

4C GHG43 Series Control Stations

**Nonmetallic or 316L Stainless
Steel Corrosion Resistant**

UL/cUL listed
Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zones 1 and 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 and 2
Ex de IIC, T6 Zones 21 and 22
IP 66, NEMA 4X

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



GHG43 Nonmetallic Control Stations

Features:

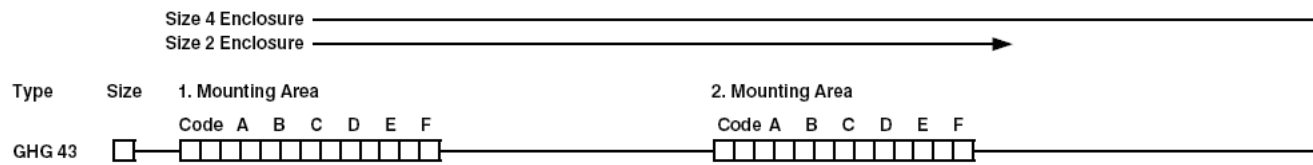
- NEMA 4X, IP66 enclosure with formed-in-place gasket
- Available with all operators: indicator lights, potentiometers, control switches, pushbuttons, terminal blocks and meters
- Base-mounted contact blocks
- Easy change-out components snap in place on DIN rail
- Enclosure meets UL 94-VO. Also available in anti-static Ex e materials
- Inserts for mounting DIN rails
- Available with a maximum of 2 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



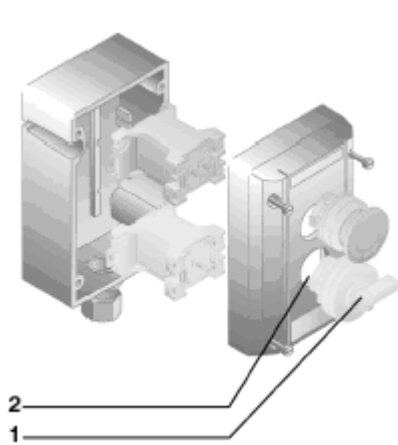
Certifications and Compliances:

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

Nonmetallic or 316L Stainless Steel Corrosion Resistant



GHG43 2 - Size 2 Enclosure



Mounting Area*



Pushbutton DRT

Code A B C D

Codes see page 559

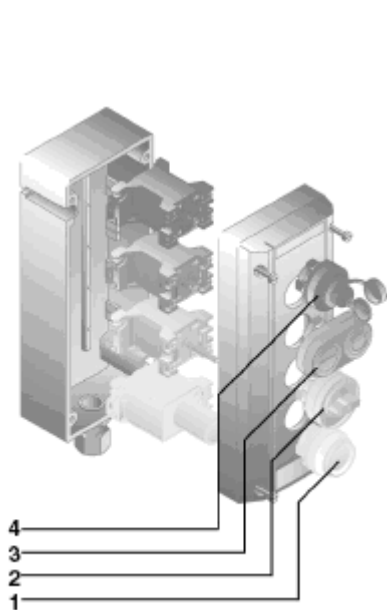


Double Pushbutton

Code A B C D E

Codes see page 559

GHG43 4 - Size 4 Enclosure



Mounting Area*



Key Operated Pushbutton

Code A B C

Codes see page 559



Mushroom-Head Pushbutton

Code A B C D E F

Codes see page 560



Signal Lamp

Code A B C

Codes see page 560

‡For a GHG43 control station with 316L stainless steel enclosure, add suffix "S860" to end of catalog number.
 *Unoccupied spaces must be filled in with KLM for correct positioning of devices.



Nonmetallic or 316L Stainless Steel Corrosion Resistant

4C

3. Mounting Area

Code A B C D E F

Code A B

P O T

Codes see page 561

Code A B C

M 7 2

Codes see page 562
Requires 2 spaces

Code A B C D

S C T

Codes see pages 563–564

Code A B C D E

E X 2 3

Codes see pages 563–564
Requires 2 spaces

Code A B

K L M

Code see page 561

4. Mounting Area

Code A B C D E F


Cable Entries

Top Bottom


Cable Entries

| | |
|--|---|
| NPT | Metric |
| 00 | 00 |
| No entries | No entries |
| 12 | 01 |
| 2 x 1/2" Myers Hub, STGK1 Zinc Gland plate | 2 x M25 Plastic Cable gland M25 Blanking plug |
| 13 | 02 |
| 2 x 3/4" Myers Hub, STGK2 Zinc Gland plate (Stainless Steel Control Stations only) | 2 x M20 Threaded entries Gland plate |
| 22 | 03 |
| 2 x 1/2" Myers Hub, SSTGK1 Stainless steel Gland plate | 2 x M25 Threaded entries Gland plate |
| 23 | 04 |
| 2 x 3/4" Myers Hub, SSTGK2 Stainless steel Gland plate (Stainless Steel Control Stations only) | 1 x M32 Plastic Cable gland |
| 26 | 27 |
| 1 x 3/4" Myers Hub, STGK2, Zone 1 Gland plate | 1 x M25 Threaded Entry, Blanking plug and Gland plate |
| 30 | 29 |
| 1 x 1/2" Myers Hub, STGK1, Zone 1 Gland plate | 2 x M25 Threaded Entry, 1 blanking plug and Gland plate |
| 31 | 33 |
| 1 x 1/2" Myers Hub, SSTGK1 Stainless st. Gland plate | 1 x M20 Threaded entry Blanking plug and Gland plate |
| 32 | 34 |
| 1 x 3/4" Myers Hub, SSTGK2 Stainless st. Gland plate | 1 x 3/4" Myers Hub SSTGK2 stainless steel, Gland plate |


Potentiometer




Measuring Instrument



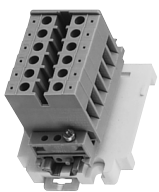
Switch



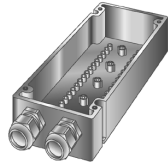
Control Switch Ex 23 10A



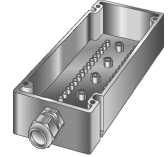
Terminals and cover blanking plug



Two entries



One entry



‡For a GHG43 control station with 316L stainless steel enclosure, add suffix "S860" to end of catalog number.
*Unoccupied spaces must be filled in with KLM for correct positioning of devices.

Nonmetallic or 316L Stainless Steel Corrosion Resistant

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 16 A | |
| Terminal Wiring | | 2 x 2.5mm ² / 14AWG | |
| Mechanical and Electrical Life | | >10 ⁸ Operations | |

See page 564 for explanation of contact symbols.

Pushbutton DRT

| Code | A | B | C | D | | | |
|----------------|---------|----|----|----|------|-------|-------------------------|
| | D R T O | | | | | | |
| 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 565

Code D (leave blank if no lockout required)

Double Pushbutton DDTO

| Code | A | B | C | D | E | | |
|----------------------|---------|----|----|----|------|-------|-------------------------|
| | D D T O | | | | | | |
| 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 565

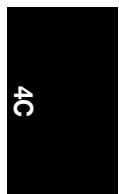
Code E (leave blank if no lockout required)

Key-Operated Pushbutton SLT

| Code | A | B | C | | | | |
|----------------|---------------|-----|-----|-----|-----|------|-----|
| | S L T O | | | | | | |
| 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 565.



**Nonmetallic or 316L Stainless Steel
Corrosion Resistant**



Mushroom-Head Pushbutton SGT

| | | | | | | | | | | | | | | | | |
|---------------------|---|------------|----------------|---|---|---|--|--|--|--|--|---|--|--|--|--|
| | <table border="1"><tr><td>S</td><td>G</td><td>T</td></tr></table> | S | G | T | <table border="1"><tr><td></td><td></td></tr></table> | | | <table border="1"><tr><td></td></tr></table> | | <table border="1"><tr><td></td></tr></table> | | <table border="1"><tr><td></td><td></td></tr></table> | | | <table border="1"><tr><td></td></tr></table> | |
| S | G | T | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| Code | A | B | C | D | E | F | | | | | | | | | | |
| 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 565

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



| | | | | | | | | | |
|---------------------------|---|---|---|---|--|--|---|--|--|
| | <table border="1"><tr><td>S</td><td>I</td><td>L</td></tr></table> | S | I | L | <table border="1"><tr><td></td></tr></table> | | <table border="1"><tr><td></td><td></td></tr></table> | | |
| S | I | L | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Code | A | B | C | | | | | | |
| 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 240VAC, 50 / 60 Hz Up to 110VDC | | | | | | | | |
| Rated Current | Max. 15 mA | | | | | | | | |
| Power Consumption | <1.2W | | | | | | | | |
| Terminal Wiring | 2 x 2.5mm ² / 14AWG | | | | | | | | |
| Colors | Red, Green, Yellow, Clear & Blue | | | | | | | | |

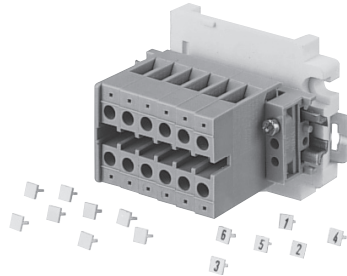
Signal Lamp SIL

| | | | | | | | | | |
|--------------------|---|--------|-----|---------------------------------|--|------|---|--|--|
| | <table border="1"><tr><td>S</td><td>I</td><td>L</td></tr></table> | S | I | L | <table border="1"><tr><td></td></tr></table> | | <table border="1"><tr><td></td><td></td></tr></table> | | |
| S | I | L | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Code | A | B | C | | | | | | |
| Colored Lens Cover | White | Yellow | Red | 1 pkg white, yellow, red, green | Green | Blue | | | |
| Code B | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| Voltage | 20-250VAC/DC | | | 10-33VAC/DC | | | | | |
| Code C | 01 | | | 31 | | | | | |

Nonmetallic or 316L Stainless Steel Corrosion Resistant

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 / 12AWG |

Terminals and Cover Plugs KLM



| | 6 Terminals 2 x 4 mm ² | Undrilled Cover (No Terminals) |
|--------|-----------------------------------|--------------------------------|
| Code B | 61 | 00 |

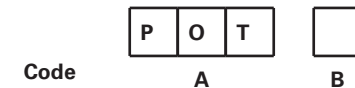
Potentiometers

- 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 | 100–10,000Ω |
| Angle of Rotation | 270° |
| Scale | 0–100% |
| Connection Terminals | 2 x 2.5mm ² / 14AWG |

Potentiometer POT

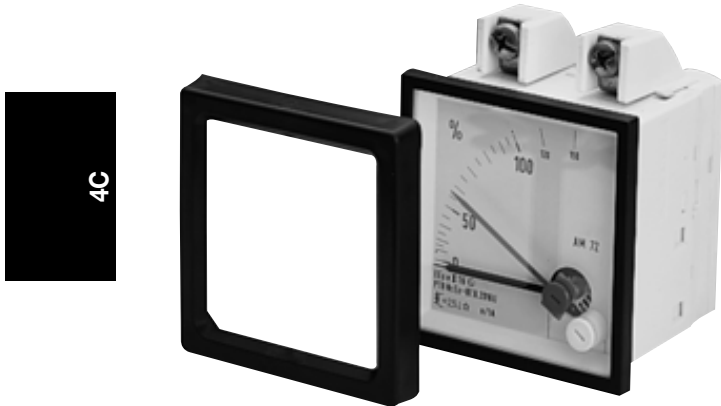


| | 1W | | | |
|---------------------|-------|-------|-------|--------|
| Resistance Ω | 1,000 | 2,200 | 4,700 | 10,000 |
| Code B | 4 | 7 | 5 | 6 |

**Nonmetallic or 316L Stainless Steel
Corrosion Resistant**

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 72***



| 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 |

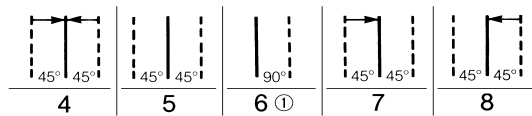
* Requires 2 spaces.

**Nonmetallic or 316L Stainless Steel
Corrosion Resistant**

4C

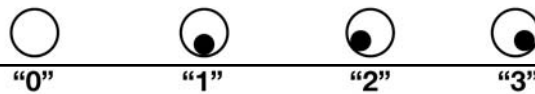
| Code C | Contact System | Type | Code C | Contact System | Type |
|--------|----------------|-------------------------|--------|----------------|-----------------------------------|
| 00 | | 2 Position | 09 | | 3 Position |
| 01 | | 2 Position | 10 | | 3 Position |
| 02 | | 2 Position | 12 | | 3 Position |
| 03 | | Single Pole Changeover | 13 | | 2 Position |
| 05 | | HOA | 14 | | 2 Position |
| 07 | | 3 Position Single Level | 15 | | 3 Position Double Pole Changeover |

**Switched Mechanism
Code D**



Padlocking Facility

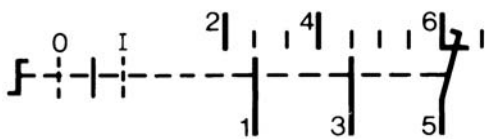
Code E



Contact Configurations

| | | | |
|---|--|--|-------------------------------------|
| Normally Closed | | | Normally Open |
| Normally Closed Extended Over 2 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.

Nonmetallic or 316L Stainless Steel Corrosion Resistant

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



Z
Code F
Padlocking Cover For
Emergency Stop Pushbutton
With Bolt & Chain
Not permitted in IEC hazardous
locations.

Marking Guide For Pushbuttons

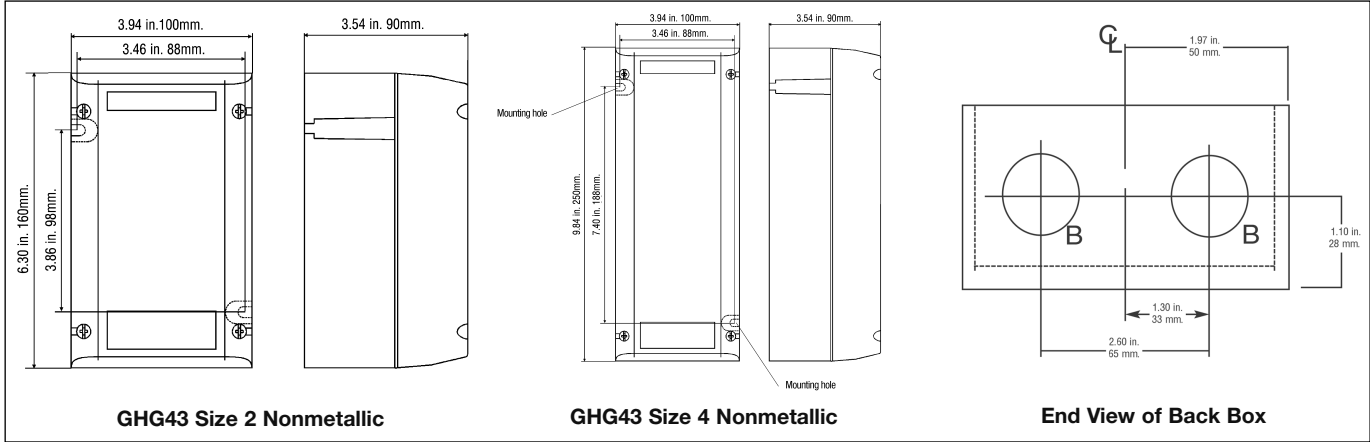
Special Text

| 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 |

4C

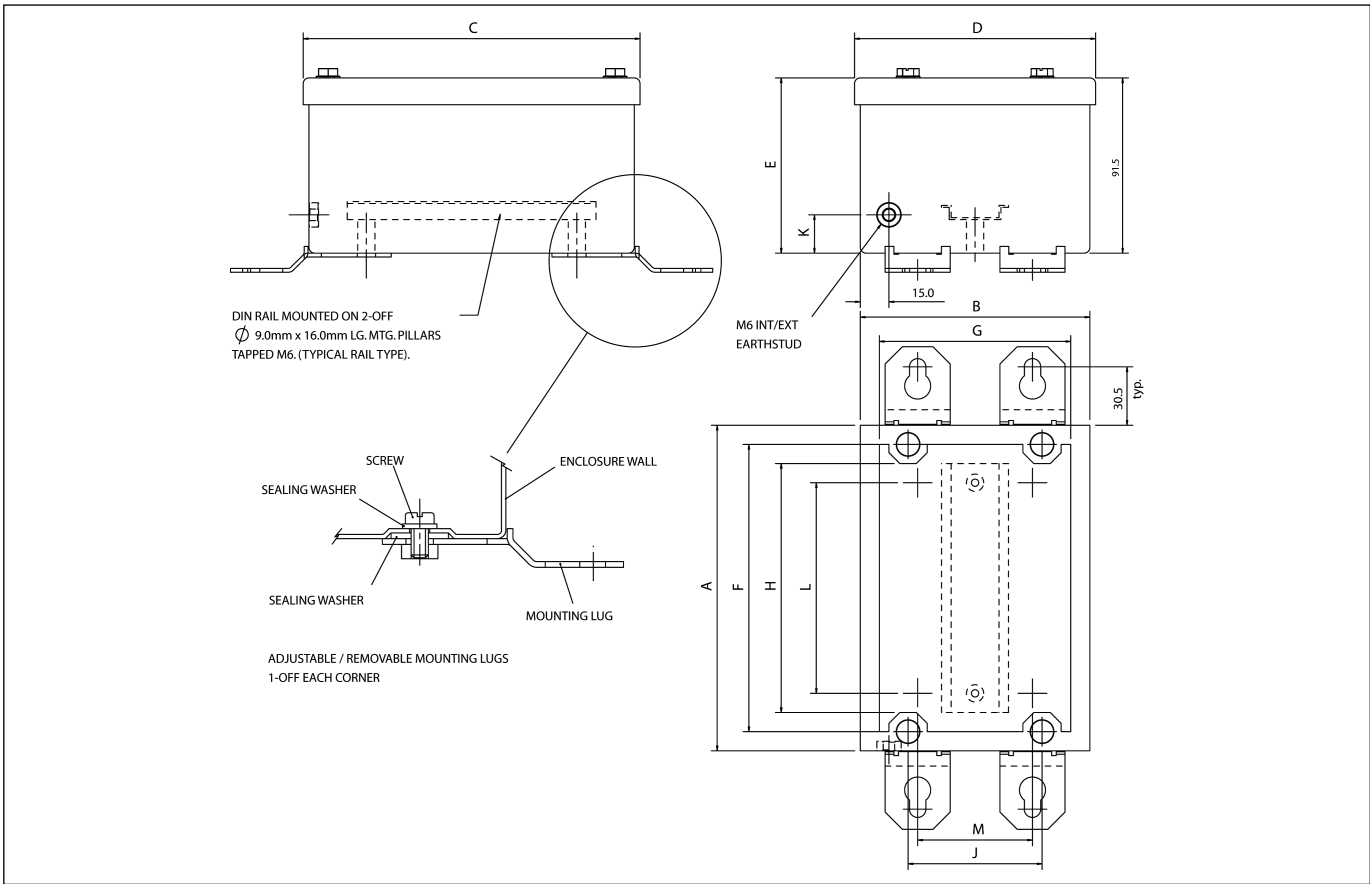
Nonmetallic or 316L Stainless Steel
Corrosion Resistant

GHG43 Nonmetallic Control Stations



4C

GHG43 Stainless Steel Control Stations



Box Type

Dimension (inches)

| | A | B | C | D | E | F | G | H | J | K | L | M |
|----------------------------|-------|------|-------|------|------|------|------|------|------|------|------|------|
| 1 Operator Control Station | 4.72 | 4.72 | 4.96 | 4.96 | 3.60 | 3.94 | 3.94 | 3.15 | 2.76 | 0.79 | 2.36 | 2.36 |
| 2 Operator Control Station | 6.69 | 4.72 | 6.93 | 4.96 | 3.60 | 5.90 | 3.94 | 5.12 | 2.76 | 0.79 | 4.33 | 2.36 |
| 3 Operator Control Station | 8.66 | 4.72 | 8.90 | 4.96 | 3.60 | 7.87 | 3.94 | 7.09 | 2.76 | 0.79 | 6.30 | 2.36 |
| 4 Operator Control Station | 10.63 | 4.72 | 10.87 | 4.96 | 3.60 | 9.84 | 3.94 | 9.06 | 2.76 | 0.79 | 8.27 | 2.36 |