

**Construction**

The GEMÜ 566 2/2-way control valve has a body with an integrated control mechanism which can be controlled by various operator types.

**Features**

- Suitable for inert and corrosive\* liquid and gaseous media
- Choice of three operator types (manual, pneumatic, motorized)
- Flow rates of 63 – 2,500/h
- CIP-capability

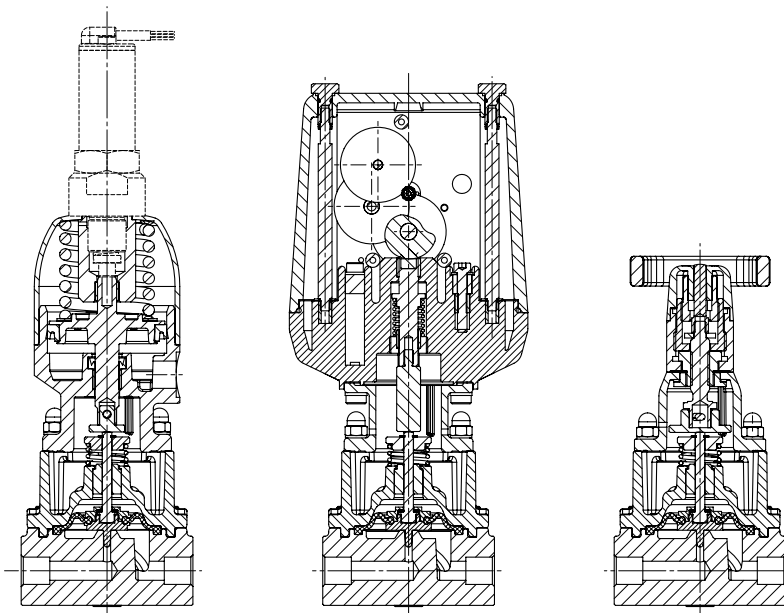
**Options**

- Versions according to ATEX for manual and pneumatic operation on request

**Advantages**

- The integrated control mechanism enables simple operator replacement and subsequent automation
- The piping need not be emptied when replacing the operator as the spindle is sealed by an isolating diaphragm
- Linear and equal-percentage control characteristics available

\*see information on working medium on page 2

**Sectional drawing**

## Technical data - manually operated valve

Working medium	
Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and diaphragm material.	
Media temperature	80 °C
CIP max. 30 min (Isolating diaphragm material code 33)	85 °C
Operating pressure	
Operating pressure	0 - 6 bar
All pressures are gauge pressures. Valve bodies are approved up to PN 10.	

Leakage rate	
DIN IEC 60534-4 IV L 1	
Ambient conditions	
Ambient temperature	max. 60 °C
Operator material	
Bonnet	A4 stainless steel, (1.4408)
Cap	PEEK
Handwheel	A4 stainless steel, (1.4408)

## Order data - manually operated valve

Body configuration	Code
2/2-way body	D
Connection	Code
Threaded sockets DIN ISO 228	1
Clamps ASME BPE for pipe ASME BPE, length EN 558, series 7	88
Valve body material	Code
1.4435 (ASTM A 351 CF3M $\triangleq$ 316L), investment casting	C1
Isolating diaphragm material	Code
FPM	4
EPDM	33

Control function	Code
Manually operated	0
Operator version	Code
Standard	1TN
Locking device	1TB*
* Stroke effective in 7.5% steps	
Control characteristic	Code
Equal-percentage	G*
Linear	L*
* For selection see diagrams page 6.	
Kv value	see page 6
Kv values: Tolerance $\pm 10\%$	

Order example	566	8	D	1	C1	4	0	1TN	G	63
Type	566									
Nominal size		8								
Body configuration (code)			D							
Connection (code)				1						
Valve body material (code)					C1					
Isolating diaphragm material (code)						4				
Control function (code)							0			
Operator version (code)								1TN		
Control characteristic (code)									G	
Kv value										63

Article No.	Designation	Description
88264576	653MAGSV1 C1 AT	Electromagnetic locking device 24 V DC, normally closed, M22x1 ATEX
88232776	653MAGSV1 C1	Electromagnetic locking device 24 V DC, normally closed, M22x1 IP 54, plug design A DIN EN 175301-803
88279388	653MAGSV2 C1	Electromagnetic locking device 24 V DC, normally open, M22x1 IP 54, plug design A DIN EN 175301-803
88239348	653LOCSVL	Locking device M22x1 with padlock
88239405	653LOCSVB	Locking device M22x1 without padlock

## Technical data - pneumatically operated valve

### Working medium

Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and diaphragm material.

Media temperature 80 °C

CIP max. 30 min  
(Isolating diaphragm material code 33) 85 °C

### Operating pressure [bar]

0 - 6

### Control pressure [bar]

4.5 - 7.0

All pressures are gauge pressures.  
Valve bodies are approved up to PN 10.

### Leakage rate

DIN IEC 60534-4 IV L 1

### Control medium

Inert gases

Max. perm. temperature of control medium 70 °C

Filling volume: 0.03 dm<sup>3</sup>

### Ambient conditions

Ambient temperature max. 60 °C

## Order data - pneumatically operated valve

### Body configuration

2/2-way body

### Code

D

### Control function

Normally closed (NC)

### Code

1

### Connection

Threaded sockets DIN ISO 228

1

Clamps ASME BPE for pipe ASME BPE,  
length EN 558, series 7

88

### Actuator version

Actuator version

### Code

1T1

### Valve body material

1.4435 (ASTM A 351 CF3M  $\triangleq$  316L), investment casting C1

### Code

### Control characteristic

Equal-percentage

Linear

### Code

G\*

L\*

\* For selection see diagrams page 6.

### Isolating diaphragm material

FPM

4

EPDM

33

### Kv value

see page 6

Kv values: Tolerance  $\pm 10\%$

Order example	566	8	D	1	C1	4	1	1T1	G	63
Type	566									
Nominal size		8								
Body configuration (code)			D							
Connection (code)				1						
Valve body material (code)					C1					
Isolating diaphragm material (code)						4				
Control function (code)							1			
Actuator version (code)								1T1		
Control characteristic (code)									G	
Kv value										63

In order to configure a complete control valve the pneumatically operated basic valve must be paired with an electro-pneumatic positioner. The GEMÜ 1434 and 1436 positioners and process controllers can be used for this purpose.

## Technical data - motorized valve

### Working medium

Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and diaphragm material.

Media temperature 80 °C

CIP max. 30 min  
(Isolating diaphragm material code 33) 85 °C

### Operating pressure

Operating pressure 0 - 6 bar

All pressures are gauge pressures.  
Valve bodies are approved up to PN 10.

### Leakage rate

DIN IEC 60534-4 IV L 1

### Ambient conditions

Ambient temperature -15 to +55 °C

### Electrical data

Power supply U<sub>v</sub> = 24 V 50/60 Hz +/- 10 %  
U<sub>v</sub> = 120 V 50/60 Hz +/- 10 %  
U<sub>v</sub> = 230 V 50/60 Hz +/- 10 %

Power consumption 3.5 VA

Rating Continuously rated

Electrical connection  
2 x PG 13.5 Functional module versions AE, AP  
2 x round connector  
(Binder series717) Functional module versions E1, E2, E3

### Protection class

IP 65 acc. to EN 60529

### Operating time

See actuator version page 5 approx. 17 or 45 s

### Input resistance

33 Ω (input protected by reverse diode)

## Order data - motorized valve

Body configuration	Code
2/2-way body	D

Connection	Code
Threaded sockets DIN ISO 228	1
Clamps ASME BPE for pipe ASME BPE, length EN 558, series 7	88

Valve body material	Code
1.4435 (ASTM A 351 CF3M $\triangleq$ 316L), investment casting C1	C1

Isolating diaphragm material	Code
FPM	4
EPDM	33

Supply voltage/mains frequency	Code
24 V 50/60 Hz	C4
120 V 50/60 Hz	G4
230 V 50/60 Hz	L4

Functional module	Code
OPEN / CLOSE control with additional end position feedback (signal voltage = supply voltage)	AE
OPEN / CLOSE control with potentiometer output	AP
Control of valve position, actual value detection internal, set value external, 0 - 10 V	E1
Control of valve position, actual value detection internal, set value external, 0/4 - 20 mA	E2
Control of process variables, actual value external, 0/4 - 20 mA, set value external, 0/4 - 20 mA	E3

Control characteristic	Code
Equal-percentage	G*
Linear	L*

\* For selection see diagrams page 6.

Kv value	see page 6
Kv values: Tolerance $\pm 10\%$	

Actuator version	Code
Operating time 17 sec.	A0
Operating time 45 sec.	A1

Order example	566	8	D	1	C1	4	C4	AE	G	63	A0
Type	566										
Nominal size		8									
Body configuration (code)			D								
Connection (code)				1							
Valve body material (code)					C1						
Isolating diaphragm material (code)						4					
Supply voltage/mains frequency (code)							C4				
Functional module (code)								AE			
Control characteristic (code)									G		
Kv value										63	
Actuator version (code)											A0

## Kv values [l/h]

### Equal-percentage (code 1)

Control characteristic	seat ø [mm]	Kv value [l/h]	DN 8	DN 10	DN 15
G	3	63	X	-	-
G	3	100	X	-	-
G	3	160	X	-	-
G	6	250	X	-	-
G	6	400	X	-	-
G	6	630	X	-	-
G	11	1000	-	X	-
G	11	1600	-	X	-
G	15	2500	-	-	X

### Linear (code 1)

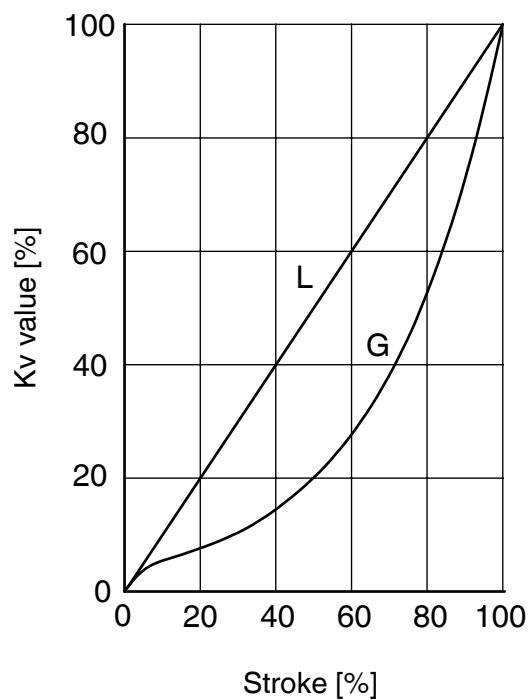
Control characteristic	seat ø [mm]	Kv value [l/h]	DN 8	DN 10	DN 15
L	3	100	X	-	-
L	6	250	X	-	-
L	6	630	X	-	-
L	11	1600	-	X	-
L	15	2500	-	-	X

### Equal-percentage (code 88)

Control characteristic	seat ø [mm]	Kv value [l/h]	DN 15	DN 20
G	3	63	X	-
G	3	100	X	-
G	3	160	X	-
G	6	250	X	-
G	6	400	X	-
G	6	630	X	-
G	11	1000	X	-
G	11	1600	X	-
G	15	2500	-	X

### Linear (Code 88)

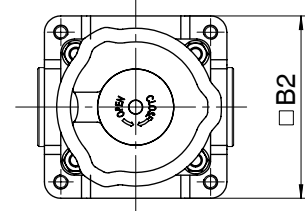
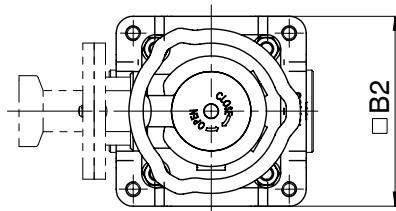
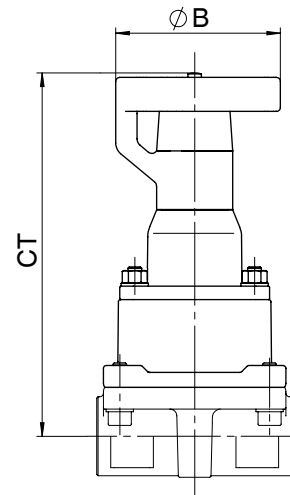
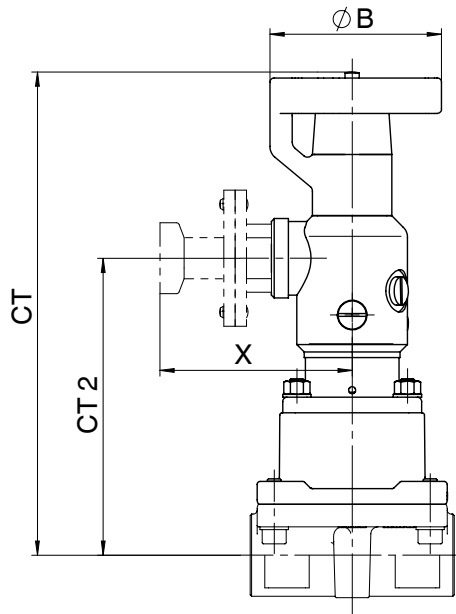
Control characteristic	seat ø [mm]	Kv value [l/h]	DN 15	DN 20
L	3	100	X	-
L	6	250	X	-
L	6	630	X	-
L	11	1600	X	-
L	15	2500	-	X



## Dimensions [mm]

### Manual operator dimensions

Actuator size	CT	CT2	Ø B	□ B2	X	
					MAG	LOC
1TB	170	105	63	67	107	73
1TN	135	-	63	67	-	-

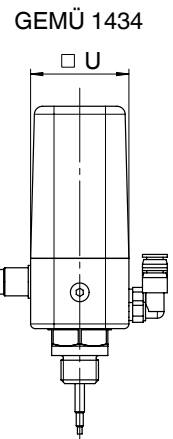
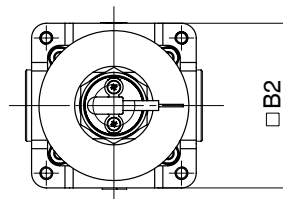
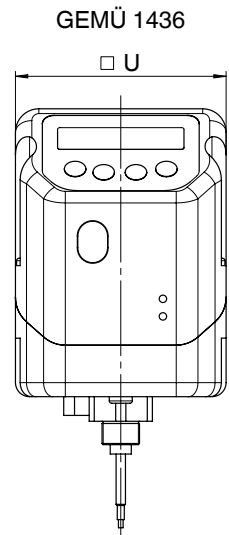
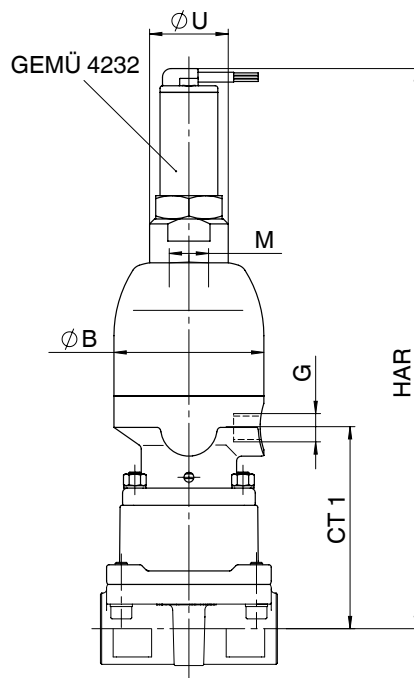


## Dimensions [mm]

### Pneumatic actuator dimensions

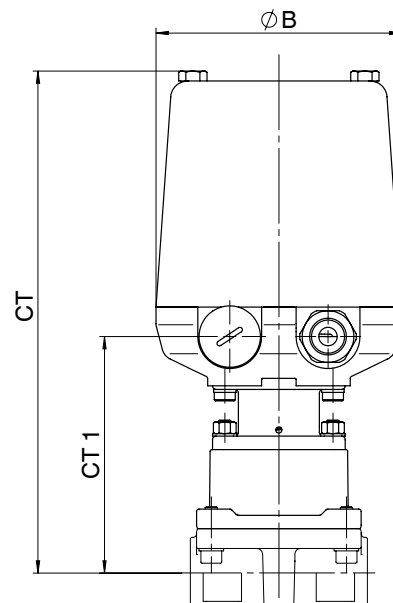
CT1	Ø B	□ B2	G	M
82	61	67	1/4	16x1

	HAR	□ U
GEMÜ 4232	228	32
GEMÜ 1434	255	42
GEMÜ 1436	283	90



### Motorized actuator dimensions

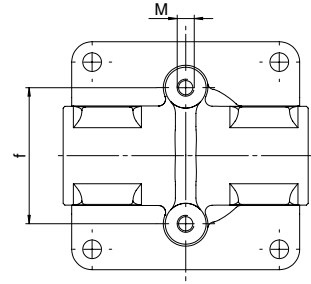
CT	CT1	Ø B
205	96	100



## Dimensions [mm]

### Valve body mounting dimensions

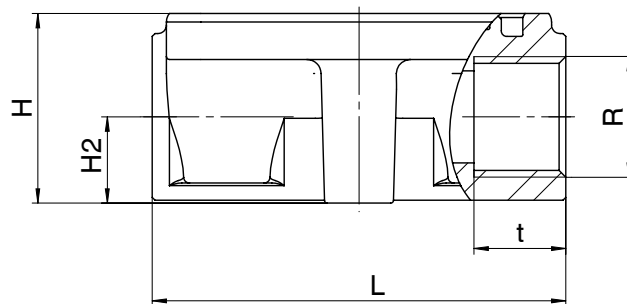
DN	f	M
8, 10, 15, 20	40	M5



## Body dimensions [mm]

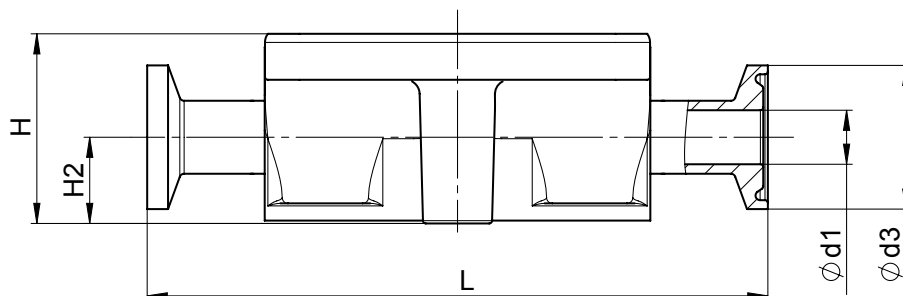
### Threaded sockets, connection code 1 Valve body material: 316L (code C1)

DN	R	t	H	H2	L
8	G 1/4	16	33	15	72
10	G 3/8	16	33	15	72
15	G 1/2	16	33	15	72



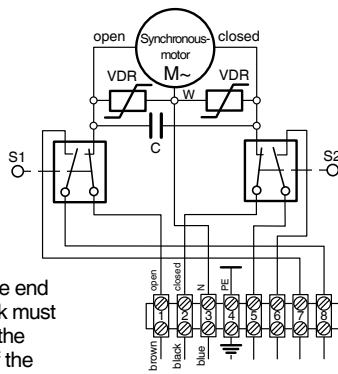
### Clamp connections, connection code 88 Valve body material: 316L (code C1)

DN	L	H	H2	ø d1	ø d3
15	108	33	15	9.40	25.0
20	117	33	15	15.75	25.0



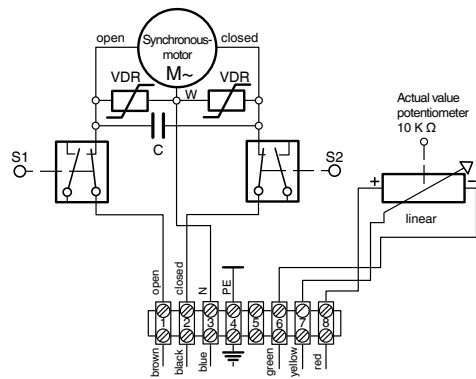
## Connection diagram

### Connection diagram - Functional module code AE

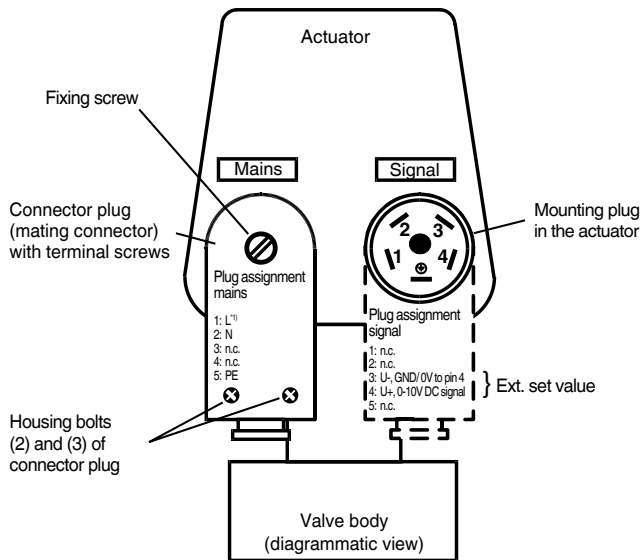


The voltage of the end position feedback must be identical with the supply voltage of the actuator.

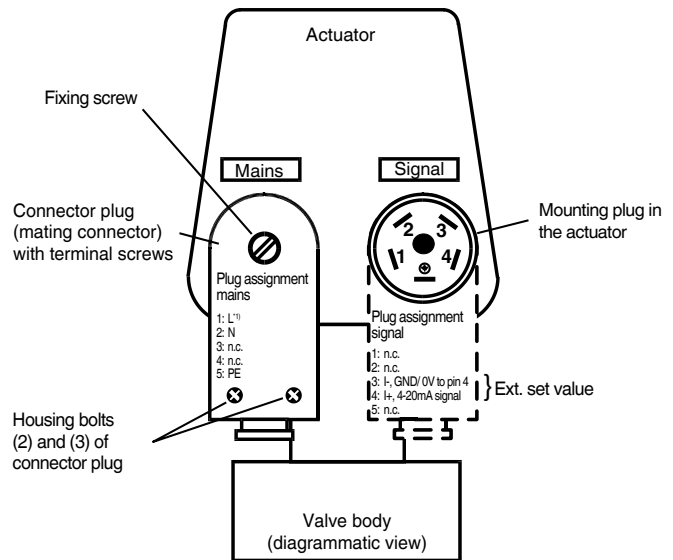
### Connection diagram - Functional module code AP



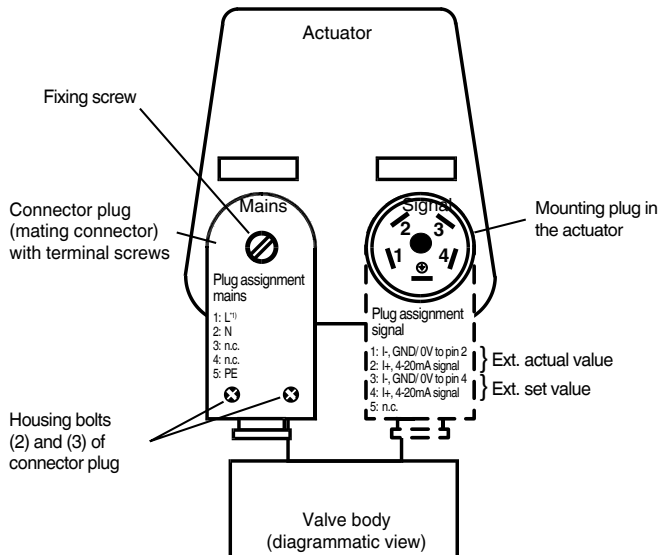
### Connection diagram - Functional module code E1



### Connection diagram - Functional module code E2

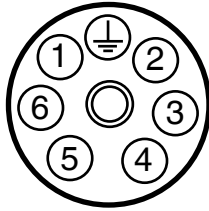


### Connection diagram - Functional module code E3



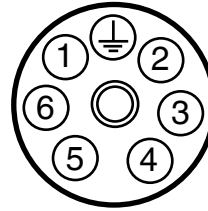
\*1) For the supply voltage (mains) check the details on the product label (24, 120, or 230 VAC).  
 N.C. = (not connected)

Functional module AE OPEN / CLOSE control with 2 additional end position feedback signals and Hirschmann plug N 6 R AM2 (design: 6027)



Pin	Designation
1	L1, motor voltage for direction of travel OPEN
2	L1, motor voltage for direction of travel CLOSED
3	N, reference voltage
4	L1, S1/S2 (23) limit switch
5	Us, S2 (24) CLOSED end position [Us=Ub]
6	Us, S1 (24) OPEN end position [Us=Ub]
7	⏏, PE

Functional module AP OPEN / CLOSE control with potentiometer output and Hirschmann plug N 6 R AM2 (design: 6027)



Pin	Designation
1	L1, motor voltage for direction of travel OPEN
2	L1, motor voltage for direction of travel CLOSED
3	N, reference voltage
4	Us +, actual value potentiometer, signal voltage
5	Us -, actual value potentiometer, signal output
6	Us ⏏, actual value potentiometer, signal voltage
7	⏏, PE

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