

GHG43 control stations

Non-metallic

Cl. I, Div. 2, Groups A, B, C, D
 Cl. I, Zones 1 & 2, (A) Ex de IIB + H₂ T6
 Cl. II, Div. 1, Groups E, F, G (cUL)
 PTB ATEX Certified 3117
 Ex de IIC, T6, Zones 1, 2, 21, 22

UL/cUL Listed
 NEMA 4X, IP 66

4C

Applications:

Control stations are used as a remote means of:

- Motor control
- Visual indication of equipment performance
- On-off control of circuits
- Circuit selection

Common applications include:

- Areas which are hazardous due to the presence of flammable vapors, gases or highly combustible dusts
- For installation at petroleum refineries, chemical and petrochemical plants and other process industry facilities where similar hazards exist



Features:

- NEMA 4X, IP66 enclosure with formed-in-place gasket
- Available with all operators: indicator lights, potentiometers, control switches, pushbuttons, terminal blocks and meters
- Base mounted contact blocks
- Easy change-out components snap in place on DIN rail
- Enclosure meets UL94-VO; also available in anti-static Ex-e materials
- Inserts for mounting DIN rails
- Available with a maximum of two entries – top and bottom for conduit fittings or cable glands
- Suitable for universal mounting plates on pipes, conduit, wall or channels
- Mounting dimensions data molded on back
- Captive, corrosion-resistant cover screws
- Built-in mounting slots for wall installation



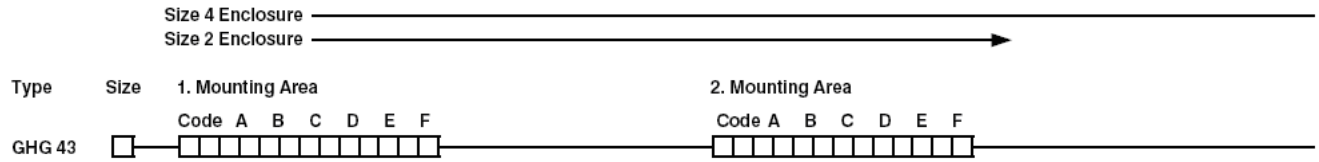
Certifications and compliances:

- UL/cUL Listed
- Class I, Division 2, Groups A, B, C, D
- Class I, Zones 1 & 2, Ex de IIB + H₂, T6
- Class II, Division 1, Groups E, F, G (cUL)
- AEx de IIB + H₂, T6
- Type 3, 4, 4X; IP66
- CENELEC-PTB 00 ATEX 3117
- Ex de IIC, T6, Zones 1 & 2, IP66

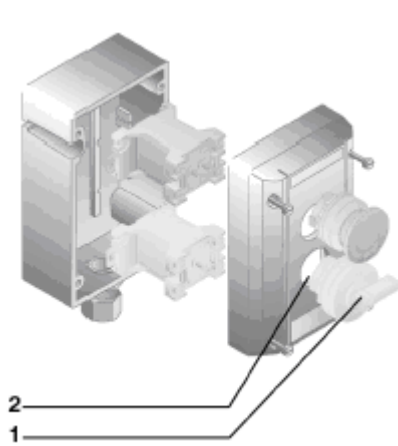
GHG43 control stations

Non-metallic

How to build a GHG43 catalog number



GHG43 2 – Size 2 enclosure



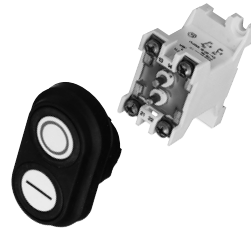
Mounting area ^A



Pushbutton DRT

Code A B C D

Codes see page 152

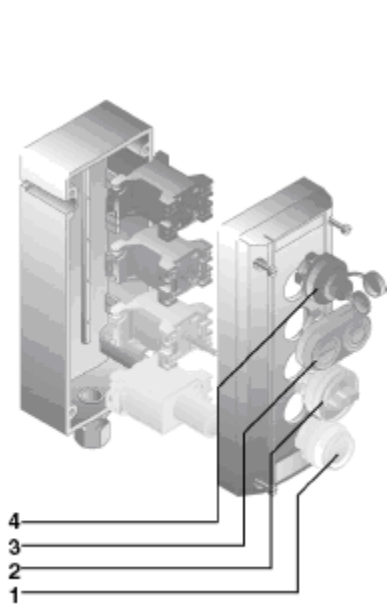


Double pushbutton

Code A B C D E

Codes see page 152

GHG43 4 – Size 4 enclosure



Mounting area ^A



Key operated pushbutton

Code A B C

Codes see page 152



Mushroom head pushbutton

Code A B C D E F

Codes see page 153



Signal lamp

Code A B C

Codes see page 153

^A Unoccupied spaces must be filled in with KLM for correct positioning of devices.

3. Mounting Area

Code A B C D E F

4. Mounting Area

Code A B C D E F

Cable Entries

Top Bottom



Potentiometer

Code A B
P O T

Codes see page 154



Measuring instrument

Code A B C
M 7 2Codes see page 155
Requires 2 spaces

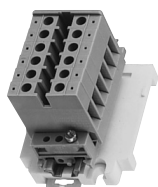
Switch

Code A B C D
S C T

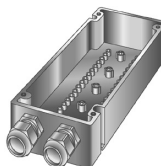
Codes see page 156



Control switch Ex 23 10A

Code A B C D E
E X 2 3Codes see page 156
Requires 2 spacesTerminals and cover
blanking plugCode A B
K L M

Codes see page 154



Two entries

NPT

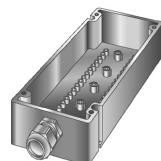
0 0

No entries

1 2

2 x 1/2" Myers hub,
STGK1 zinc gland
plate

1 3

2 x 3/4" Myers hub,
STGK2 zinc gland
plate (stainless steel
control stations only)

One entry

2 2

2 x 1/2" Myers hub,
SSTGK1 stainless
steel gland plate

2 3

2 x 3/4" Myers hub,
SSTGK2 stainless
steel gland plate
(stainless steel control
stations only)

2 6

1 x 3/4" Myers hub,
STGK2 Zone 1
gland plate

3 0

1 x 1/2" Myers hub,
STGK1 Zone 1
gland plate

3 1

1 x 1/2" Myers hub,
SSTGK1 stainless
steel gland plate

3 2

1 x 3/4" Myers hub,
SSTGK2 stainless
steel gland plate

Metric

0 0

No entries

0 1

2 x M25 plastic
cable gland M25
blanking plug

0 2

2 x M20 threaded
entries
Gland plate

0 3

2 x M25
Threaded entries
Gland plate

0 4

1 x M32 plastic
cable gland

2 7

1 x M25
Threaded entry,
blanking plug and
gland plate

2 9

2 x M25
Threaded entry,
1 blanking plug and
gland plate

3 3

1 x M20
Threaded entry,
blanking plug and
gland plate

3 4

1 x 3/4"
Myers hub,
SSTGK2 stainless
steel gland plate

Pushbuttons:

- Used for logic controls in hazardous areas
- Single or double units
- Used with all operators
- Base mounting



Pushbutton	
Type of protection	Ex de IIC T6
Certificate of conformity	PTB No. Ex-87.B:1007U
Approvals	PTB, UL, cUL
Rated voltage	Up to 400V
Rated current	NEC/CEC 10A; IEC 16A
Terminal wiring	2 x 2.5mm ² / 14 AWG
Mechanical and electrical life	>105 operations

See page 157 for explanation of contact symbols.

Pushbutton DRT

Code	A	B	C	D			
Contact system							
Code B	13	14		15			
Inscription	ALL [Ⓟ]	0	I	II	Stop	Start	Special text on order [Ⓞ]
Code C	01	02	03	04	06	07	99
Lockout see page 158							
Code D	(leave blank if no lockout required)						

Double pushbutton DDTO

Code	A	B	C	D	E		
Contact system							
Code B	43	44		45			
Inscription	ALL [Ⓟ]	0	I	II	Stop	Start	Special text on order [Ⓞ]
Code C, D left/right	01	02	03	04	06	07	99
Lockout see page 158							
Code E	(leave blank if no lockout required)						

Key operated pushbutton SLT

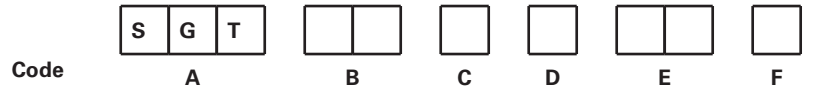
Code	A	B	C				
Contact system							
Code B	23	24	25				
Pushbutton	Key						
Not depressed	Lockable	Yes	Yes	Yes	No	No	Yes
	Key removable	Yes	Yes	No	No	Yes	Yes
Depressed	Lockable	Yes	No	Yes	Yes	Auto	Yes
	Key removable	No	No	Yes	Yes	Yes	Yes
Code C	1	2	3	4	5	6	

[Ⓟ]01 - Includes the following discs: Start, stop, I, O, and red, green, yellow, white and black blank discs.

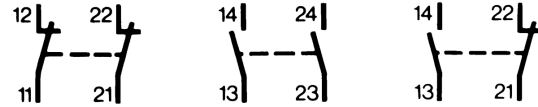
[Ⓞ]For marking guide for pushbuttons, see page 158.



Mushroom head pushbutton SGT



Contact system



Code B

53

54

55

Color of pushbutton	Red	Yellow	Black actuator
Code C	1	2	3
Function	Spring return	Maintained	Key release
Code D	1	2	3
Inscription	Stop	Start	Emergency stop
Code E	06	07	11
Lockout see page 158			
Code F	(leave blank if no lockout required)		

Signal lamp:

- Used for positive feedback indication
- High intensity with special reflector and optical lens
- Accommodates most input voltages
- Base mounting



	Lamp
Type of protection	Ex de IIC T6
Certificate of conformity	PTB No. Ex-88.B.2106U
Approvals	PTB, UL, cUL
Lamp life	>100,000 hours (11.5 years)
Rated voltages	Up to 240 VAC, 50/60 Hz; up to 110 VDC
Rated current	Max. 15 mA
Power consumption	<1.2W
Terminal wiring	2 x 2.5mm ² / 14 AWG
Colors	Red, green, yellow, clear and blue

Signal lamp SIL



Colored lens cover	White	Yellow	Red	1 pkg. white, yellow, red, green	Green	Blue
Code B	1	2	3	4	5	6
Voltage	20-250 VAC / DC	10-33 VAC / DC				
Code C	01	31				

GHG43 control stations

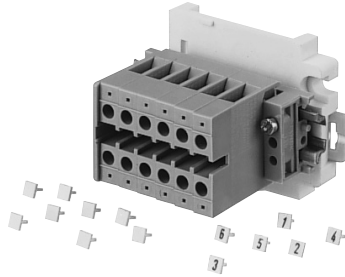
Non-metallic

Terminal blocks and potentiometers
technical data

4C
4C

Terminal blocks:

- Terminal block for easy field connections
- Base mounting



Terminal blocks	
Type of protection	Ex e II
Certificate of conformity	PTB No. Ex-88.B.3112U
Rated voltages	Up to 400V
Rated current	23A
Conductor size	4mm ² / 12 AWG

Terminals and cover plugs KLM



Code

A

B

6 terminals 2 x 4mm²

Undrilled cover (no terminals)

Code B	6 terminals 2 x 4mm ²	Undrilled cover (no terminals)
	61	00

Potentiometers:

- Used to adjust resistance to vary motor speed or light levels
- Scale 0 to 100%
- Base mounting



Potentiometers	
Type of protection	Ex de IIC T6
Certificate of conformity	PTB No. Ex-87.B.1007U
Approvals	PTB, UL, cUL
Rated voltages	>250V
Power consumption	1.0W
Resistance	100-10,000 Ω
Angle of rotation	270°
Scale	0-100%
Connection terminals	2 x 2.5mm ² / 14 AWG

Potentiometer POT



Code

A

B

Power consumption 1W

Resistance Ω	1,000	2,200	4,700	10,000
Code B	4	7	5	6

Ammeters:

- Used to measure motor current draw for efficiencies and maintenance
- Slide in scales to accommodate any amperage range
- Red indicator for quick visual indication to compare set points and actual values

Ammeters

Type of protection	Ex e II T6
Certificate of conformity	PTB No. Ex-87.B.2016U
Approvals	PTB, UL, cUL
Movement	Moving iron (core)
Accuracy	2.5% of range (class 2.5)
Measuring range	0-16A direct, C.T. n/1 A
Operating position	Vertical
Scale	Interchangeable for C.T. n/1 A
Zero adjustment	At instrument
Terminal wiring	2 x 2.5 mm ² / 14 AWG
Rated current marking	Red indicator



Ammeter measuring instrument AM 720



Code

A

B

C

Movement

Direct

n/1 A

0-2 mA

4-20 mA

Code B

1

2

3

6

Movements 0-20 mA and 4-20 mA are only available with 0-100/120% scale.

Direct measurement

Interchangeable scale for C. T. n/1A

Code C	Scale	Code C	Scale	Code C	Scale	Code C	Scale
02	0 - 1/1.5A	02	0 - 1/1.5A	09	0 - 30/45A	16	0 - 200/300A
03	0 - 2.5/3.75A	03	0 - 2.5/3.75A	10	0 - 40/60A	17	0 - 250/375A
04	0 - 5/7.5A	04	0 - 5/7.5A	11	0 - 50/75A	18	0 - 300/450A
05	0 - 10/15A	05	0 - 10/15A	12	0 - 60/90A	19	0 - 400/600A
07	0 - 16/24A	06	0 - 15/22.5A	13	0 - 75/112.5A	20	0 - 500/750A
		08	0 - 20/30A	14	0 - 100/150A	21	0 - 600/900A
				15	0 - 150/225A	22	0 - 100/150A

Ⓧ Requires two spaces.

GHG43 control stations

Non-metallic

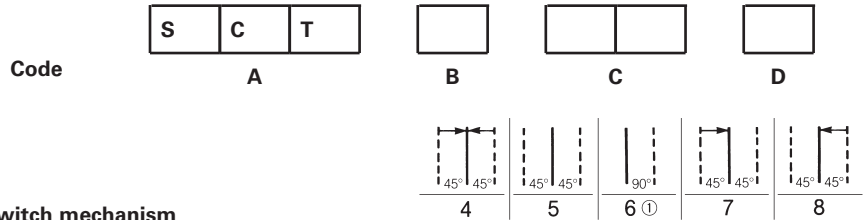
Rotary control switches:

- Used for selectable operations (i.e. Hand-Off-Auto)
- Two independent contacts
- Available in any contact configuration
- Spring return or maintained position
- Available with lockout positions

	SCT	Ex 23
Type of protection	Ex de IIC T6	Ex de IIC T6
Certificate of conformity	Ex.87.B.1007U	PTB No. Ex-88.B
Approvals	PTB, UL, cUL	PTB, UL, cUL
Rated voltage	400V	Up to 500V
Rated current	NEC 10A; IEC 16A	NEC 10A; IEC 16A
Terminal wiring	2 x 2.5mm ² / 14 AWG	2 x 2.5mm ² / 14 AWG
Mechanical life	>10 ⁵ operations	>10 ⁵ operations
Electrical life	>10 ⁵ operations	>10 ⁵ operations
	AC II: 20V/6A 400V/4A	AC I: 500G/10A AC II: 230V/6A 500V/6A
Switching capacity	DC II: 24V/6A 60V/0.8A 110V/0.5A 220V/0.2A	DC II: 24V/6A 48V/4A 60V/0.8A 110V/0.5A 220V/0.4A



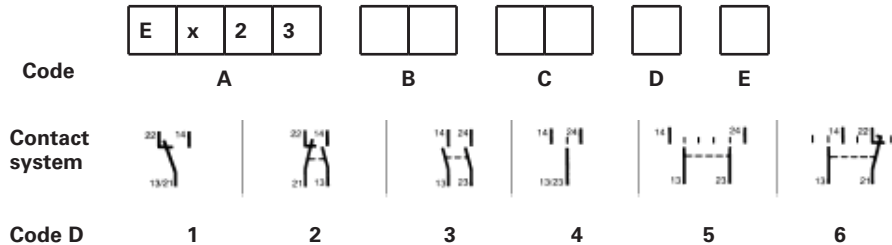
Rotary control switch SCT



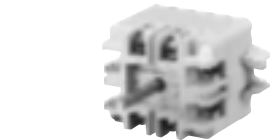
Code B	Code C	Inscription	Code C	Inscription
01	0	I	07	I
03	STOP	START	13	LOCAL
04	HAND	AUTO	14	STOP
06	REMOTE	LOCAL	15	HAND
29	OFF	ON	99	Special – text to be given on order



Rotary control switch Ex 23e



Code B	Inscription
01	0
03	STOP
04	HAND
06	REMOTE
07	I
13	LOCAL
14	STOP
23	OFF
24	HAND
27	START
29	OFF
32	ON
99	Special – text to be given on order

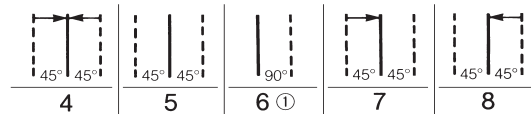


Same as SCT above except up to 4 independent contacts

^E Requires two spaces in cover.

Code C	Contact system	Type	Code C	Contact System	Type
00		Two-position	09		Three-position
01		Two-position	10		Three-position
02		Two-position	12		Three-position
03		Single-pole changeover	13		Two-position
05		HOA	14		2 Two-position
07		Three-position single level	15		Three-position double-pole changeover

Switched mechanism Code D



Padlocking facility Code E



"0"



"1"



"2"

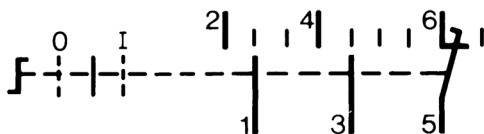


"3"

Contact configurations

Normally closed			Normally open
Normally closed extended over two positions			Normally open early make/late break
Change-over break before make			Change-over make before break

Example of switch type 10



This example is the switch type 10 Stop-Run-Stop. The switch has 3 positions – the normal position is center and can be switched left or right. An arrow (□→) indicates spring return. (See codes for switch mechanism). Contacts 1-2 only close in the Stop position. Contacts 3-4 close only in the Start position. Contacts 5-6 are normally closed and remain closed when switched to the Start position and open when switched to the Stop position.

Lockouts for DRTO pushbuttons:



X
Code D
Shroud cover for pushbutton
Y-lockout with bolt and chain



Z
Code D
Padlocking fire alarm cover for pushbutton

Lockouts for DDTO double pushbuttons:



X
Code ED
Padlocking cover for double pushbutton without hole



Z
Code E
Padlocking cover for double pushbutton with hole

Lockouts for SGT mushroom head pushbuttons:



X
Code F
Padlocking cover for emergency stop pushbutton
Not permitted in IEC locations



Z
Code F
Padlocking cover for emergency stop pushbutton with bolt and chain

Marking guide for pushbuttons:

Special text

Marking required	Standard abbreviation	Actual marking on disc
Acknowledge	AK	ACK
Alarm	AM	ALARM
Automatic	AU	AUTO
Close	CL	CLOSE
Down	DN	DOWN
Fast	FS	FAST
Forward	FW	FWD
Hand	HN	HAND
High	HI	HIGH
In	IN	IN
Jog	JG	JOG
Local	LC	LOCAL
Lower	LO	LOWER
Maintain	MT	MAINT
Manual	MN	MANUAL
Normal	NR	NORMAL
Off	OF	OFF
On	ON	ON
Open	OP	OPEN
Out	OT	OUT
Raise	RA	RAISE
Remote	RM	REMOTE
Reset	RS	RESET
Reverse	RV	REV
Run	RN	RUN
Slow	SL	SLOW
Test	TT	TEST
Trip	TP	TRIP
Up	UP	UP

Dimensions:

