## 1 Introduction - Tork EasyCube™

Tork EasyCube delivers actionable washroom insights through a web user interface.

The service consists of Tork dispensers equipped with sensors that communicate the dispenser status and refill needs to a cloud based system, made available for different roles such as a facility manager or the cleaning staff.

The system as well includes visitor registration units that can count people passing into a washroom area.
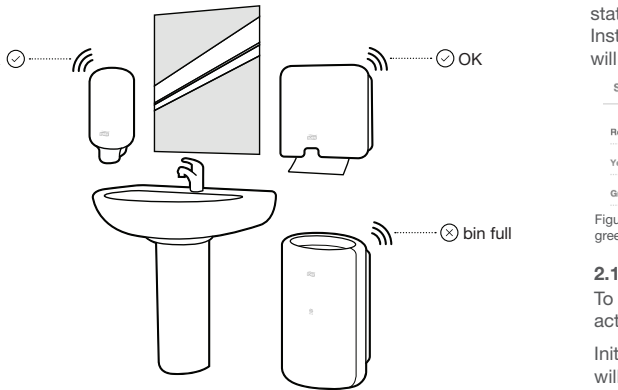


Figure 1. Each dispenser is wirelessly connected to an information system that can be utilized by both a Facility Manager as well as cleaning staff, in order to facilitate more efficient work planning.

## 2 Get an instant overview

At any point in time the system will provide a quick overview of the status of the installed dispensers through a web based dashboard. Instantly the user of the web application, for example a facility manager, will be able to spot if dispensers are about to become empty.
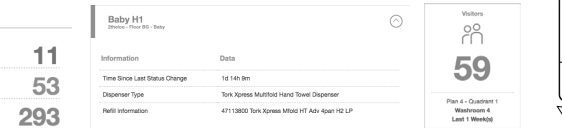


Figure 2. Status red indicates very soon out-of-paper and Yellow indicates a half-full dispenser. Status green needs no attention. Add a dashboard measurement of a critical location to track its usage.

## 2.1 Before you get started

To be able to get started with the Tork EasyCube System there are some activities that need to be performed.

Initially the customer together with SCA will determine which washrooms will be included and the required number of Data Collection Units (DCUs) to support these locations. The number of DCUs required for a location depends upon the distribution of washrooms within the building and also the construction material of the building walls.

Installation of the system is done by an external professional installation company.

## 3 Technical components used in Tork EasyCube

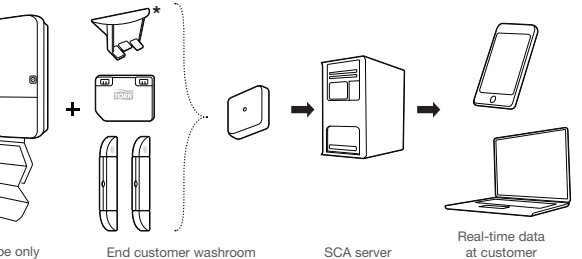The different components used for the Tork EasyCube solution:



* Europe only          End customer washroom          SCA server          Real-time data at customer

Figure 3. The different components used for the Tork EasyCube solution

## 3.1 Sensors

A selected range of Tork dispensers is prepared to be equipped with sensor technologies to optimize the function, depending on the field of use. There are three different sensor technologies used within Tork EasyCube:

- SCU (Sensor Communication Unit) which is used to measure refill levels in Tork dispensers
- Dispensers with embedded sensors. The dispenser contains a sensor from factory.

All sensors communicate to the Data Collection Unit via the radio frequency 2.4GHz.

## 3.2 Tork EasyCube Sensor Communication Unit (SCU)

The SCU unit is added to a special slot within the dispensers. The refill levels reported by the SCU are visualized in the Tork EasyCube system by using colors.

- Green: indicates that the dispenser still have enough paper or soap remaining.
- Orange: indicates that it is possible to refill the dispenser.
- Red: indicates that the dispenser is almost empty.

Each sensor is operated by an embedded battery.

## 3.3 Dispensers with embedded sensors

Tork dispensers such as Tork Foam Soap Dispenser with Intuition sensor™ do not need an additional Tork EasyCube sensor. Instead, they have an additional radio component within the cassette which forwards information to the DCU via 2.4 GHz radio.

The system runs on the same battery as the dispenser, no additional battery is needed.



Figure 4. Sensor card found inside a dispenser



Figure 5. The battery operated, touch free Tork Foam Soap Dispensers

## 3.4 Tork EasyCube Visitor Registration Unit (VRU)

The VRU counts the number of people going in and out of a room. The number of visitors can be used as a guideline for when washrooms need to be cleaned.

The sensor has a flexible measurement direction, just open the two end pieces and rotate the center unit 90° to change direction. Place one sender and one receiver at the door frame to the entry of the room. The sensor has a range of up to 1.7 meters / 5.5 feet. A configurable response time makes the sensor useful in many different environments and applications.

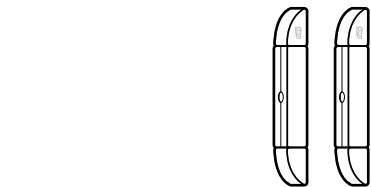Each sensor is operated by an embedded battery that will last for 5 years.



Figure 6. Visitor registration unit

## 3.5 Tork EasyCube Data Collection Unit (DCU)

The Data Collection Unit, DCU, collects the data from the sensors (SCUs and VRUs) and sends information to the Tork EasyCube system. The DCU acts as a communication gateway for all the sensors that have been paired with it. The unit collects and processes incoming sensor data.

The DCU has a DC adapter and it has battery backup to ensure performance during power failure.

The DCU has a built-in GSM/GPRS modem used to connect to Internet. No access to local physical networks is needed. Communication between sensors and the DCU is based on SCA proprietary protocol.



Figure 7. DCU gateway

## 3.6 Several DCUs

In order to cover larger areas, several DCUs may be needed. As each DCU has communication capabilities with the back end server, they can be installed over a large area with no requirements of in-between communication.
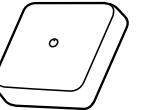
Version A

## 4 Wireless Communication

There are different sensors in the Tork EasyCube system, but they all communicate in the same manner.



Visitor Registration Unit

2.4Ghz Radio

Server/Gateway

GSM

Sensor Communication Unit

2.4Ghz Radio

Data Collection Unit

Internet Connection

User Interface
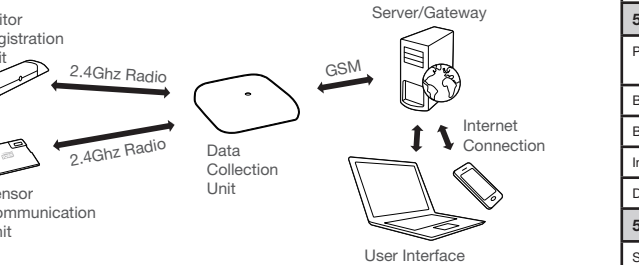
The sensors send data to the DCU with a default defined time interval. The DCU is configured for Tork dispensers with defined status levels, e.g. Almost Empty, Time for Refill and Full . If a change in status occurs, the DCU forwards the information to the back-end server. It is in the back-end where all data is processed and aggregated to useful information. The customer is provided access to the Tork EasyCube web application for management and analysis of collected information.

All configurations and settings to the system are done during installation.

| 5.1 Radio | |
|---|---|
| Frequenzy | 2.405 GHz |
| Radio Standard | IEEE 802.15.4 |
| **5.2 DCU** | |
| Power adapter | Input: 90-264V AC, Output: 5V DC, 1.2A |
| Battery | 3.6V, 4.4Ah |
| Battery backup | Up to 10 hours |
| Internet connection | GPRS |
| Dimensions | 188 x 188 x 33mm / 7.4 x 7.4 x 1.3 inches |
| **5.3 VRU** | |
| Sensors | Infrared (IR) |
| Battery | 3.6V, 2.1Ah |
| Dimensions | 158 x 23 x 23mm / 6.2 x 0.9 x 0.9 inches |
| **5.2 SCU** | |
| Sensors | Light |
| Battery | 3V, 500mAh |
| Dimensions | 62 x 50 x 6mm / 2.4 x 2.0 x 0.2 inches |

## Warnings

• **Only use the power supply provided with the Tork EasyCube™.**

• **If any of the contents of the Tork EasyCube™ appear to be damaged or broken, contact SCA Customer Service at 1 866 722 8675, for North America. For Europe please contact your SCA representative**

**Important:**
Save this instruction manual for future reference.
If any changes to the installation are necessary, please contact SCA for support. No modification of this equipment is allowed. Tork EasyCube™ must be returned to SCA after the end of its service life.

**FCC:**
Changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesined operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against armful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, the user is encouraged to contact SCA for support.

**IC:**
This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:
(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesined operation of the device.

Industry Canada ICES-003 Compliance Label:
CAN ICES-3 (A)/NMB-3(A)

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio
exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
1) l'appareil ne doit pas produire de brouillage;
2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est
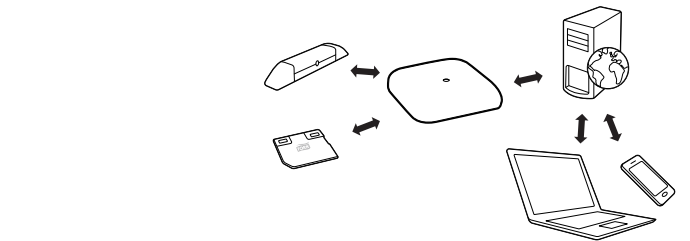susceptible d'en compromettre le fonctionnement.

Industrie Canada ICES-003 Étiquette de conformité:
CAN ICES-3 (A) / NMB-3 (A).

Computer, server device or smartphone not included.

The Tork EasyCube application can be accessed from any available connected device.

Devices shown are not the actual size.

# Tork EasyCube™
## User Manual