



## TYP UNIVERSAL, DYNAMIC

### FOR DIFFERENT ACTUATORS

Modular control components for VAV terminal units

- Module selection based on application
- Actuators with selected actuator forces

Options

- Actuators with safety function for 'damper blade OPEN' and 'damper blade CLOSED' (spring return actuators)

## Application



Application

- Electronic volume flow controllers of Type Universal (dynamic) are designed for use with VAV terminal units.
- Dynamic differential pressure transducer and electronic controller are fitted together in one casing
- Actuator or spring return actuator is separate
- The output signals of the room temperature controller, central BMS, air quality controller or similar units control the volume flow rate setpoint
- Override control by means of switches or relays
- Volume flow rate actual value is available as linear voltage signal
- Controller parameters are factory set
- On-site adjusting is not required

Standard filtration in comfort air conditioning systems allows for use of the controller in the supply air without additional dust protection. Since a partial volume flow is passed through the transducer in order to measure the volume flow rate, please note:

- With heavy dust levels in the room, suitable extract air filters must be provided.
- If the air is polluted with fluff or sticky particles or contains aggressive media, Universal (dynamic) controllers cannot be used

## INFORMACJE TECHNICZNE

### Functional description

The volume flow rate is determined by measuring the differential pressure (effective pressure). For this purpose the VAV terminal unit is fitted with a differential pressure sensor.

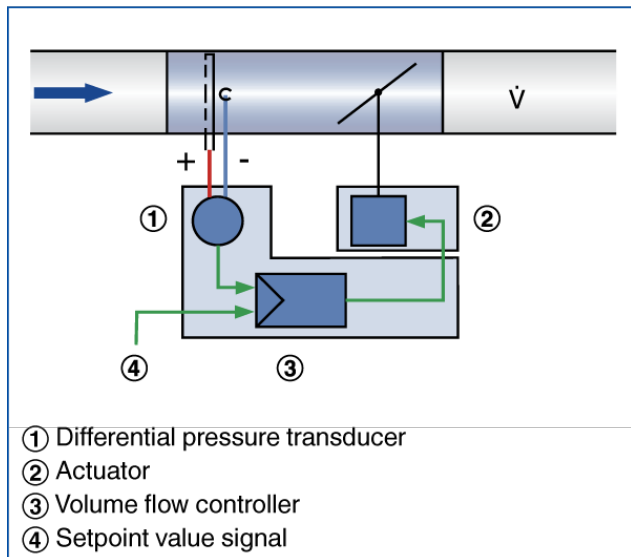
The integral differential pressure transducer transforms the effective pressure into a voltage signal. The volume flow rate actual value is hence available as a voltage signal. The factory setting is such that 10 V DC always corresponds to the nominal volume flow rate ( $V_{nom}$ ).

The volume flow rate setpoint value comes from a higher-level controller (e.g. room temperature controller, air quality controller, central BMS) or from switch contacts. Variable volume flow control results in a value between  $V_{min}$  and  $V_{max}$ . It is possible to override the room temperature control, e.g. by a complete shut-off of the duct.

The controller compares the volume flow rate setpoint value to the actual value and controls the integral actuator accordingly.

The volume flow rate parameters  $V_{min}$  and  $V_{max}$  are factory set on potentiometers. Voltage ranges are factory stored in the controller. Changes on the customer's site can easily be carried out using an adjustment device or a notebook with service tool.

### Principle of operation – Universal



#### Universal controller, dynamic, for VAV terminal units

Order code detail	Controller		Actuator		Type of VAV terminal unit
	Part number	Model	Part number	Model	
B13	M546GA4	VRD3	M466DJ8	NM24A-V	① ② ③
B11	M546GA4	VRD3	M466DG8	SM24A-V	④
B1B	M546GA4	VRD3	M466DR1	NF24A-V (spring return actuator)	① ② ③ ④
B27	M546GA4	VRD3	M466DJ8	NM24A-V	⑤
XC3	M546ED4	GUAC-D3	M466EM0	238-024-15-V (spring return actuator)	① ② ③ ④

- ① TVR
- ② TZ-Silenzio, TA-Silenzio, TVZ, TVA
- ③ TVJ
- ④ TVT
- ⑤ TVM