **get environmental sensor temperature** block to measure the temperature.

### Query

Use the **environmental sensor temperature** ☐ ... ☐ ... block to query whether you are measuring a certain temperature. You can use the drop down menu (small triangle) to select how the temperature should be compared to the entered value (<, ?, =, ?, ?, >) . The comparison value is entered in the number field at the end of the block. This block can be used as a condition. In the example, the motor is stopped when the temperature is greater than 10.



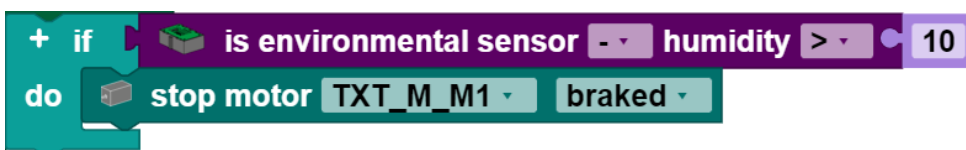
## Humidity sensor

### Call

You can use the **get environmental sensor humidity** block to measure the humidity.

### Query

Use the **environmental sensor humidity** ☐ ... ☐ ... block to query whether you are measuring a certain humidity. You can use the drop down menu (small triangle) to select how the humidity should be compared to the entered value (<, ?, =, ?, ?, >) . The comparison value is entered in the number field at the end of the block. This block can be used as a condition. In the example, the motor is stopped when the humidity is greater than 10.



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