

# Installation Instructions for the TBSA/TBSB/TCSA/TCSAS Damper GOLD/SILVER C/COMPACT

## 1. General

TBSA/TBSB/TCSA/TCSAS Dampers can be used as shut-off dampers or boosting dampers. The larger dampers with modulating damper actuator (GOLD/SILVER C sizes 12 – 120) can also be used for other applications, such as an outdoor air damper for the ReCO<sub>2</sub> control function.

## 2. Maintenance

Inspect the damper for correct operation, inspect the seals and clean the damper if necessary at least twice a year.

## 3. Installation

For the installation of dampers in duct systems, see the individual instructions entitled: Installation Instructions for Duct Accessories.

## 4. Technical Data

### Actuator, GCA121.1E/ GCA, 161.1E/GCA 321.1E

Permissible ambient air temperature range -32 to +50°C  
Enclosure class IP 54

### Actuator, GMA121.1E/GMA 161.1E

Permissible ambient air temperature range -32 to +55°C  
Enclosure class IP 54

### Actuator, LM 230-F/LM24 A-F

Permissible ambient air temperature range -30 to +50°C  
Enclosure class IP 54

### Actuator, NM 230/NM 24A

Permissible ambient air temperature range -30 to +50°C  
Enclosure class IP 54

### Actuator, SM 230 A/SM 24A

Permissible ambient air temperature range -30 to +50°C  
Enclosure class IP 54



TBSA



TBSB



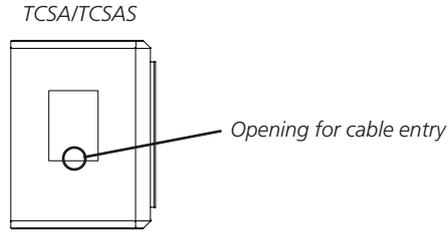
TCSA/TCSAS

## 5. Electrical Connections

The electrical connections are to be wired by a qualified electrician in accordance with local electrical safety regulations.

TBSA/TBSB: The last digit in the damper specification denotes the type of damper.

TCSA/TCSAS: The type of damper is specified in plain text (Swedish/English) on the type identification plate. An opening for cable entry is provided on the lower edge of the cover panel in front of the damper actuator. See illustration.



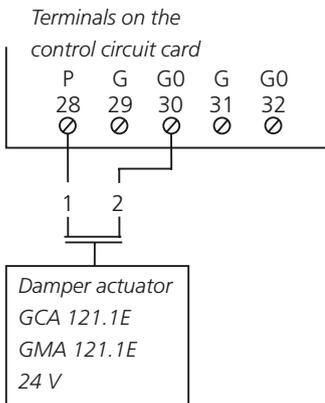
### GOLD RX/PX/CX/SD, version E/F

**N.B.! Damper actuators are rated for 24 V AC. Therefore always check the type and rating of the damper actuator before wiring it to a power supply!**

#### TBSA/B with spring return (TBSX-x-xxx-xxx-x-1) TCSA with spring return (TCSA-x-xx)

Used as operating shut-off damper.

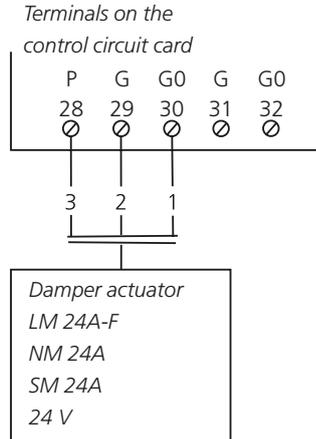
The damper actuator has a 5 metre long connection cable. The cable cross section is 2 x 0.75 mm<sup>2</sup>.



#### TBSA/B on/off (TBSX-x-xxx-xxx-x-2) TCSA on/off (TCSA-x-xx)

To be used as a shut-off or boosting damper.

The damper motor has a 1 metre long connection cable. The cable cross section is 3 x 0.75 mm<sup>2</sup>.



## TBSA modulating (TBSA-x-xxx-xxx-x-3)

## TCSA modulating ((TCSA-x-xx)

For use in the GOLD SD extract air or supply air handling unit.

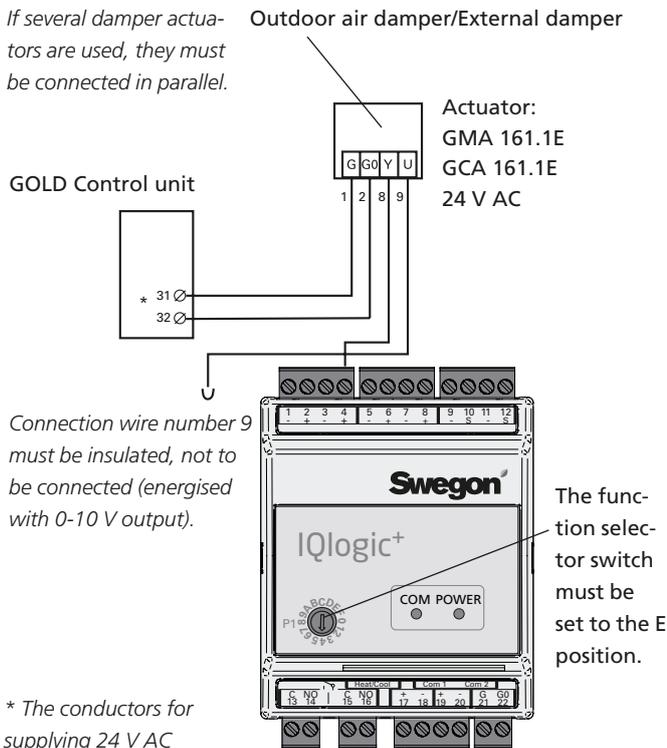
The damper actuator has a 0.9 metre long, 4 x 0.75 mm<sup>2</sup> cross section connection cable.

24 V supply voltage, on control circuit card wiring terminals 31-32. The max. permissible load on these terminals is 16 VA.

### Alt. 1

The actuator should **not** close the damper if the air handling unit stops.

If several damper actuators are used, they must be connected in parallel.



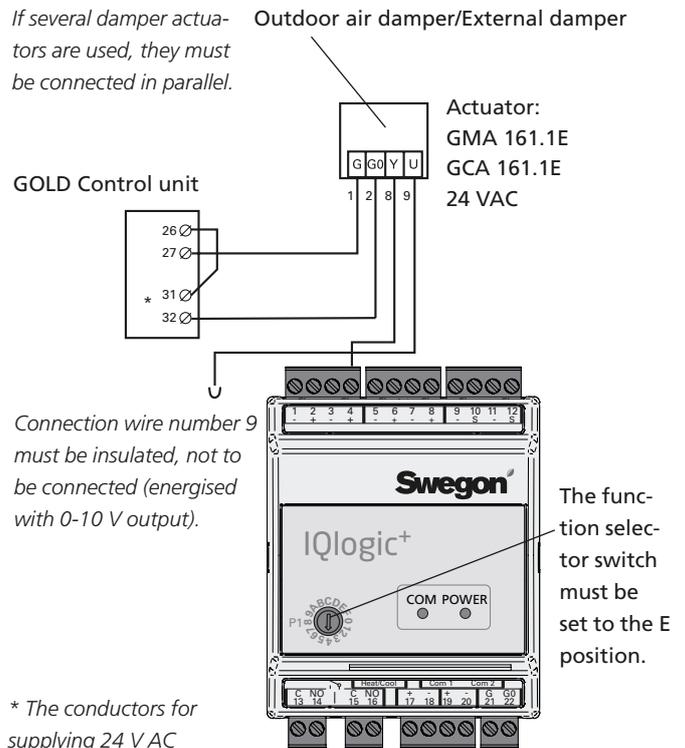
Under normal operating conditions, the damper opens and closes by means of the damper actuator's motor drive (actuating time: 90 seconds).

### Alt. 2

The actuator should close the damper if the air handling unit stops.

If the damper actuator must close the damper when the air handling unit stops, then a 24 V supply voltage cable can be wired via the GOLD air handling unit's service contact.

If several damper actuators are used, they must be connected in parallel.



Under normal operating conditions, the damper opens and closes by means of the damper actuator's motor drive (actuating time: 90 seconds).

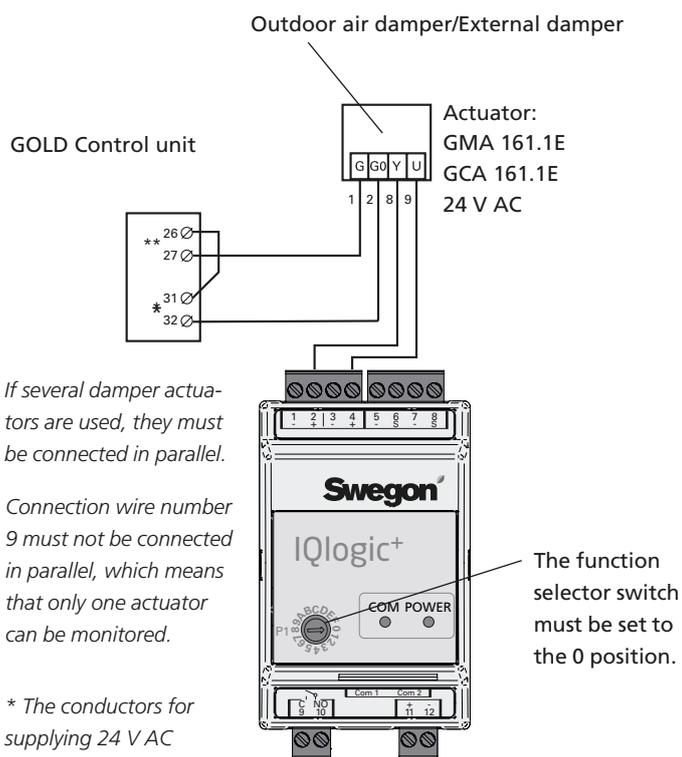
**TBSA modulating (TBSA-x-xxx-xxx-x-3)**

**TCSA modulating (TCSA-x-xx)**

**For use as an outdoor air damper when the ReCO<sub>2</sub> function is in use.**

The damper actuator has a 0.9 metre long, 4 x 0.75 mm<sup>2</sup> cross section connection cable.

24 V supply voltage, on control circuit card wiring terminals 31-32. The max. permissible load on these terminals is 16 VA.



## GOLD LP/COMPACT

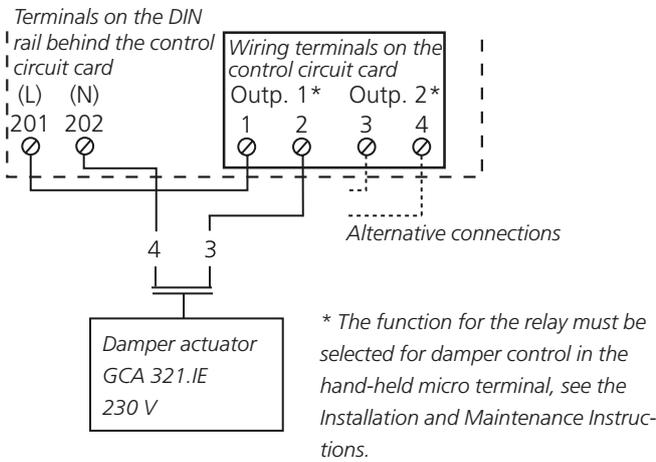
**N.B.!** If actuators of different voltage are used, always check the type of actuator on the actuator rating plate prior to wiring electrical connections!

### TBSA/B with spring return (TBSX-x-xxx-xxx-x-1) TCSA with spring return (TCSA-x-xx)

For use as a shut-off damper.

The damper actuator has a 0.9 metre long connection cable. The cable cross section is 2 x 0.75 mm<sup>2</sup>.

### GOLD LP/COMPACT

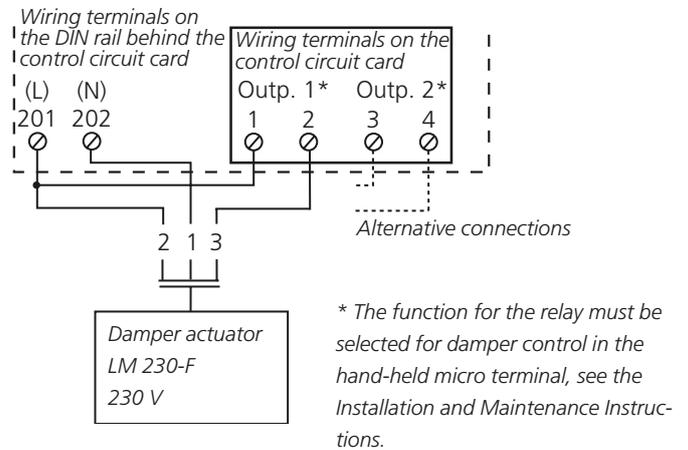


### TBSA/B on/off (TBSX-x-xxx-xxx-x-2) TCSA on/off (TCSA-x-xx)

To be used as a shut-off or boosting damper.

The damper actuator has a 1 metre long connection cable. The cable cross section is 3 x 0.75 mm<sup>2</sup>.

### GOLD LP/COMPACT



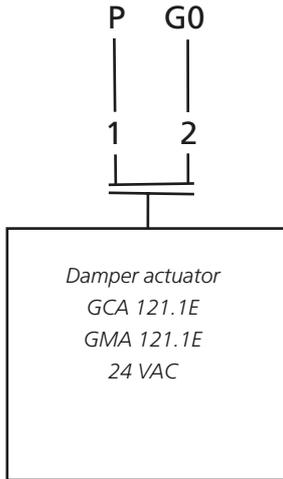
## SILVER C

### TBSA/B with spring return (TBSX-x-xxx-xxx-x-1)

#### TCSAS with spring return (TCSAS-x-xx)

Used as operating shut-off damper.

The damper actuator has a 5 metre long connection cable.  
The cable cross section is 2 x 0.75 mm<sup>2</sup>.

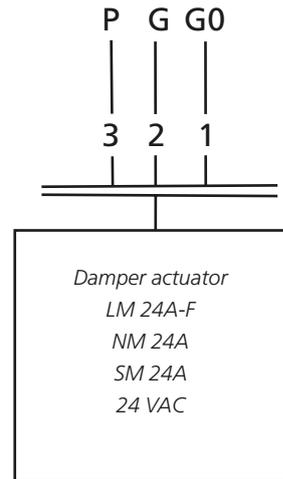


### TBSA/B on/off (TBSX-x-xxx-xxx-x-2)

#### TCSAS on/off (TCSAS-x-xx)

To be used as a shut-off or boosting damper.

The damper motor has a 1 metre long connection cable.  
The cable cross section is 3 x 0.75 mm<sup>2</sup>.



### TBSA modulating (TBSA-x-xxx-xxx-x-3)

#### TCSAS modulating (TCSAS-x-xx)

The damper actuator has a 0.9 metre long connection cable. The cable cross section is 4 x 0.75 mm<sup>2</sup>.

