



Reservation

Technical data subject to change without notice. No claims for damages arising from alterations, errors or misprints shall be allowed. Attention is drawn to the applicable standards and regulations on safety components and systems together with the relevant operating and installation instructions.

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Switch module for installation on panel (front installation with connection cable)

BARTEC



Description

As completely certified equipment, BARTEC modules with connection cable can be directly installed in industrial control cabinets in hazardous areas. A high IP degree of protection can be maintained due to easy installation of the actuating elements in the control cabinet. The respective modules can be single-handedly installed to the actuating elements.

Features

- self-cleaning contacts
- positive break contacts
- single-handed installation

Technical data

Protection class

Switch module IP 67 in conjunction with actuator element

Rated insulation voltage

$U_i = 690$ V, only with corresponding core (e. g.: 750 V)

$U_i = 400$ V, If standard type corresponds with oelflex 100

Rated voltage

250 V	250 V	110 V	24 V	230 V
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Utilization category

AC-12	AC-15	DC-13	DC-13	
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Rated operating currents

16 A	10 A	0.5 A	1 A	10 A
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Nominal currents I_{the}

16 A/+40 °C, 11 A/+60 °C

Contact options

contacts with positive break operation (self cleaning)
1 NC and 1 NO or
2 NC or 2 NO or
1 NC or 1 NO

Contact material

AgSnO₂

Enclosure material

Thermoplastic

Connection

flexible cord 4 x 1.5 mm² (Ø 9.1 mm)
resp. 2 x 1.5 mm², (Ø 7.7 mm)

Mechanical life

10⁶ switching cycles

Storage-/transport temperature

-55 °C to +70 °C

Weight

approx. 160 g without cable

Cable length

3 m, indicate greater lengths in plain text

Shock resistance

DIN IEC 68 part 2-27, 30 g 18 ms

Explosion protection

Ex protection type

II 2G EEx d IIC T6
Class 1, Div. 2 - Class 1, Zone 1

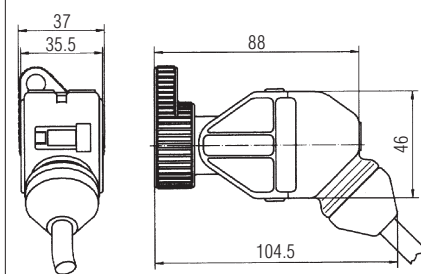
Certification

PTB 00 ATEX 1092 X
UL E184198

Ambient temperature

-40 °C to +60 °C (-55 °C on request)

Dimensions



Selection chart

Type of contact	Code no.	Actuating element	Code no.
2 NC 	1	Pushbutton	0700
		Double push button actuator	7400
		Emergency stop NOT-AUS	0800
2 NO 	2	Selector switch 0 + I latching, 2 positions	0900
		Selector switch I + II latching, 3 positions	1000
		Selector switch I + II momentary-contact, 3 positions	1001
1 NC + 1 NO 	4	Selector switch I latching, II momentary-contact, 3 positions	1002
		Selector switch I momentary-contact, II latching, 3 positions	1003
		Mushroom pushbutton, black	1800
1 NC 	7	Lockable in both positions, DOM lock	1200
		Lockable in the depressed position, DOM lock	1201
		Lockable in the initial position, DOM lock	1202
1 NO 	8	Locking-type mushroom pushbutton	1203
		Lockable in both positions, RONIS lock	6100

Complete order no.

Switch module without actuating element

07-3323-3 03*)

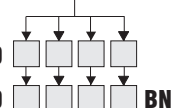
Actuating element

Standard

for Offshore

05-0003-00

05-0003-00



Please enter code number. *) Standard length 3 m, indicate greater lengths in plain text.



Lamp module for installation on panel (front installation with connection cable)

BARTEC

Description

As completely certified equipment, BARTEC modules with connection cable can be directly installed in industrial control cabinets in hazardous areas. A high IP degree of protection can be maintained due to easy installation of the actuating elements in the control cabinet. The respective modules can be single-handedly installed to the actuating elements.

Technical data

Protection class

Lamp module IP 67 in conjunction with actuator element

Rated insulation voltage

300 V

Rated operating voltage

AC 12 V to 250 V (-55 °C to +50 °C)
DC 12 V to 60 V (-55 °C to +50 °C)
AC/DC 12 V to 24 V (-55 °C to +60 °C)

Power consumption

≤ 1 W

Lamp

LED
red, green, yellow, white, blue

Illumination

very bright, over a visible angle of 180°

Enclosure material

Thermoplastic

Connection

flexible cord 2 x 0.75 mm² (Ø 6.4 mm)

Electrical life

>10⁵ running hours

Storage-/transport temperature

-55 °C to +70 °C

Weight

approx. 180 g without cable

Mounting

by bayonet lock

Cable length

3 m, indicate greater lengths in plain text

Shock resistance

DIN IEC 68 part 2-27, 30 g 18 ms

Note

The connection cable for lamp modules must be installed in a way which ensures that no capacitive influence (voltage transmission) is possible through lines routed in parallel.

Features

- long service life
- illumination 180°
- brilliant colours

Explosion protection

Ex protection type

Ex II 2G EEx d IIC T6
Class 1, Div. 2 - Class 1, Zone 1

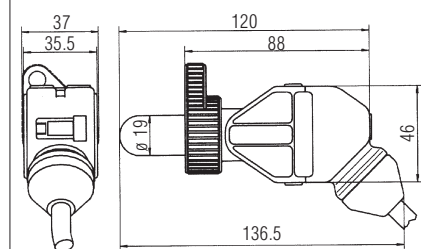
Certification

PTB 97 ATEX 1065 X
UL E184198

Ambient temperature

-40 °C to +50 °C (-55 °C on request)

Dimensions



Selection chart

Wiring diagram	Colour LED	Code no.	Colour actuator	Code no.
	red	1	red	3
	green	2	green	4
	yellow	3	yellow	5
	white	4	white	6
	blue	5	blue	7

Complete order no.

Lamp module without actuating element

07-3353-31 3^{*)}

Actuating element

Standard

05-0003-0001 00

for Offshore

05-0003-0001 00BN

Please enter code number.

^{*)} Standard length 3 m, indicate greater lengths in plain text.



Illuminated button for installation on panel (front installation with connection cable)

BARTEC



Description

As completely certified equipment, BARTEC modules with connection cable can be directly installed in industrial control cabinets in hazardous areas. A high IP degree of protection can be maintained due to easy installation of the actuating elements in the control cabinet. The respective modules can be single-handedly installed to the actuating elements.

Features

- high service life
- brilliant colours
- single-handed installation

Technical data

Protection class

Illuminated button IP 66/67 in conjunction with actuating element

Rated insulation voltage

300 V

Rated operating voltage

AC 12 V to 250 V (-55 °C to +50 °C)
DC 12 V to 60 V (-55 °C to +50 °C)
AC/DC 12 V to 24 V (-55 °C to +60 °C)

Power consumption

≤ 1 W

Lamp

LED: red, green, yellow, white, blue

Illumination

very bright, over a visible angle of 180°

Contact element

Nominal voltage

AC 250 V

Nominal current

AC 5 A

Contacts

1 NC or 1 NO as snap switch element

Switching capacity

AC-15 1 A/230 V
DC-13 0.25 A/24 V

Enclosure material

Thermoplastic

Connection

flexible cable 4 x 0.75 mm² (ø 7.2 mm)

Electrical life

>10⁵ running hours

Mechanical life

>10⁵ switching cycles

Storage and transport temperature

-55 °C to +70 °C

Weight

approx. 200 g without cable

Cable length

3 m, indicate greater lengths in plain text

Mounting

by bayonet lock

Shock resistance

DIN IEC 68 Part 2-27, 30 g 18 ms

Explosion protection

Ex protection type

Ex II 2G EEx d IIC T6
Class 1, Div. 2 - Class 1, Zone 1

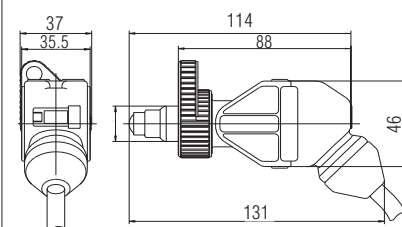
Certification

PTB 97 ATEX 1065 X
UL E184198


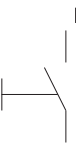
Ambient temperature

-40 °C to +50 °C
+60 °C (AC/DC 12 to 24 V)
-55 °C on request

Dimensions



Selection chart

Type of contact	Code no.	Colour LED	Code no.	Colour actuator	Code no.
1 NC 	7	red	1	red	5
		green	2	green	6
		yellow	3	yellow	7
1 NO 	8	white	4	white	8
		blue	5	blue	9

Complete order no.

Illuminated button
without actuating element

07-3363-3 ☐ ☐ 3¹⁾

Actuating element
Standard
for Offshore

05-0003-006 ☐ 00

05-0003-006 ☐ 00BN

Please enter code number.

¹⁾ Standard length 3 m, indicate greater lengths in plain text.

Note

The connection cable for illuminated buttons must be installed in a way which ensures that no capacitive influence (voltage transmission) is possible through lines routed in parallel.



Potentiometer for installation on panel (front installation with connection cable)

BARTEC



Description

As completely certified equipment, BARTEC modules with connection cable can be directly installed in industrial control cabinets in hazardous areas. A high IP degree of protection can be maintained due to easy installation of the actuating elements in the control cabinet. The respective modules can be single-handedly installed to the actuating elements.

Features

- high end stop torque
- high IP degree of protection
- single-handed installation

Technical data

Protection class

Potentiometer IP 66/67 in conjunction with actuating element

Rated insulation voltage

$U_i = 500$ V, only with corresponding cable
 $U_i = 400$ V, corresponds to standard version with oilflex 100

Max. rated operating voltage

AC/DC 320 V

Resistance

1 k Ω to 10 k Ω

Characteristic curve

linear

Resistance tolerance

± 20 %

Power consumption

max. 1 W

Resistance material

carbon layer on ceramics

Rotation range

mech. 285° -5°
electr. effective approx. 250°

Torque (beginning)

0.5 to 1.5 Ncm

Torque (end stop)

≥ 100 Ncm

Enclosure material

Thermoplastic

Connection

flexible cable 3 x 0.75 mm²

Mechanical life

25000 sinusoidal cycles

Storage/transport temperature

-55 °C to +70 °C

Weight

approx. 240 g with 1 m cable

Cable length

3 m, indicate greater lengths in plain text

Explosion protection (with connection cable)

Ex protection type

Ex II 2G EEx d IIC T6

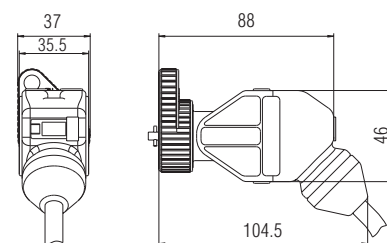
Certification

PTB 05 ATEX 1065 X

Ambient temperature

-40 °C to +60 °C
(-55 °C on request)

Dimensions



Selection chart

Wiring diagram	Resistance value	Code no.
	1 k Ω	4
	2.2 k Ω	5
	4.7 k Ω	6
	10 k Ω	7

Other resistances on request.

Complete order no.

Potentiometer without actuating element

Please enter code number.

*) Standard length 3 m, indicate greater lengths in plain text.

07-3373-3D 3*)

Actuating element

Standard (Scale 1-10)

for Offshore (Scale 1-10)

Order no.

05-0003-007600

05-0003-007600BN

Notes for installation and inspection:

At rated voltage: \leq AC 40 V/ \leq DC 120 V
(protection low voltage in accordance with VDE 0100 T. 410)
potentiometer drive shaft can be operated without actuating element.

At rated voltage: \geq AC 40 V to max. AC/DC 320 V
potentiometer drive shaft can only be operated with actuating element
or has to be deenergized.



Actuating elements

Features

- easy installation
- certified for zones 1 and 21
- high IP degree of protection

Description

BARTEC offers a variety of actuator versions and options for the local ComEx control and indicating units.

All actuating elements are of high-quality thermoplast and correspond to protection class IP 66/IP 67. Useful accessories complete the actuating elements.

For offshore applications special oil-resistant attachments are available.

➔ Technical data

Impact resistance

7 Nm
(lamp actuators 4 Nm)

Enclosure material

Enclosure	thermoplast
Seals	EPDM (NBR)

Protection class

IP 66/IP 67

➔ Explosion protection

Ex protection type

Ex II 2GD EEx e II
Class 1, Div. 2 - Class 1, Zone 1

Certification

PTB 00 ATEX 3114 U
UL E184198

Ambient temperature

(-55 °C to +70 °C)
-20 °C to +70 °C for Zone 21 and 22



Selection chart


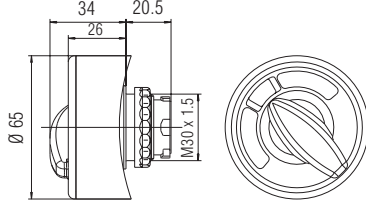
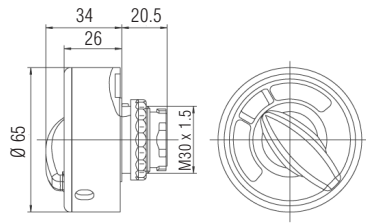

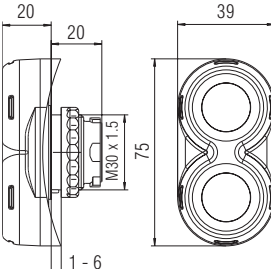
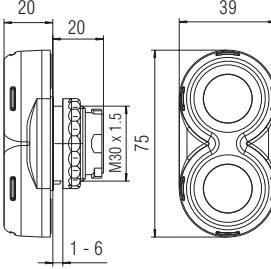

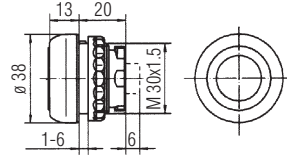

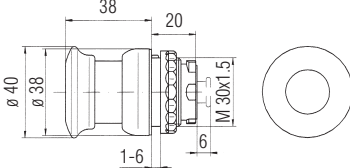
Illustration	Dimensions	Description	Order no.
	<p>for ComEx enclosure</p>  <p>for Control unit ComEx 316L</p> 	<p>Position selector switch black with protective collar, lockable* only for switch module (2-pole)</p> <p>0 - I for ComEx enclosure for control unit (flat)</p> <p>I - II for ComEx enclosure for control unit (flat)</p> <p>I - 0 - II for ComEx enclosure for control unit</p> <p>HAND - 0 - AUTO for ComEx enclosure for control unit (flat)</p> <p>MAN - 0 - AUTO for ComEx enclosure for control unit (flat)</p> <p>*In principle, there are 3 boreholes in the protective collar to fit padlocks. If no further details are given on which switching position is to be locked, the boreholes are provided in the switch position 0 (I), other to customer specifications.</p>	<p>05-0003-007101 05-0003-007001 05-0003-007102 05-0003-007002 05-0003-007303 05-0003-007203 05-0003-007324 05-0003-007224 05-0003-007325 05-0003-007225</p>
	<p>for ComEx enclosure</p>  <p>for Control unit ComEx 316L</p> 	<p>Double push button actuator for ComEx enclosures with rubber membrane, supplied with five loose coloured centre discs: red, green, yellow, white, black</p> <p>For offshore applications (with NBR seal)</p> <p>Double push button actuator for control units with rubber membrane, supplied with five loose coloured centre discs: red, green, yellow, white, black</p> <p>For offshore applications (with NBR seal)</p>	<p>05-0003-007500</p> <p>05-0003-007500BN</p> <p>05-0003-007400</p> <p>05-0003-007400BN</p>
		<p>Pushbutton with rubber membrane, supplied with five loose coloured centre discs: red, green, yellow, white, black Weight: 24 g</p> <p>For offshore applications (with NBR seal)</p>	<p>05-0003-000700</p> <p>05-0003-000700BN</p>
		<p>Mushroom pushbutton black, Weight: 24 g</p> <p>For offshore applications (with NBR seal)</p>	<p>05-0003-001800</p> <p>05-0003-001800BN</p>



Illustration	Dimensions	Description	➔ Order no.
		Emergency Stop DIN EN 60204 T1/VDE 0113 T1 and EN 60947-5-1/DIN VDE 0660 T200, pushbutton marked "NOT-AUS EMERGENCY STOP" "Pull to Release" Weight: 46 g For offshore applications (with NBR seal)	05-0003-000800 05-0003-000800BN
		Locking mushroom pushbutton Push in without key, unlock with key; Lock (DOM) 4 A 185 Weight: 70 g For offshore applications (with NBR seal)	05-0003-001203 05-0003-001203BN
		Lock (DOM) lockable in both positions, key retractable in both positions, lock 4 A 185 lockable in the depressed position, key retractable in the depressed position, lock 4 A 185 lockable in the initial position, key retractable in the initial position, lock 4 A 185 (tip lock) Weight: 69 g *For offshore applications (with NBR seal)	05-0003-001200 *05-0003-001200BN 05-0003-001201 *05-0003-001201BN 05-0003-001202 *05-0003-001202BN
		Lock (RONIS) Lock: 455 Lockable in both positions Key retractable in both positions For offshore applications (with NBR seal)	05-0003-006100 05-0003-006100BN
		Position selector switch BS 2 positions 0 - I, black, for control unit 90° turned for ComEx Position selector switch BS 3 positions I - 0 - II, black, I + II latching; for control unit 90° turned for ComEx I + II momentary contact; for control unit 90° turned for ComEx I - latching, II - latching; for control unit 90° turned for ComEx I - momentary contact; II - latching; for control unit 90° turned for ComEx Weight: 33 g *For offshore applications (with NBR seal)	05-0003-000900BS 05-0003-000901BS 05-0003-001000BS 05-0003-001100BS 05-0003-001001BS 05-0003-001101BS 05-0003-001002BS 05-0003-001102BS 05-0003-001003BS 05-0003-001103BS



Illustration	Dimensions	Description	➔ Order no.
		Position selector switch 3 positions I - 0 - II, black, I + II latching; for control unit 90° turned for ComEx I + II momentary-contact; for control unit 90° turned for ComEx I - latching, II - momentary-contact; for control box, turned 90° for ComEx I - momentary-contact; II - latching; for control box, turned 90° for ComEx Weight: 33 g *For offshore applications (with NBR seal)	05-0003-001000 *05-0003-001000BN 05-0003-001100 *05-0003-001100BN 05-0003-001001 *05-0003-001001BN 05-0003-001101 *05-0003-001101BN 05-0003-001002 *05-0003-001002BN 05-0003-001102 *05-0003-001102BN 05-0003-001003 *05-0003-001003BN 05-0003-001103 *05-0003-001103BN
		Position selector switch 2 positions 0 - I, black for control unit 90° turned for ComEx Weight: 33 g *For offshore applications (with NBR seal)	05-0003-000900 *05-0003-000900BN 05-0003-000901 *05-0003-000901BN
		Lamp Weight: 19 g red green yellow with blue *For offshore applications (with NBR seal)	05-0003-001300 *05-0003-001300BN 05-0003-001400 *05-0003-001400BN 05-0003-001500 *05-0003-001500BN 05-0003-001600 *05-0003-001600BN 05-0003-001700 *05-0003-001700BN
		Illuminated button actuator Weight: 19 g red green yellow white blue *For offshore applications (with NBR seal)	05-0003-006500 *05-0003-006500BN 05-0003-006600 *05-0003-006600BN 05-0003-006700 *05-0003-006700BN 05-0003-006800 *05-0003-006800BN 05-0003-006900 *05-0003-006900BN
		Potentiometer actuator with scale gradation 0-10 (durable and abrasion-resistant), black Weight: 28 g *For offshore applications (with NBR seal)	05-0003-007600 05-0003-007600BN
		Blanking plug to cover unused holes in the front panel Weight: 20 g For offshore applications (with NBR seal)	05-0003-001900 05-0003-001900BN



ComEx control stations



Features

- 3 standard enclosures
- Easy to install
- Extremely flexible
- Customer-tailored solutions

Description

ComEx is a flexible system offering standard as well as customer-specific local control and indicating units.

You have the choice between three standard enclosures which can accommodate up to three different control and indicating devices. Combinations of up to three ComEx enclosures are possible.

Either stuffing box glands in M20 x 1.5 and M25 x 1.5 made of plastic or cable glands made of metal are available for the electrical connection. The plastic glands require no lock nuts.

Metal glands are screwed into a metal earth plate sheet inside of the enclosure. Maximum amount of cable glands: two off M20.

To ensure easier operation on site, each enclosure can be equipped with an individual info-label.

For offshore applications special oil-resistant attachments are available.

➔ Explosion protection

Ex protection type

- Ex II 2G EEx edm IIC T6
- Ex II 2D IP 66 T 80 °C

AEx edm IIC/Ex edm IIC

Class I Zone 1

Class I, Div. 2 Groups A, B, C, D

Certification

PTB 00 ATEX 1068

UL E184198

Permissible ambient temperature

-55 °C to +60 °C

(-20 °C to +60 °C for Zone 21 and 22)

➔ Technical data

Connection

Terminals 2.5 mm²

PE conductor terminals

4 x 2.5 mm²

Rated insulation voltage

max. AC 690 V

Nominal current

max. 16 A

Cable entry

standard version:

M 20 x 1.5 for cable Ø 6 to 12 mm

special versions:

M 20 x 1.5 for cable with Ø 5 to 9 mm

M 25 x 1.5 for cable with Ø 13 to 18 mm

M 25 x 1.5 for cable with Ø 9 to 16 mm

Enclosure

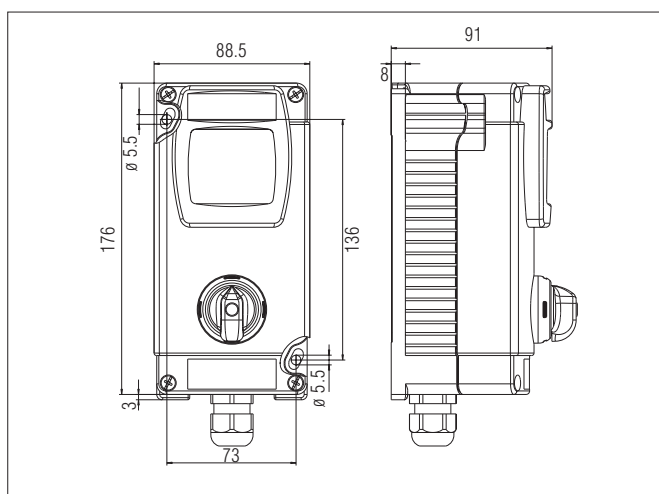
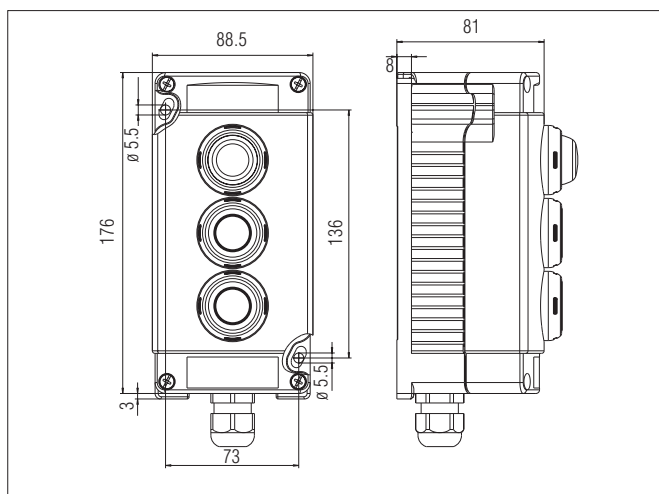
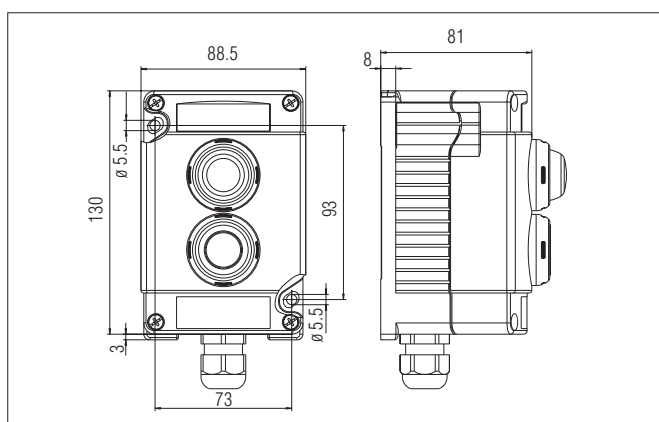
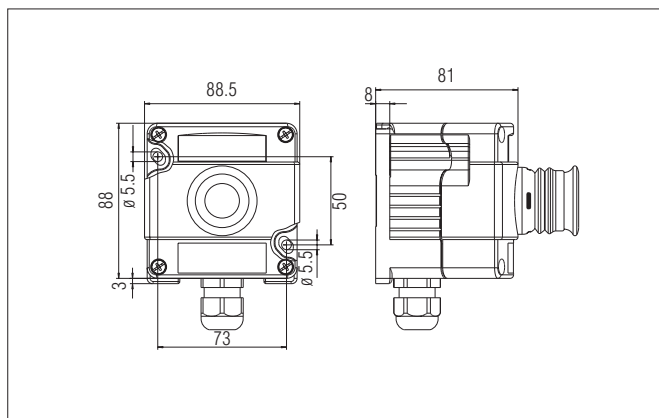
Thermoplastic

Protection class

IP 66/IP 67



Dimensions





ComEx control stations 316L

Features

- Standard enclosures
- Corrosion resistance
- Customer-tailored solutions

Description

ComEx 316L are stainless steel standard enclosures for the installation of control, signalling and display equipment. The enclosures are certified for use in zones 1 and 2 as well as zones 21 and 22.

The equipment is highly corrosion resistant due to high quality stainless steel 316L (1.4404). Either plastic or metal glands are used for electrical connection.

On request, BARTEC equips enclosures with control, signalling and display equipment and cable glands. BARTEC supplies the labels requested.

➔ Explosion protection

Ex protection type

- ⊕ II 2G EEx edm IIC T6
- ⊕ II 2D IP 65 T 80 °C

Certification

PTB 02 ATEX 1159 for II 2G
IBExU00ATEX1079 for II 2D

Permissible ambient temperature

-55 °C to +60 °C
(-20 °C to +60 °C for II 2D)

➔ Technical data

Connection

Terminals 2.5 mm²

Bohrung für Leitungseinführung

standard version:

1 x M 20 x 1.5

special versions:

2 x M 20 x 1.5 up to max. 1 x M 40 x 1.5

Enclosure

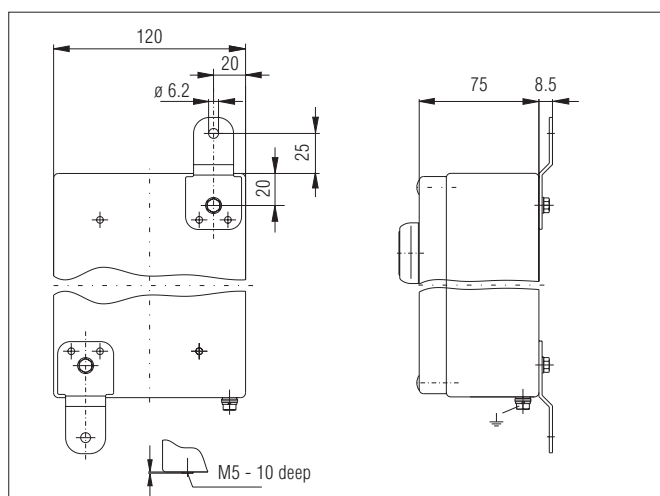
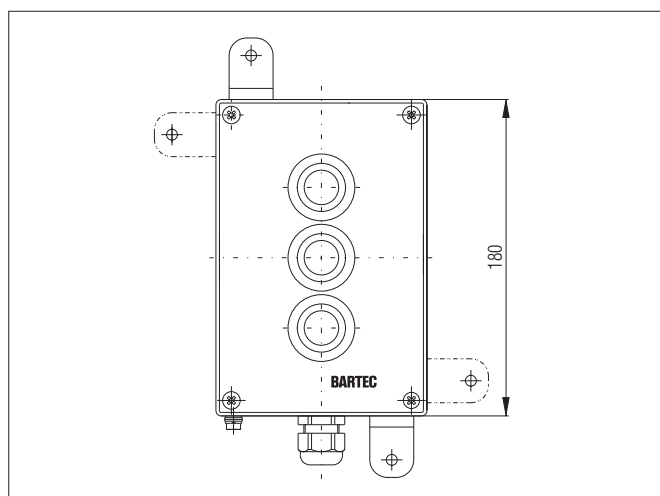
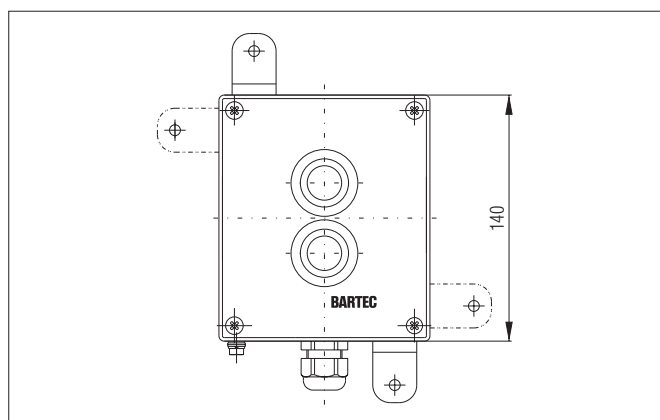
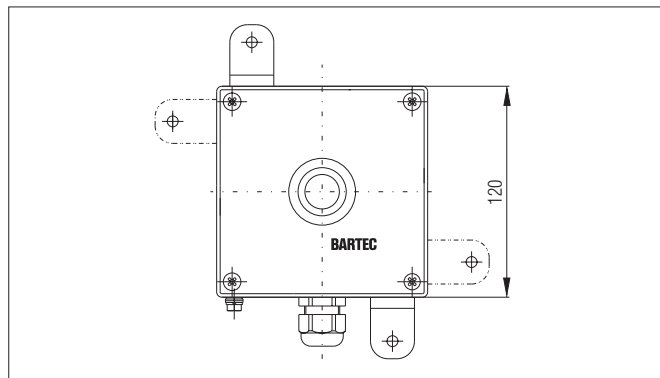
High-quality stainless steel 316L (1.4404)

Protection class

IP 65



Dimensions





Description

The three standard enclosures, single, double and triple enclosures, can be combined with different actuators, switches and indicator modules. Individual ComEx enclosures for individual applications. (Also available in stainless steel).

Combinations of max. 3 ComEx enclosures are possible.

Special oil-resistant actuating elements are available for offshore applications.

Features

- 3 standard enclosures
- Easy to install
- Extremely flexible
- For Zone 1 and 2, 21 and 22

Actuators

Explosion protection

Ex protection type Ex II 2GD EEx e II
Class 1, Div. 2 - Class 1, Zone 1

Certification PTB 00 ATEX 3114 U, UL E184198, SIMTARS

Technical data

Shock resistance 7 Nm

Enclosure material Enclosure thermoplast
Seals EPDM

Protection class IP 66/IP 67

Selection chart Actuators

Illustration	Description	Code no.
	Pushbutton with rubber membrane and with four loose labels: red, green, yellow, white, black	P7
	Double pushbutton actuator with rubber membrane, 5 loose labels in red, green, yellow, white, black	P2
	Emergency Stop marked 'NOT-AUS EMERGENCY STOP'	N8
	Locking mushroom push button pushed in without a key, unlocked with a key utilised for Emergency/Off function DOM lock 4 A 185	K3
	Mushroom pushbutton , black	P8
	Position selector switch 2 positions, 0 + I latching	S9
	Position selector switch , 3 positions I-0-II I + II latching I + II momentary-contact I latching, II momentary-contact I momentary-contact, II latching	S0 S1 S2 S3
	Lock lockable in both positions, key retractable in both positions lock 4 A 185 lockable in its depressed position, key retractable in its depressed position lock 4 A 185 lockable in its initial position, key retractable in its initial position lock 4 A 185 (tip lock)	K0 K1 K2
	Lock (RONIS) lockable in both positions key retractable in both positions lock 445	K4
	Lamp red green yellow white blue	LR LG LY LW LB
	Illuminated button actuator	T
	Blanking plug black, to cover unused holes in the front panel	B1
	Potentiometer actuating element black, scale 1 - 10	D0



Modules

Explosion protection

Switch module

Ex protection type

Ex II 2G EEx de IIC

Ex I M2 EEx de I

Class 1, Div. 2 - Class 1, Zone 1

Certification

PTB 99 ATEX 1043 U and UL E184198

Indicator light/Illuminated button

Ex protection type

Ex II 2G EEx de IIC

Ex I M2 EEx de I

Class 1, Div. 2 - Class 1, Zone 1

Certification

PTB 97 ATEX 1064 U and UL E184198

Potentiometer

Ex protection type

EEx de IIC

EEx de I

Certification

PTB 05 ATEX 1064 U

Measuring instrument

Ex protection type

Ex II 2G EEx e II

Ex I M2 EEx e I

Certification

PTB 99 ATEX 2032 U

Technical data

Switch module

Rated insulation voltage

690 V

Nominal currents

AC-15 400 V/10 A

(AC-12) (400 V/16 A)

Indicator light

Rated insulation voltage

AC 12 V to 250 V (-55 °C to +50 °C)

DC 12 V to 60 V (-55 °C to +50 °C)

AC/DC 12 V to 24 V (-55 °C to +60 °C)

Lamp

LED

Electrical life

> 10⁵ running hours

Illuminated button

Rated insulation voltage

AC 12 V to 250 V (-55 °C to +50 °C)

DC 12 V to 60 V (-55 °C to +50 °C)

AC/DC 12 V to 24 V (-55 °C to +60 °C)

Lamp

LED

Electrical life

> 10⁵ running hours

Contact element, Contacts

1 NC or 1 NO

Nominal voltage

AC-15 230 V

Nominal current

1 A

Potentiometer modul

Rated insulation voltage

AC/DC 320 V

Nominal currents

max. 1 W

Resistance values

1 kΩ to 10 kΩ

Measuring instrument

Operating voltage

420 V



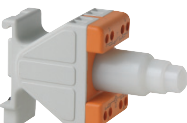


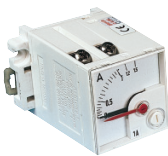
Nominal current

0.7 A to 10.7 A

Measurement range

0 - 1 A to 0 - 16 A

Selection chart Modules

Illustration	Description	Code no.
	Switch module 1 NC/1 NO 2 NC 2 NO	4 1 2
	Indicator light red green yellow white blue	R G Y W B
	Illuminated button red 1 NO green 1 NO yellow 1 NO white 1 NO blue 1 NO red 1 NC green 1 NC yellow 1 NC white 1 NC blue 1 NC	RB GB YB WB BB RA GA YA WA BA
	Potentiometer modul Resistance values 1 kΩ 2.2 kΩ 4.7 kΩ 10 kΩ	4 5 6 7
	Terminal block with 6 modular terminals 2.5 mm² EEx e II	6
	Measuring instrument 1 A 03-9020-0024 5 A 03-9020-0025	MM 1 MM 5

Complete order no.

Please enter code number.

This combination can be changed with this



Measuring instrument



Control unit, single **07-3511-10**



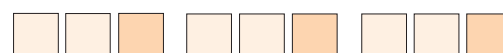
Control unit, double **07-3512-10**



Control unit, double **07-3512-10**



Control unit, triple **07-3513-10**



Control unit, triple **07-3513-10**





Control switch

Features

- For Zone 1 and 2, 21 and 22
- Positive break operation
- Latched and momentary-contact positions
- easy installation
- Customer-specific solutions

Description

This control switch has been designed to solve the variety of problems encountered in chemical and petrochemical plants and on explosion-proofed electrical machinery in zones 1 and 2 and in Zone 21 and 22. Four switch contacts as opening and closing elements in different permutations permit a variety of functions. The opener has a positive break operation. The switch actuator offers latched and momentary-contact positions with different switch positions. The control switch is supplied in double or triple enclosures, or in combination with other command devices, in control units. The actuating element can be locked with up to max. 3 padlocks.

Explosion protection

Ex protection type

Ex II 2G EEx de IIC T6

Ex II 2D IP 66 T 80 °C

AEx edm IIC/Ex edm IIC

Class I Zone 1

Class I, Div. 2 Groups A, B, C, D

Certification

PTB 00 ATEX 1068

UL E184198

Permissible ambient temperatures

-55 °C to +60 °C

-20 °C to +60 °C for Zone 21 and 22

Technical data

Connection

Terminals 2.5 mm²

Conductor terminals

4 x 2.5 mm²

Rated insulation voltage

max. AC 690 V

Nominal current

max. 16 A

Cable entry

Standard version:

M 20 x 1.5 for cables with ø 6 to 12 mm

Special version:

M 20 x 1.5 for cables with ø 5 to 9 mm

M 25 x 1.5 for cables with ø 13 to 18 mm

M 25 x 1.5 for cables with ø 9 to 16 mm

Enclosure material

Thermoplastic

Protection class

IP 66

Contact material

AgSnO₂

Switching function

4 switch contacts

NC/NO in different switch permutations

Latching and momentary-contact functions with different switch positions

Contacts

contacts with positive break operation

Switch isolator

DIN EN 60947-3 (main motor switch)

P/AC-3/AC-23 A AC-3 AC-23

230 V 3ph/3kW 1ph/2.2 kW

400 V 3ph/5.5 kW 1ph/3 kW

I_e = AC-23/400 V/10 A

Control switch DIN EN 60947-5-1

(auxiliary circuit switch)

AC-15 400 V 10 A

AC-12 400 V 16 A

DC-13 24 V 1 A

Electrical data

Rated insulation voltage

U_i = 690 V

U_e = 400 V

Rated impulse strength

U_{imp} = 6 kV

Conditional rated short/circuit current at 400 V

i_e = 4 kA

Short circuit current

(general-purpose l.v.h.b.c. back-up fuse for the protection of cables and circuits)

max. 16 A

Nominal thermal current

(+40 °C) I_{the} = 16 A

(+60 °C) I_{the} = 11 A

Dimensions

See dimensions for complete device



Selection chart

Labelling	Code no.	Labelling	Code no.	Switching arrangement of control switch	Code no.	Switching arrangement of control switch	Code no.
0 - I	01	LOWER - RAISE	14		A01		C06
I - II	02	REMOTE - LOCAL	15				
I - 0 - II	03	OFF - OPERATION - ON	16		A02		C07
0 - I - II	04	OFF - 0 - ON	17				
0 - I - II - III	05	UP - 0 - DOWN	18		A03		E08
0 - I - II - III - IV	06	OUT - OFF - MANUAL	19				
AUS - EIN	07	LOCAL - REMOTE - AUTO	20		A04		E09
OFF - ON	08	STOP - 0 - START	21				
MANUAL - 0 - AUTO	09	AUS - AUTO - EIN	22		H05		L01
MANUAL - 0 - AUTO - ON	10	OFF - AUTO - ON	23				
MANUAL - OPERATION - I	11	0 - IN - START	24				
STOP - START	12	UNLOCKED - LOCKED	25				
MANUAL - AUTO	13						

Other variants available.

Switching arrangement for switch isolator

	N01
	N02

Complete order no.

Please enter code numbers.

Control unit, double **07-3512-10G**

Control unit, triple **07-3513-10G**

Labelling position selector

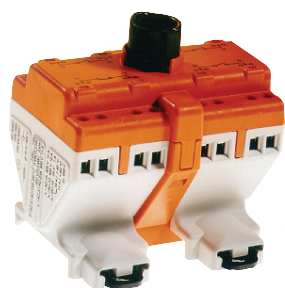
Switching arrangement

Switch module or indicator light

Other labelings and switching arrangements on request.

*In principle, there are 3 bore holes at the protective shroud for padlocks.

Where no further information is given on the end position, bore holes are drilled in the position 0 (I) or as requested.



Control switch

Features

- Contacts with positive break operation
- Latched and momentary-contact positions
- Certified according to Ex directive 94/9/EC

Description

This control switch has been designed to solve the variety of problems encountered in chemical and petrochemical plants and on explosion-proofed electrical machinery. Four switch contacts as opening and closing elements in different permutations permit a variety of functions. The opener has a positive break operation. The switch actuator offers latched and momentary-contact positions with different switch positions.

The control switch can be installed quickly and directly into double or triple ComEx enclosures, or in combination with other command devices in control units

Explosion protection

Ex protection type

- II 2G EEx de IIC
- I M2 EEx de I
- Class 1, Div. 2 - Class 1, Zone 1

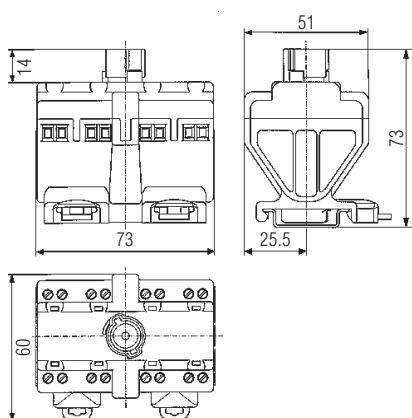
Certifications

PTB 99 ATEX 1043 U
UL E184198

Permissible ambient temperature

-55 °C to +60 °C

Dimensions



Technical data

Connection

Terminals 2.5 mm², fine stranded

Contact material

AgSnO₂

Enclosure material

Thermoplastic

Installation

on TS 35 x 7.5 mounting rail

Switch function

max. 4 switch contacts
different NC/NO contact assemblies
latching and momentary-contact functions
with different switch positions

Contacts

contacts with positive break operation

Installation

able to be installed in double and triple
ComEx enclosures in control units

Switch isolator

DIN EN 60947-3 (main motor switch)

P/AC-3/AC-23	AC-3	AC-23
230 V	3ph/3kW	1ph/2.2 kW
400 V	3ph/5.5 kW	1ph/3 kW

I_e = AC-23/400 V/10 A

Control switch DIN EN 60947-5-1

(auxiliary circuit switch)

AC-15	400 V	10 A
AC-12	400 V	16 A
DC-13	24 V	1 A

Electrical data

Rated insulation voltage

U_i = 690 V
U_e = 450 V

Rated impulse strength

U_{imp} = 6 kV

Conditional rated short-circuit current at 400 V

I_e = 4 kA

Short-circuit current

(general-purpose l.v.h.b.c back-up fuse for the protection of cables and circuits)
max. 16 A

Nominal thermal current

(+40 °C) I_{the} = 16 A
(+60 °C) I_{the} = 11 A



Selection chart

Contact arrangement of control switch	Code no.	Contact arrangement of control switch	Code no.
	A01		C06
	A02		C07
	A03		E08
	A04		E09
	H05		L01
Contact arrangement of switch-isolator			
	N01		N02

Further contact versions are available upon request.



Complete order no.

07-3331-1

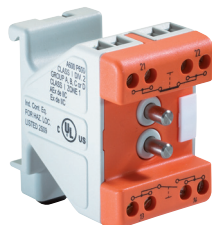


Please enter code number.

Selection chart

Illustration/Dimensions	Description	Order no.
<p>For ComEx enclosure</p> <p>For control unit ComEx 316L</p>	<p>Black position selector with protective collar, lockable* only for 4-pole switch</p> <p>0 - I for ComEx enclosure für Control unit (flat)</p> <p>I - II for ComEx enclosure für Control unit (flat)</p> <p>I - 0 - II for ComEx enclosure für Control unit</p> <p>0 - I - II for ComEx enclosure für Control unit (flat)</p> <p>0 - I - II - III for ComEx enclosure für Control unit (flat)</p> <p>0 - I - II - III - IV for ComEx enclosure für Control unit (flat)</p> <p>HAND - 0 - AUTO for ComEx enclosure für Control unit (flat)</p>	<p>05-0003-006201 05-0003-006301 05-0003-006202 05-0003-006302 05-0003-006203 05-0003-006303 05-0003-006204 05-0003-006304 05-0003-006205 05-0003-006305 05-0003-006206 05-0003-006306 05-0003-006209 05-0003-006309</p>

*In principle, there are 3 boreholes in the protective collar to fit padlocks. If no further details are given on which switching position is to be locked, the boreholes are provided in the switch position 0 (I), other to customer specifications.



Switch module for rail-mounted installation with terminals

Technical data

Protection class

Switch module IP 66 in conjunction with
ComEx-enclosure
Terminals IP 20 (IEC 60529)

Rated insulation voltage

690 V

Rated voltage

400 V	400 V	110 V	24 V	230 V
-------	-------	-------	------	-------

Utilization category

AC-12	AC-15	DC-13	DC-13
-------	-------	-------	-------

Rated operating currents

16 A	10 A	0.5 A	1 A	10 A
------	------	-------	-----	------

Nominal currents I_{the}

16 A/+40 °C, 11 A/+60 °C

Contact options

contacts with positive break operation
(self-cleaning)
1 NC and 1 NO or
2 NC or 2 NO

Contact material

AgSnO₂

Enclosure material

Thermoplastic

Connection

Terminals 2.5 mm², fine stranded

Mechanical life

10⁶ switching cycles

Storage-/transport temperature

-55 °C to +70 °C

Weight

approx. 70 g

Mounting

on mounting rail TS 35 x 7.5

Shock resistance

DIN IEC 68 part 2-27, 30 g 18 ms

Explosion protection

Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I
Class 1, Div. 2 - Class 1, Zone 1

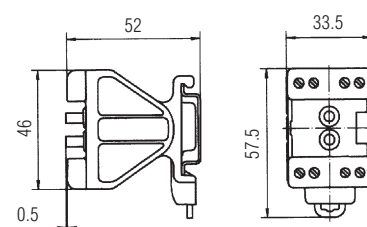
Certification

PTB 99 ATEX 1043 U
UL E184198

Ambient temperature

-55 °C bis +60 °C

Dimensions



Selection chart

Type of contacts	Code no.	Actuating element	Code no.
2 NC 	1	Pushbutton	0700
		Double push button actuator	7400
		Emergency stop NOT-AUS	0800
		Selector switch 0 + I latching, 2 positions	0900
		Selector switch I + II latching, 3 positions	1000
2 NO 	2	Selector switch I + II momentary-contact, 3 positions	1001
		Selector switch I latching, II momentary-contact, 3 positions	1002
		Selector switch I momentary-contact, II latching, 3 positions	1003
		Mushroom pushbutton, black	1800
		Lockable in both positions, DOM lock	1200
1 NC + 1 NO 	4	Lockable in the depressed position, DOM lock	1201
		Lockable in the initial position, DOM lock	1202
		Locking-type mushroom pushbutton	1203
		Lockable in both positions, RONIS lock	6100

Complete order no.

Switch module

without actuating element

07-3321-1 00

Actuating element

Standard

for Offshore

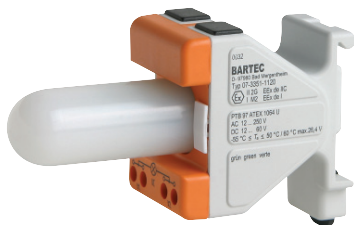
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05-0003-00 05-0003-00 BN



Lamp module for rail-mounted installation

BARTEC



Lamp module for rail-mounted installation with terminals

Technical data

Protection class

Lamp module IP 67 in conjunction with actuator element

Rated insulation voltage

300 V

Rated operating voltage

AC 12 V to 250 V (-55 °C to +50 °C)
DC 12 V to 60 V (-55 °C to +50 °C)
AC/DC 12 V to 24 V (-55 °C to +60 °C)

Power consumption

< 1 W

Lamp

LED

red, green, yellow, white, blue

Illumination

very bright, over a visible angle of 180°

Enclosure material

Thermoplastic

Connection

Terminals 2.5 mm², fine stranded

Electrical life

>10⁵ running hours

Storage-/transport temperature

-55 °C to +70 °C

Weight

approx. 90 g

Mounting

on mounting rail TS 35 x 7.5
(DIN EN 50022)

Shock resistance

DIN IEC 68 part 2-27, 30 g 18 ms

Explosion protection

Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I
Class 1, Div. 2 - Class 1, Zone 1

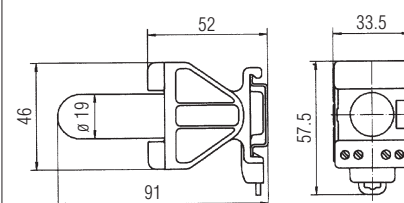
Certification

PTB 97 ATEX 1064 U
UL E184198

Ambient temperature

-55 °C to +50 °C

Dimensions



Selection chart

Wiring diagram	Colour LED	Code no.	Colour actuator	Code no.
	red	1	red	3
	green	2	green	4
	yellow	3	yellow	5
	white	4	white	6
	blue	5	blue	7

Complete order no.

Lamp module

without actuating element

07-3351-11 ☐ 0

Actuating element

Standard

05-0003-0001 ☐ 00

for Offshore

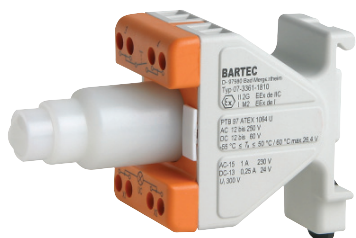
05-0003-0001 ☐ 00BN

Please enter code number.



Illuminated button for rail-mounted installation

BARTEC



Illuminated button for rail-mounted installation with terminals

Technical data

Protection class

Illuminated button IP 66/67 in conjunction with ComEx enclosure
Terminals IP 20 (IEC 60529)

Rated insulation voltage

300 V

Rated operating voltage

AC 12 V to 250 V (-55 °C to +50 °C)
DC 12 V to 60 V (-55 °C to +50 °C)
AC/DC 12 V to 24 V (-55 °C to +60 °C)

Power consumption

≤ 1 W

Lamp

LED: red, green, yellow, white, blue

Illumination

very bright, over a visible angle of 180°

Contact element

Nominal voltage

AC 250 V

Nominal current

AC 5 A

Contacts

1 NC or 1 NO
as snap switch element

Switching capacity

AC-15 1 A/230 V
DC-13 0.25 A/24 V

Enclosure material

Thermoplastic

Connection

Terminals 2.5 mm², fine stranded

Electrical life

>10⁵ running hours

Mechanical life

>10⁵ switching cycles

Storage/transport temperature

-55 °C to +70 °C

Weight

approx. 110 g

Mounting

on mounting rail TS 35 x 7.5
(DIN EN 50022)

Shock resistance

DIN IEC 68 Part 2-27, 30 g 18 ms

Explosion protection

Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I
Class 1, Div. 2 - Class 1, Zone 1

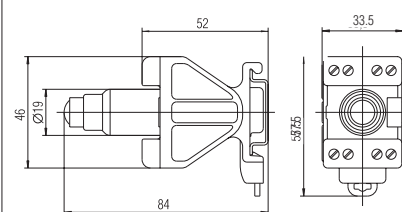
Certification

PTB 97 ATEX 1064 U
UL E184198

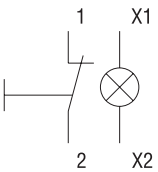
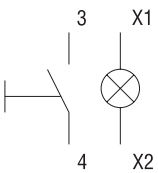
Ambient temperature

-55 °C to +50 °C
+60 °C (AC/DC 12 to 24 V)

Dimensions



Selection chart

Type of contact	Code no.	Colour LED	Code no.	Colour actuator	Code no.
1 NC 	7	red	1	red	5
		green	2	green	6
		yellow	3	yellow	7
1 NO 	8	white	4	white	8
		blue	5	blue	9

Complete order no.

Illuminated button

without actuating element

07-3361-1 0

Actuating element

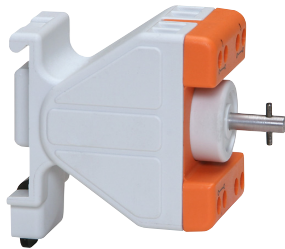
Standard

05-0003-006 00

for Offshore

05-0003-006 00BN

Please enter code number.



Potentiometer for rail-mounted installation with terminals

Technical data

Protection class

Potentiometer IP 66/67
in conjunction with a ComEx enclosure
Terminals IP 20 (IEC 60529)

Rated insulation voltage

500 V

Max. rated voltage

AC/DC 320 V

Resistance

1 k Ω to 10 k Ω

Curve shape

linear

Resistance tolerance

$\pm 20\%$

Rated output

max. 1 W

Resistor material

carbon film on ceramics

Rotation

mech. 285° -5°
electr. about 250°

Torque (beginning)

0.5 to 1.5 Ncm

Torque (end stop)

≥ 100 Ncm

Enclosure material

thermoplastic

Connection

Double terminals 2 x 2.5 mm², fine stranded

Mechanical life

25000 sinusoidal cycles

Storage/transport temperature

-55 °C to +70 °C

Weight

approx. 71 g

Explosion protection

Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I

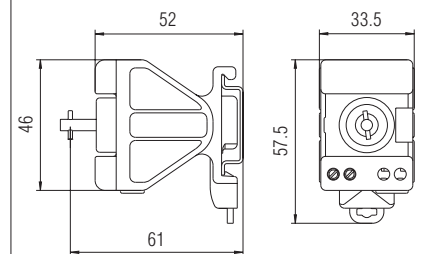
Certification

PTB 05 ATEX 1064 U

Ambient temperature

-55 °C to +60 °C

Dimensions



Selection chart

Wiring diagram	Resistance	Code no.
	1 k Ω	4
	2.2 k Ω	5
	4.7 k Ω	6
	10 k Ω	7

Other resistances on request.

Complete order no.

Potentiometer
without actuating element

07-3371-1D ☐ 0

Please enter code number.

Potentiometer actuating element

Standard (scale 1-10)

Order no. 05-0003-007600

for Offshore (scale 1-10)

Order no. 05-0003-007600BN

Notes for installation and inspection:

At rated voltage: \leq AC 40 V/ \leq DC 120 V
(protection low voltage in accordance with VDE 0100 T. 410)
potentiometer drive shaft can be operated without actuating element.

At rated voltage: \geq AC 40 V to max. AC/DC 320 V
potentiometer drive shaft can only be operated with actuating element
or has to be deenergized.










Selection chart

Illustration	Description	➔ Order no.
	Fixing nut M 30 to fix the actuating elements in the mounting wall of enclosure resp. in the enclosure	05-1138-0009
	Printed pushbutton labels 6 loose pushbutton labels 1 x green marked START, ON, I 1 x red marked STOP, OFF, O	05-0091-0019
	Spanner	05-1191-0001
	Label holder Label holder for actuating elements with label insert	05-0044-0001 03-5412-0056
	Contrast plate for Emergency/Off impact switch yellow Ø 90 mm	03-5412-0057
	Label unmarked, for device information	03-3600-0021
	Marking tag for an additional label, for all actuating elements	05-1105-0020
Examples 	Label (without marking) for marking tag Labelling to your specifications (see examples)	03-5412-0060



Selection chart

Illustration	Description	➔ Order no.
	ComEx flange set for the connection of two ComEx enclosures includes 1 threaded sleeve, 1 lock nut and 1 O-ring	05-0091-0046
	Locking device (without padlock) for ComEx enclosure NIRO frame, transparent hood of high-quality thermoplast	05-0037-0007
	Locking device (without padlock) for control boxes NIRO frame, transparent hood of high-quality thermoplast	05-0037-0006
	Protective metal shroud for emergency stop actuating element to prevent accidental switching	05-0032-0009
	External earth stud for outside-connection	05-0012-0124
	UL adapter tested adapter for ComEx enclosure with NPT internal thread Thread 1/2" NPT Thread 3/4" NPT	05-0004-0009 05-0004-0010
	Earth plate ComEx for earthing of metal cable glands Thread 1 x M20 Thread 2 x M20 Thread 1 x M25	05-0012-0114 05-0012-0115 05-0012-0116



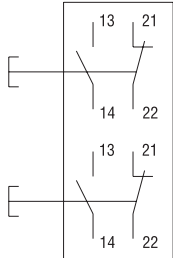
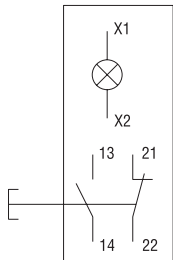
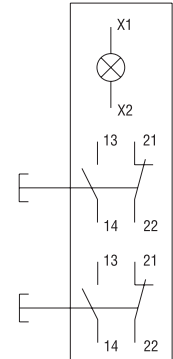
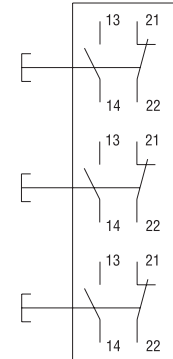
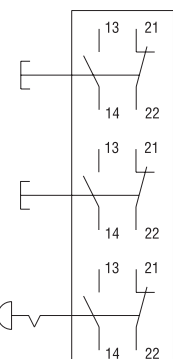
Selection chart

Wiring diagram	Description	Weight	➔ Order no.
	1 pushbutton 1 NO + 1 NC incl. labels red, green, yellow, white	0.33 kg	07-3511-10P74
	1 NOT/AUS Emergency Stop 1 NO + 1 NC marked NOT/AUS and Emergency-Stop	0.36 kg	07-3511-10N84
	1 Mushroom Keyswitch 1 NO + 1 NC with key to reset	0.40 kg	07-3511-10K34
	1 Selector switch 1 NO + 1 NC, 2 position with 2 positions 0 and I, latching	0.35 kg	07-3511-10S94
	1 Selector switch 1 NO + 1 NC, 3 position with 3 positions I - 0 - II, latching	0.35 kg	07-3511-10S04
	1 Selector switch 1 NO + 1 NC, 3 position with 3 positions I - 0 - II, touch	0.35 kg	07-3511-10S14
BN BU 	1 Lamp red green yellow white	0.35 kg	07-3511-10LRR 07-3511-10LGG 07-3511-10LYY 07-3511-10LWW
	1 Mushroom Pushbutton, black 1 NO + 1 NC	0.35 kg	07-3511-10P84
	1 Keyswitch 1 NO + 1 NC lockable in both positions	0.40 kg	07-3511-10K04
	1 Keyswitch 1 NO + 1 NC lockable in the pushed-in-position	0.40 kg	07-3511-10K14
	1 Keyswitch 1 NO + 1 NC lockable in the initial position	0.40 kg	07-3511-10K24

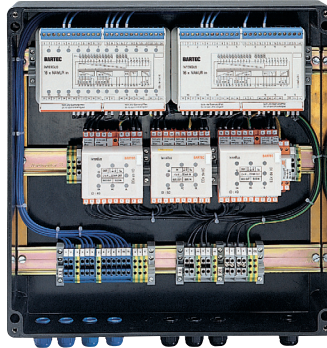




Selection chart

Wiring diagram	Description	Weight	➔ Order no.
	2 pushbuttons 1 NO + 1 NC each including key labels	0.50 kg	07-3512-10P74P74
	1 indicator lamp, 1 pushbutton with indicated lamp red green yellow white blue 1 NO + 1 NC	0.52 kg	07-3512-10LRRP74 07-3512-10LGGP74 07-3512-10LYYP74 07-3512-10LWWP74 07-3512-10LBPP74
	1 indicator lamp, 2 pushbuttons with indicated lamp red green yellow white 1 NO + 1 NC each	0.70 kg	07-3513-10LRRP74P74 07-3513-10LGGP74P74 07-3513-10LYYP74P74 07-3513-10LWWP74P74
	3 pushbuttons 1 NO + 1 NC each including key labels	0.68 kg	07-3513-10P74P74P74
	2 pushbuttons 1 emergency stop button 1 NO + 1 NC each	0.70 kg	07-3513-10P74P74N84





Local control stations

Features

- The right size enclosure
- Optimum functionality thanks to the great variety of components
- Customised planning and implementation
- Certified to many standards

Description

For explosion-proof local controllers BARTEC offers an extensive range of polyester enclosures with screw fixing lid and hinged doors. The enclosures have been designed in accordance with the requirements of the "increased safety" type of protection.

Depending on the specification and number of equipment, various enclosure types and sizes are available. The control stations will be equipped according to your individual requirements with control units, alarm units, display units and bus interface modules.

The components are mounted either on DIN rails or installed on the front lid. Depending on the design and requirements, BARTEC not only supplies control units but also offers the complete wiring to terminal blocks.

BARTEC's local control stations are certified for the use in areas in which an explosion hazard exists from inflammable dust. The "Protection through housing" type of protection is used. The supply range includes enclosures made of aluminium, polyester and stainless steel. These are fitted with certified modules and glands at points of penetration in the wall of the enclosure. Evidence of heating up is kept for the parts built into the enclosure to comply with the maximum admissible surface temperature.

Fields of application

Chemical and petrochemical industry, process and plant engineering, pharmaceutical and food industry, OFF SHORE areas. Thanks to their great variety, the enclosure are particularly suited for local control stations and bus interface units.



Explosion protection

Ex protection type

(depending on the components installed)
Ex II 2(1)G EEx edqm ia resp. ib
[ia resp. ib] IIC T6, T5 resp. T4 for Zone 1
Ex II 2D IP 65 T 80 °C for Zone 21

Ambient temperature

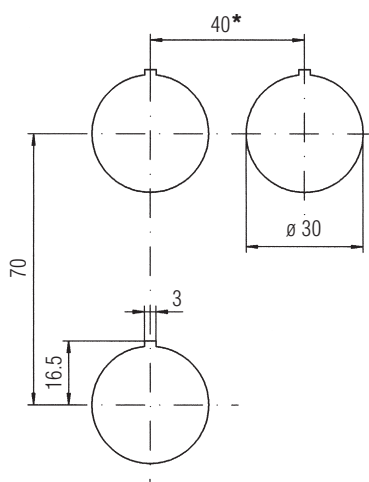
(special design on request)
-20 °C to +40 °C
-55 °C to +70 °C

Certification

PTB 02 ATEX 1159 for Zone 1
IBExU00ATEX1079 for Zone 21
(Further certifications on request)

Mounting dimensions

for switching and light elements according to EN 60947-5-1



* recommended distance for mushroom pushbutton and emergency switch is 100 mm. Required distance for position selector with protective shroud is min. 60 mm.

Technical data

Material

Type 07-3101

aluminium
ALSi 12, pressure or chill casting
RAL 7001 silver grey

Type 07-3103

glass-fibre reinforced polyester
RAL 9005, deep black

Type 07-3109

glass-fibre reinforced polyester
RAL 9011, graphite black

Type 07-3113

High-quality stainless steel 304

Type 07-3136

High-quality stainless steel 316L

Seals

EPDM (Standard)

-20 °C to +85 °C

PU (Standard at 07-3109)

-20 °C to +80 °C

Silicone

-55 °C to +100 °C

Mechanical strength (acc. to EN 50014)

Impact energy 7 Nm

Protection class

(higher degree of protection on request)
EN 60529/IEC 60529
IP 54/IP 65

Electrical data

Rated voltage

up to 1000 V

Rated current

max. 160 A depending on devices fitted

Configuration data for control stations

Type of enclosure

07-31 ☐ ☐ -

Dimensions

Width _____ Height _____ Depth _____

Nominal voltage

AC _____ V / DC _____ V

Threaded glands



Equipment combination multi-functional display MFD^{ex} + easy 800

Features

- Numerous solutions possible
- Easy operation and program input
- Text and graphics capable display
- Easy installation

Description

The MFD^{ex} multi-functional display together with the control components easy 800 from Möller offer various solution possibilities – even for special applications.

An isolating module allows the equipment combination to be used in hazardous areas.

The variety of solutions provided by this combination includes small simple control units with time relay and time switch as well as large networked applications with several hundred inputs and outputs.

The product range easy 800 and MFD^{ex} is characterised by its easy handling and program input. A particular highlight is the easy data input by means of the software “Möller easy soft”.

The MFD^{ex} supports all functions of the control components easy 800. The display is text and graphics capable.

Set points can be enquired and changed by means of control keys during operation.

Solution variants

■ Control unit easy and isolating module in safe areas

MFD^{ex} as separate unit connected by means of cable with max. length of 3 m in hazardous area

■ Control unit easy and isolating module in flameproof enclosure

MFD^{ex} as separate unit connected by means of cable with max. length of 3 m in hazardous area

■ Control unit easy and isolating module in flameproof enclosure

MFD^{ex} in flanged EEx e enclosure



Technical data

Display

- 132 x 64 Pixel
- LCD display
- Backlight
- Freely definable status LEDs red and green
- Keypad with:
 - 4 cursor keys
 - 4 control keys
 - 1 mode key

Dimensions

511 mm x 276 mm x 218 mm

Power supply

DC 24 V via CP 8 control unit

Example

- Interfaces of the easy 800
- 12 digital inputs
(4 inputs can be used as analogue inputs, ((0 - 10/10 Bit)) all DC variants)
- 4 relay outputs (max. 10 A)

or:

- 4 transistor outputs (0 - 10/10 Bit)
- 1 analogue output
(optional for DC variants)
- Network:
easy-NET for connecting more I/O modules from the easy series
- Possible network interfaces:
PROFIBUS-DP
AS-Interface
CANopen
DeviceNet

Explosion protection

Ex protection type MFD^{ex}

Ex II 2G EEx ib IIB T4

Certification

TÜV 05 ATEX 7252

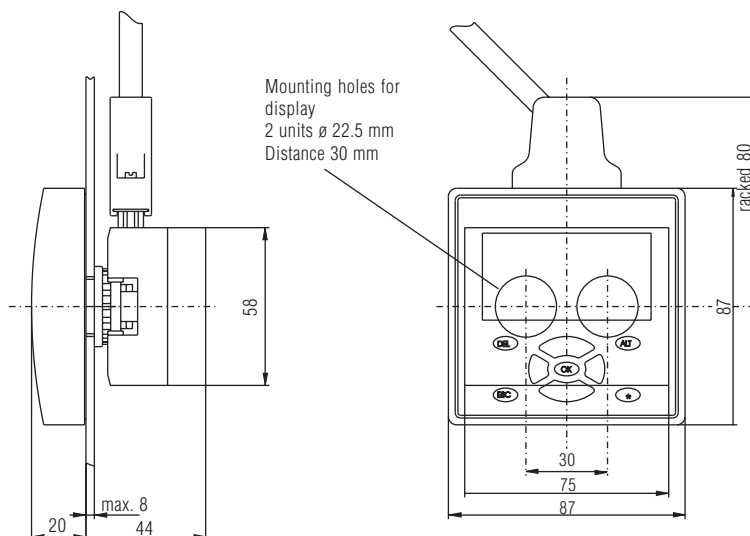
Ambient temperature

-20 °C to +55 °C

Insert temperature

0 °C to +55 °C

Dimensions



Selection chart MFD^{ex}

Version	➔ Order no.
Display and adapter with keys	17-71MM-0001
Display and adapter without keys	17-71MM-1001
MFD-CP8-NT (CPU basic modul)	05-0089-0054

Accessories MFD^{ex}

Name	➔ Order no.
Connection cable with 2 cable glands	05-0068-0197
Connection cable with 1 cable gland + 1 cable entry	05-0068-0198
Isolating module	17-254M-0001
MFD-R16 (input/output unit)	05-0089-0055

Other input/output modules on request.



Lamp module for panel-mounted installation with terminals

Technical data

Protection class

Lamp module IP 66/67 in conjunction
with actuator and installation in an
appropriate IP enclosure
Terminals IP 20 (IEC 60529)

Rated insulation voltage

300 V

Rated operating voltage

AC 12 V to 250 V (-55 °C to +50 °C)
DC 12 V to 60 V (-55 °C to +50 °C)
AC/DC 12 V to 24 V (-55 °C to +60 °C)

Power consumption

≤ 1 W

Lamp

LED
red, green, yellow, white, blue

Illumination

very bright, over a visible angle of 180°

Enclosure material

Thermoplastic

Connection

Terminals 2.5 mm², fine stranded

Electrical life

>10⁵ running hours

Storage-/transport temperature

-55 °C to +70 °C

Weight

approx. 90 g

Mounting

by bayonet lock

Shock resistance

DIN IEC 68 part 2-27, 30 g 18 ms

Explosion protection

Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I
Class 1, Div. 2 - Class 1, Zone1

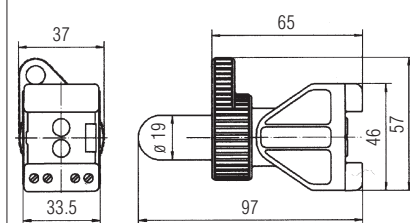
Certification

PTB 97 ATEX 1064 U
UL E184198

Ambient temperature

-55 °C to +50 °C

Dimensions



Selection chart

Wiring diagram	Colour LED	Code no.	Colour actuator	Code no.
	red	1	red	3
	green	2	green	4
	yellow	3	yellow	5
	white	4	white	6
	blue	5	blue	7

Complete order no.

Lamp module

without actuating element

07-3353-11 ☐ 0

Actuating element

Standard

05-0003-0001 ☐ 00

for Offshore

05-0003-0001 ☐ 00BN

Please enter code number.



Potentiometer for panel-mounted installation with terminals

Technical data

Protection class

Potentiometer IP 66/67 in conjunction with actuator element and installed in an appropriate IP enclosure
Terminals IP 20 (IEC 60529)

Rated insulation voltage

500 V

Max. rated voltage

AC/DC 320 V

Resistance

1 k Ω to 10 k Ω

Curve shape

linear

Resistance tolerance

$\pm 20\%$

Rated output

max. 1 W

Resistor material

carbon film on ceramics

Rotation

mech. 285° -5°
electr. about 250°

Torgue (beginning)

0.5 to 1.5 Ncm

Torgue (end stop)

≥ 100 Ncm

Enclosure material

Thermoplastic

Connection

Double terminals 2 x 2.5 mm², fine stranded

Mechanical life

25000 sinusoidal cycles

Storage/transport temperature

-55 °C to +70 °C

Weight

approx. 88 g

Explosion protection

Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I

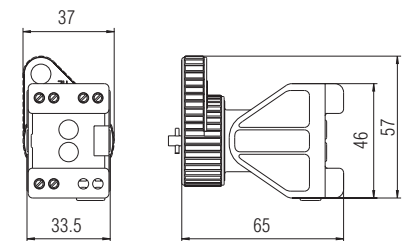
Certification

PTB 05 ATEX 1064 U

Ambient temperature

-55 °C to +60 °C

Dimensions



Selection chart

Wiring diagram	Resistance	Code no.
	1 k Ω	4
	2.2 k Ω	5
	4.7 k Ω	6
	10 k Ω	7

Other resistances on request.

Complete order no.

Potentiometer

without actuating element

Please enter code number.

07-3373-1D 0

Actuating element

Standard (scale 1-10)

For Offshore (scale 1-10)

Order no. 05-0003-007600

Order no. 05-0003-007600BN

Notes for installation and inspection:

At rated voltage: \leq AC 40 V/ \leq DC 120 V
(protection low voltage in accordance with VDE 0100 T. 410)
potentiometer drive shaft can be operated without actuating element.

At rated voltage: \geq AC 40 V to max. AC/DC 320 V
potentiometer drive shaft can only be operated with actuating element
or has to be deenergized.



Fuse max. 1.25 A with double terminals

BARTEC

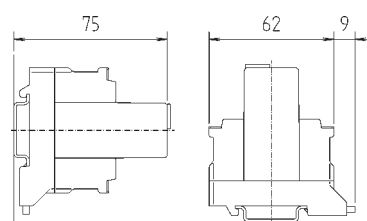
Fuse

Description

Fused modules are required to protect equipment and power circuits in areas in which an explosion hazard exists. The increasing automation of functions and processes make it necessary to install the standard protective devices on-site. An advantage of MODEX fuses is that they are fitted in explosion-protected enclosures with integrated double terminals. This allows the input and output voltage to be used further by the MODEX component.

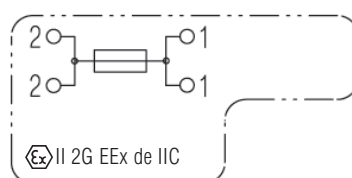
Please indicate the desired current value with your order (see selection chart).

Dimensions/mounting positions



Module width: 15 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material

High quality thermoplastic

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

written marking labels

Storage temperature

-40 °C to +70 °C

Ambient temperature

-40 °C to +40 °C

Weight

0.055 kg

Electrical data

Fuses see selection chart

Nominal voltage

250 V

Switching capability

at 250 V, 50 Hz, cos φ = 1

80 A for (M) 0.1 Abis 1.25 A

35 A for (T) 0.1 A to 1.25 A

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2G EEx de IIC

Ex I M2 EEx de I

Certification

PTB 98 ATEX 1010 U

Selection chart

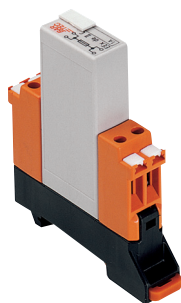
Nominal current	Code no.	Characteristic	Code no.
0.1 A	5	medium time-lag	M
0.2 A	8		
0.25 A	9		
0.5 A	C	time-lag	T
1.0 A	G		
1.25 A	H		

➔ **07-7311-61J2 / 20**
Complete order no.

Please enter code number.
Technical data subject to change without notice.



Fuse max. 1.25 A with single terminals

BARTEC

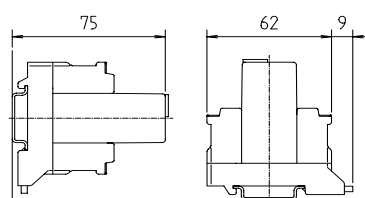
Fuse

Description

Fused modules are required to protect equipment and power circuits in areas in which an explosion hazard exists. The increasing automation of functions and processes make it necessary to install the standard protective devices on-site. An advantage of MODEX fuses is that they are fitted in explosion-protected enclosures with integrated double terminals. This allows the input and output voltage to be used further by the MODEX component.

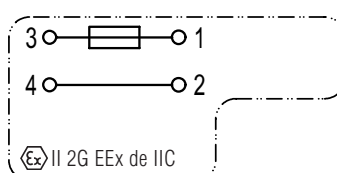
Please indicate the desired current value with your order (see selection chart).

Dimensions/mounting positions



Module width: 15 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material

High quality thermoplastic

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

written marking labels

Storage temperature

-40 °C to +70 °C

Ambient temperature

-40 °C to +40 °C

Weight

0.055 kg

Electrical data see selection chart

Nominal voltage

250 V

Switching capability

at 250 V, 50 Hz, cos φ = 1

35 A for (T) 0.032 A to 1.25 A

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2G EEx de IIC

Ex I M2 EEx de I

Certification

PTB 98 ATEX 1010 U

Selection chart

Nominal current	Code no.
0.032 AT	1
0.050 AT	2
0.063 AT	3
0.08 AT	4
0.1 AT	5
0.125 AT	6
0.16 AT	7
0.2 AT	8
0.25 AT	9
0.315 AT	A
0.4 AT	B
0.5 AT	C
0.63 AT	E
0.8 AT	F
1.0 AT	G
1.25 AT	H

07-7311-61J2 / TAO

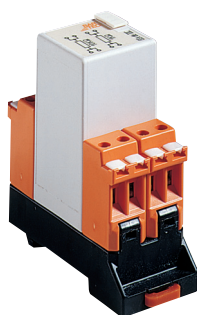
Complete order no.

Please enter code number.



Fuse to 2.5 A

BARTEC

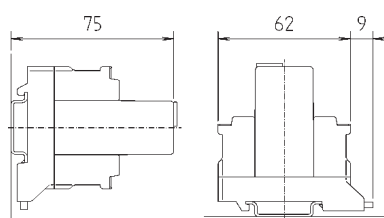


Fuse

Description

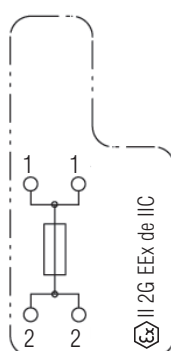
Fused modules are required to protect equipment and power circuits in areas in which an explosion hazard exists. The increasing automation of functions and processes make it necessary to install the standard protective devices on-site. An advantage of MODEX fuses is that they are fitted in explosion-protected enclosures with integrated double terminals.

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material

High quality thermoplastic

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

written marking labels

Storage temperature

-20 °C to +70 °C

Umgebungstemperatur

-20 °C to +40 °C

Weight

0.055 kg

Electrical data

Fuses see selection chart

Nominal voltage

250 V

Switching capability

at 250 V, 50 Hz, $\cos \varphi = 1$

1000 A for (M) 1.6 A to 2.5 A

35 A for (T) 0.1 A to 1.25 A

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2G EEx de IIC

Ex I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

Selection chart

Nominal current	Code no.	Characteristic	Code no.
1.6 A	J	medium time lag	M
2.0 A	K	time lag	T
2.5 A	L		

07-7311-63J2 / 00

Complete order no.

***07-7311-63J2LT00 not available!**

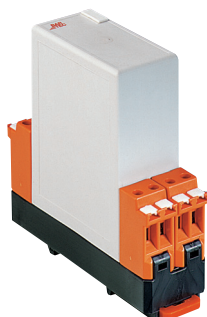
Please enter code number.

Technical data subject to change without notice.



Fuse max. 6.3 A

BARTEC

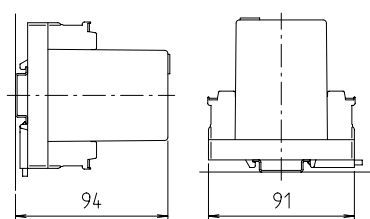


Fuse

Description

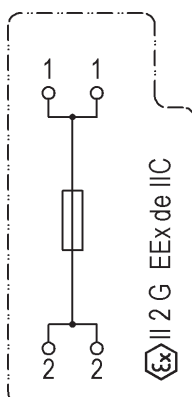
Fused modules are required to protect equipment and circuits in hazardous areas. With the increasing automation of functions and processes requires the installation of the standard protective devices on-site. An advantage of MODEX fuses is that they are fitted in flameproof enclosures with integrated double terminals. This allows the input and output voltage to be used by other MODEX component too.

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals

2.5 mm², stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

one label per terminal

Storage temperature

-40 °C to +70 °C

Ambient temperature

-20 °C to +40 °C

Weight

0.250 kg

Electrical data

Operating voltage see selection chart

Nominal voltage

250 V

Switching capacity

at 250 V, 50 Hz, $\cos \varphi = 1$

1000 A for (M) 3.15 A to 6.3 A

35 A for (T) to 3.15 A

40 A for (T) 4 A

50 A for (T) 5 A

63 A for (T) 6.3 A

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2G EEx de IIC

Ex I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

Selection chart

Nominal current	Code no.	Characteristic	Code no.
3.15 A	M	time lag	T
4.0 A	N	medium time lag	M
5.0 A	P		
6.3 A	Q		

07-7311-93J2/ 00

Complete order no.

Please enter code number.

Technical data subject to change without notice.



Fuse max. 6.3 A, quick-acting

BARTEC

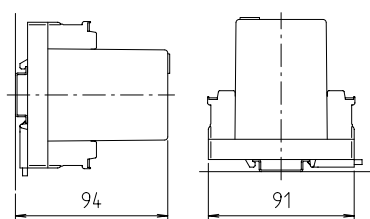


Fuse

Description

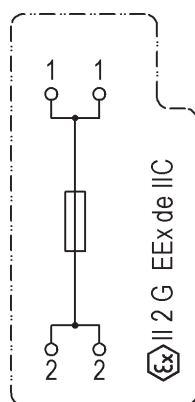
With the increase in automated functions and processes, it is necessary to install common protective systems on site. Fuse elements are required to protect equipment and circuits also in hazardous areas. MODEX fuse elements are advantageous as they are in explosion-proof encapsulation and installed in an enclosure with integrated double terminals.

Dimensions/mounting positions



Module width: 15 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

written marking labels

Storage temperature

-40 °C to +70 °C

Ambient temperature

-20 °C to +40 °C

Weight

0.250 kg

Electrical data

Fuse see selection chart

Rated voltage

250 V

Switching capacity

at 250 V, 50 Hz, $\cos \varphi = 1$

35 A for (T) to 3.15 A

40 A for (T) 4 A

63 A for (T) 6.3 A

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2G EEx de IIC

Ex I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

Selection chart

Nominal current	Code no.	Characteristic	Code no.
2.5 A	L	quick-acting	F
4.0 A	N		
6.3 A	Q		

07-7311-93J2 / 00

Complete order no.

Please enter code number.

Technical data subject to change without notice.

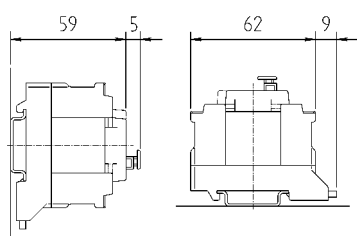


Isolator terminal

Features

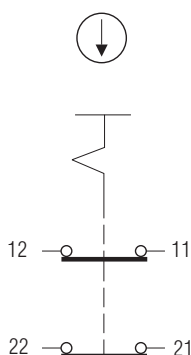
- IP 30 terminal cover
- Positive opening contact, 2-pole
- Safety isolation of Ex e power circuits
- Eliminates "permit to work" or isolating elsewhere

Dimensions/mounting positions



Module width: 15 mm

Wiring diagram (I-position)/ terminal assignment (I-position)



Description

The MODEX series offers an isolator terminal which can be used both for service and test jobs as well as for conventional, manual switching functions. Thanks to the visibly clear distinction between switching positions and extremely small enclosure with 4 integrated terminals, the isolator terminal is very easy to install. The labelling options are the same as for rail-mounted terminals. The MODEX isolator terminal is installed directly in an EEx e enclosure and installed like a rail-mounted terminal.

Being a terminal with positive opening operation, it offers additional safety. All conducting parts are protected against accidental contact which allows you to open the EEx e enclosure and to operate the switch by hand when voltage is applied and within the Ex area. Any actuators or sensors are isolated by the double poles and can thus be replaced under hazardous conditions providing local regulations allow this.

Technical data

Enclosure material

High-quality thermoplastic and duroplastic

Protection class

Module	IP 54
Terminals	IP 20
Terminals with cover	IP 30

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

written marking labels

Storage temperature

-40 °C to +70 °C

Ambient temperature

-40 °C to +75 °C

Weight

0.245 kg

Electrical data

Utilization categories

AC-15 for 400 V/2 A
DC-13 for 250 V/0.15 A

Switching capacity according to EN 61058-1

see table

Switching elements

2-pole positive opening contact

Service life

electrical/mechanical $0.6 \geq 10^4$
switching cycles

Contact material

pure silver, gold-plated

Contact version

positive opening contact

Contact type

2-pole NC contact

Rated isolation voltage

400 V

Short-circuit protection

fuse-links
guide-blow: 10 A

Mechanical life

1 x 10⁶ switching cycles

Electrical life

1 x 10⁴ switching cycles

Conventional therm. current

7 A at T_a ≤ +40 °C

Rated operating current

Alternating current 40 - 80 Hz

load U	ohmic load I/AC-12 A	inductive load I/AC-15 A
125 V	5 A	
250 V	4 A	4.0 A
400 V	2 A	2.0 A

Direct current

	ohmic load	inductive load
30 V	7 A	approx. 5 A
250 V	0.6 A	0.15 A

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I

Certification

PTB 99 ATEX 1020 U

Notes

- Adhere to VBG 4 § 6 par. 2 when working on the unit
- Provide IP 30 covers on terminals 11 and 21
- Only terminals 12 and 22 can be worked with
- Protect against unintentional reclosing/seal isolator terminal
- Ensure isolation from supply (pay attention to valves and fittings with energy storage mechanism)
- Cover neighboring, conducting parts

Order no.
07-7311-6131/EE00

Technical data subject to change without notice.



Miniature switching relay

Description

The relay modules of the MODEX series offer most up-to-date switching configurations. A suppressor diode on the coil protects the power circuit from peak voltages. High shock and vibration resistance is just as important as the IP 66 protection of the contacts.

The MODEX relay switches circuits up to 5 A and is used as an isolator between low-current control circuits and high-current switching circuits.

Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

written marking labels

Storage temperature

-40 °C to +70 °C

Ambient temperature

-20 °C to +40 °C

Weight

0.250 kg

Electrical data

Coil data

AC/DC 11.2 V to 16 V/0.53 VA/0.37 W
AC/DC 21.5 V to 28 V/0.43 VA/0.33 W
AC/DC 42 V to 60.5 V/0.53 VA/0.4 W
AC/DC 54 V to 72 V/0.41 VA/0.3 W
AC 96 V to 144 V; 50/60 Hz/0.85 VA
AC 176 V to 264 V; 50 Hz/1.5 VA

Contact material

AgCdO

Max. switching voltage

AC 250 V/DC 300 V

Max. switching capacity

(ohmic load)
1 250 VA (50 W)

Test voltage

Coil-contact 4 kV

Mechanical life

min. 3 x 10⁶ switching cycles

Electrical life

> 1 x 10⁵ switching cycles/
AC 220 V 5 A ohmic load

Operating frequency

7 200 switching cycles/h

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC

Explosion protection

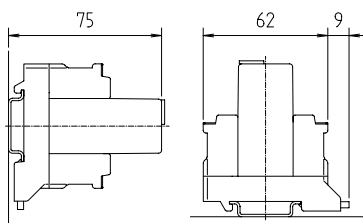
Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I

Certification

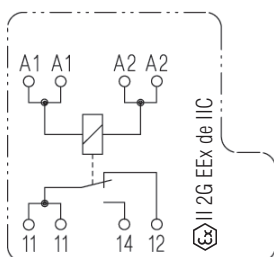
PTB 97 ATEX 1068 U

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Selection chart

Voltage	Code no.
AC/DC 11.2 V to 16 V	2
AC/DC 21.5 V to 28 V	3
AC/DC 42 V to 60.5 V	4
AC/DC 54 V to 72 V	5
AC 96 V to 144 V	7
AC 176 V to 264 V	8

07-7311-6371/ 000

➔ **Complete order no.**

Please insert correct code.

Technical data subject to change without notice.

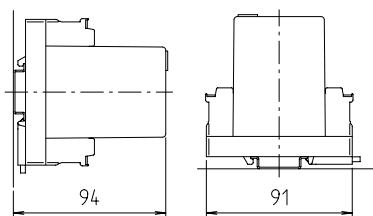


Relay 1 changeover contact/2 changeover contacts

BARTEC

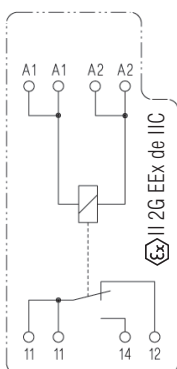

Relay

Dimensions/mounting positions

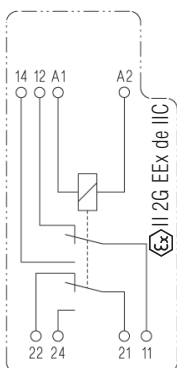


Module width: 30 mm

Wiring diagram 1/terminal assignment 1



Wiring diagram 2/terminal assignment 1



Description

The relay modules of the MODEX series offer most up-to-date switching configurations. A suppressor diode on the coil protects the power circuit from peak voltages.

The MODEX relay serves for the switching of power circuits up to 6 A. Thanks to its low power consumption it can be controlled by means of electronic circuits, optorelays from BARTEC or standard power circuits.

Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

written marking labels

Storage temperature

-40 °C to +70 °C

Ambient temperature

-20 °C to +40 °C

Weight

0.250 kg

Explosion protection

Ex protection type

Ex II 2G EEx de IIC

Ex I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

Electrical data

Coil

AC/DC 12 V ± 10 %	AC/DC 24 V ± 10 %	AC/DC 48 V ± 10 %
0.45 W 0.6 VA	0.46 W 0.56 VA	0.53 W 0.58 VA
AC 110 V +10 %	AC 120 V +10 %/60 Hz	AC 230 V +10 %
1.2 VA	1.0 VA	1.5 VA
	AC 230/240 V + 10 %	
	1,2 VA	

Contact data Contact material AgCdO

U _A	I _{max.}	P _{max.}	(1 changeover contact)
AC 400 V	2.0 A	700 VA	cos φ = 1
AC 250 V	6.0 A	1400 VA	
DC 125 V	0.6 A	75 W	ohmic load
DC 50 V	3.0 A	150 W	

U _A	I _{max.}	P _{max.}	(2 changeover contacts)
AC 400 V	1.0 A	350 VA	cos φ = 1
AC 250 V	3.0 A	700 VA	
DC 125 V	0.25 A	30 W	ohmic load
DC 50 V	1.5 A	75 W	

Making current (16 ms)

20 A (1 changeover contact)

10 A (2 changeover contacts)

Test voltage

Coil-contact 4 kV

Mechanical life

> 20 x 10⁶ switching cycles

Electrical life

> 1 x 10⁵ switching cycles/AC 230 V

6 A ohmic load (1 changeover contact)

> 1 x 10⁵ switching cycles/AC 230 V

3 A ohmic load (2 changeover contacts)

Operating frequency

1 800 switching cycles

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Selection chart

Contacts	Code no.	Voltage	Code no.
1 changeover	1	AC/DC 12 V	2
		AC/DC 24 V	3
		AC 110 V	7
2 changeovers	2	AC 120 V/60 Hz	H
		AC 220 V	8
		AC 230 V/240 V	9

07-7311-937 / 000

Complete order no.

Please insert correct code.

Technical data subject to change without notice.

Relay, 2 changeover contacts also available in AC/DC 48 V.

Order no.: 07-7311-9372/4000



Isolator relay

Description

This relay is used as an isolator between non-intrinsically safe and intrinsically safe circuits. Various coil and contact configurations are available. Several intrinsically safe circuits can be connected to the contact circuits, provided that intrinsic safety is maintained. A galvanic isolation according to DIN EN 60079-11 up to 375 V is provided.

Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

written marking label

Storage temperature

-40 °C to +70 °C

Ambient temperature

-20 °C to +40 °C

Weight

0.250 kg

Electrical data

Coil data

DC 6 V ± 10 %; 86 mA
DC 12 V ± 10 %; 45 mA
DC 24 V ± 10 %; 22 mA
DC 48 V ± 10 %; 11 mA
DC 60 V ± 10 %; 9 mA
DC 110 V ± 10 %; 5.5 mA

Contact data (non-intrinsically safe)

Single-pole contact

Contact material AgCuNi

Max. switching voltage

AC 250 V

Max. switching current

4 A

Max. switching current (AC)

100 VA/cos φ = 1

Max. switching capacity (at switching voltage up to DC 24 V)

96 W/ohmic load

Contact data (intrinsically safe)

Double contact

Contact material AgCuNi, hard gold plated

Max. switching voltage

AC 46 V
DC 65 V

Max. switching current

2 A

Max. switching capacity (AC)

100 VA/cos φ = 1

Max. switching capacity

(at switching power up to DC 24 V)

48 W/ohmic load

Test voltages

Coil-contact 5000 V_{eff}
Contact assembly-contact assembly 2500 V_{eff}
Contact open 1000 V_{eff}

Mechanical life

> 50 x 10⁶ switching cycles

Electrical life

3 x 10⁵ switching cycles
(single-pole contact, AC 250 V; 4 A;
cos φ = 1; 360 switching cycles/h)

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC

Explosion protection

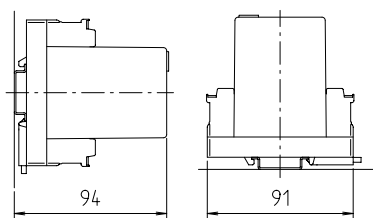
Ex protection type

Ex II 2(1)G EEx de [ia] IIC

Certification

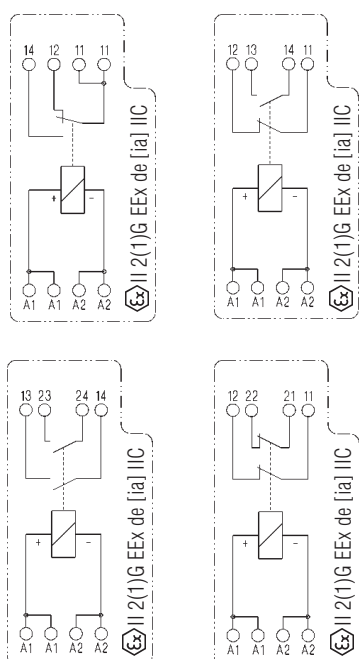
Module PTB 97 ATEX 1068 U
Enclosure PTB 03 ATEX 2169 X

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Selection chart

Contacts (non-intrinsically safe)	Code no.	Voltage (intrinsically safe)	Code no.
1 changeover	1	DC 6 V	U5
2 NO	4	DC 12 V	V5
2 NC	6	DC 24 V	W5
1 NO 1 NC	7	DC 48 V	X5
(intrinsically safe)		(non-intrinsically safe)	
1 changeover	E	DC 6 V	M6
1 NO 1 NC	F	DC 12 V	N6
2 NO	G	DC 24 V	Q6
		DC 48 V	R6
2 NC	H	DC 60 V	S6
		DC 110 V	T6

07-7311-937 / 00

Complete order no.

Please enter correct code.

Technical data subject to change without notice.



Optocoupler

Description

This optocoupler provides for a safe galvanic isolation between a non-intrinsically safe incoming circuit (transmitter) and the output connected to an intrinsically safe circuit (receiver), which is clearly identified by means of light blue terminals.

The two channels are also safely galvanically isolated among each other.

Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 50022

Labelling

written marking labels

Storage temperature

-40 °C to +70 °C

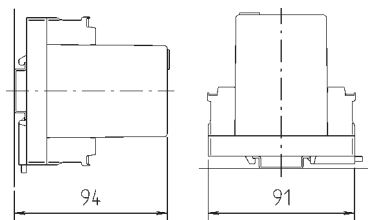
Ambient temperature

-20 °C to +40 °C

Weight

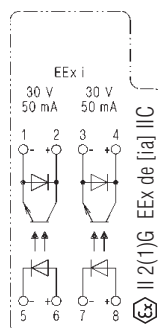
0.250 kg

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Electrical data

Total power dissipation

$P_{max} = 0.8 \text{ W}$

No capacities and inductances

Input data

Input voltage

DC 20 to 28 V (non-interchangeable)

Input current

5.5 mA to 9.2 mA

Output data

Voltage

DC 4 V to max. 30 V

Saturation voltage

0.9 V

Current

max. 50 mA

Transmission data

Switching frequency

max. 5 kHz (with $U_A = 10 \text{ V}$)

Switching times measured at

$U_E = 20 \text{ V}_{SS}$; $U_A = 10 \text{ V}_{SS}$; $I_A = 50 \text{ mA}$

Rise time approx. 15 μs

Drop-out time approx. 13 μs

Switch-on time approx. 18 μs

Switch-off time approx. 19 μs

Galvanic isolation transmitter/receiver

max. 375 V (peak value)

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2(1)GD EEx de [ia] IIC

Ex I M2 EEx de [ia] I

Certification

Module PTB 97 ATEX 1068 U

Enclosure TÜV 01 ATEX 1715

Order no. 07-7311-93QH/C5M0

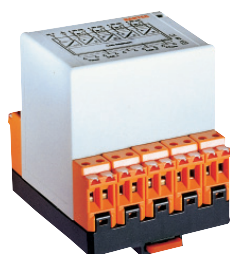
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Technical data subject to change without notice.



Power relay

BARTEC



Power relay

Description

Relay modules in the MODEX system offer modern switch features in explosive areas. The MODEX power relay is used to switch load-current circuits to 12 A, e.g. heating circuits or smaller motors.

Technical data

Enclosure material

High quality thermoplastic

Protection class

Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

written marking labels

Storage temperature

-40 °C to +70 °C

Ambient temperature

Mounted in sequence on TS
at ≥ 16 mm spacing
-20 °C to +40 °C

Weight

0.250 kg

Electrical data

Coil data

DC 24 V ± 10 %
AC 230 V ± 10 %

Nominal power

DC 24 V approx. 1.25 W
AC 230 V approx. 1.9 VA

Contact data

Contact material AgCdO

Max. switching voltage

AC 400 V

Max. switching current (ohmic load)

12 A

Max. switching capacity (ohmic load)

4 560 VA

Test voltage

Coil contact 2.5 kV effective
15/10 ms

Mechanical life

20 x 10⁶ switching cycles

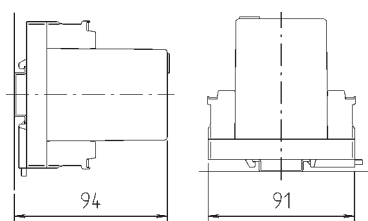
Switching frequency

6 000 switching cycles/h without load
1 000 switching cycles/h at nominal load

Guidelines/norms/certifications

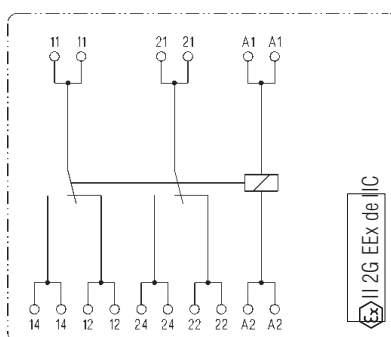
Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC

Dimensions/mounting positions



Module width: 75 mm

Wiring diagram/terminal assignment



Explosion protection

Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

Selection chart

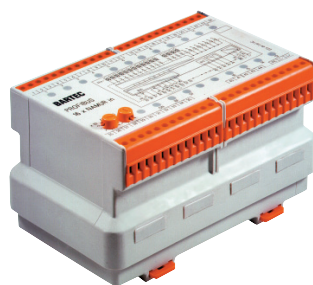
Voltage	Code no.
DC 24 V	3
AC 230 V	H

07-7311-9772/ **310**

Complete order no.

Please enter code number.

Technical data subject to change without notice.



Power contactor

Description

The contactors in the MODEX series offer the necessary explosion protection, and yet are similar to normal contactors in their installation form and design.

High quality contactors with a control voltage of AC 230 V are installed in the pressure-proof encapsulated MODEX enclosure.

The contacts are executed to protection system IP 66 to protect against even aggressive atmospheres. Integrated terminals make their installation as simple as can be.

A free-wheeling diode is available to protect the circuit from peak voltages when being switch off.

Technical data

Construction

Flameproof, clip-on enclosure for TS 35 rail

Enclosure material

High-quality thermoplastic

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals

2.5 mm², fine stranded

Labelling

front panel for markings

Storage temperature

-40 °C to +60 °C

Ambient temperature

-20 °C to +60 °C

Weight

1.4 kg

Electrical data

Control voltage

AC 230 V

Switching capacity

AC-1 400 V 10 A

Auxiliary contact

AC-3 400 V 8.0 A

Mechanical life

10⁷ switch cycles

Life of contact elements for utilization category AC 1

500 000 switch cycles 400 V/10 A

Switching frequency

No load 3 600 1/h
at AC-1 loading 600 1/h

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC
IEC 60947, EN 60947

Explosion protection

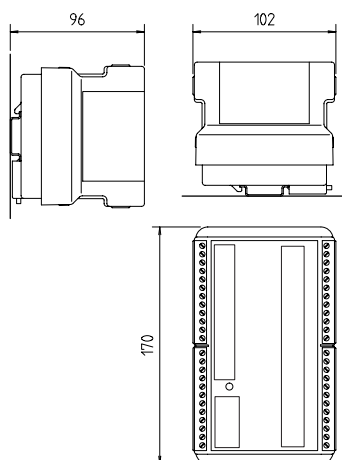
Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I

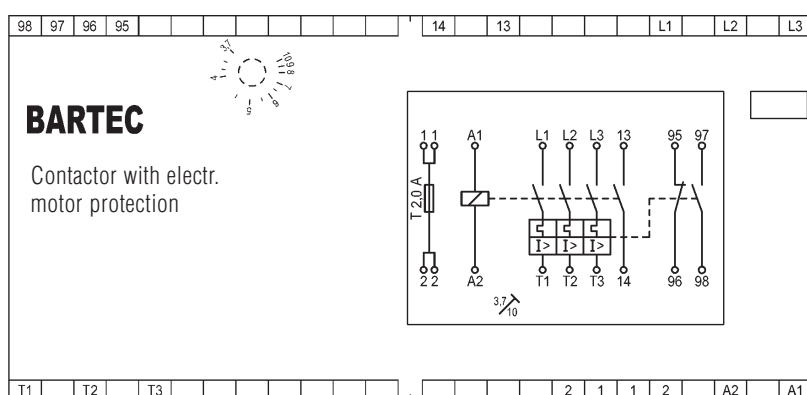
Certification

PTB 97 ATEX 1066 U

Dimensions/mounting positions



Wiring diagram/terminal assignment



Selection chart

Control voltage	Code no.	Nominal operating current	Code no.
230 V	5	0.32 - 1.0 A	1
		1.0 - 2.9 A	2
		1.6 - 5.0 A	3
		3.7 - 10 A	4

➔ **07-7331-61** Complete order no.

Please enter code number.

Technical data subject to change without notice.



Cradle relay

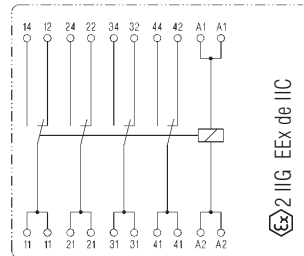
Description

Cradle relay for direct and alternating voltages, neutral, monostable. High-quality cradle relays for different AC and DC voltage ranges are encapsulated flameproof and installed in the MODEX enclosure. Protection class IP 66 guarantees that the contacts are protected against aggressive atmospheres.

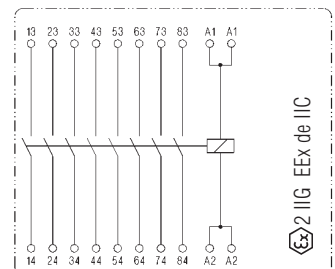
Applications:

Switching of measuring and control circuits in industrial plants.

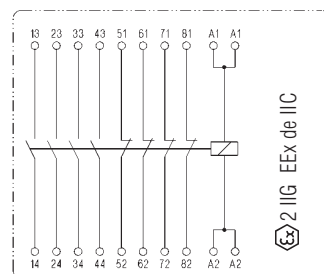
Wiring diagrams/terminal assignments



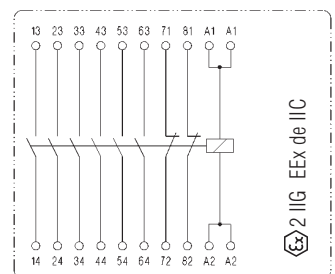
4 changeovers



8 NO

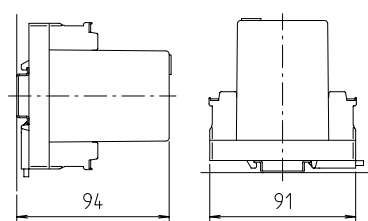


4 NO/4 NC



6 NO/2 NC

Dimensions/mounting positions



Module width: 75 mm

Note

- For use with inductive loads the relays can be connected with an effective suppressor in order to protect the contacts.

**Technical data****Enclosure material**

High-quality thermoplastics

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals2.5 mm², fine stranded**Mounting rail**

TS 35 x 7.5 (15) DIN EN 60715

Labelling

front panel label for markings

Storage temperature

-40 °C to +70 °C

Ambient temperature

-20 °C to +40 °C

Weight

0.500 kg

Explosion protection**Ex protection type**

II 2G EEx de IIC

I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

Electrical data**Operating data** (coil circuit)

U_N	I_N (8 contact decks)
DC 15 V	60 mA
DC 24 V	27 mA
DC 48 V	17 mA
AC 110 V	25 mA
AC 120 V/50 Hz	28 mA
AC 120 V/60 Hz	25 mA
AC 220 V	13 mA
AC 230/240 V	13 mA

Contact dataSwitching voltage: $U_{A \max.} = \text{AC/DC } 125 \text{ V}$ Switching current: $I_{\max.} = 1 \text{ A (per contact)}$ **Switching capacity** $P_{\max.} = 40 \text{ W/50 VA}$ **Contact material**

silver, gold-flashed

Contact arrangement

4 changeovers/8 NO/4 NO, 4 NC/6 NO, 2 NC

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Other data		AC types	DC types
Max. switching frequency (switching cycles /sec.)		20	50
Mech. service life (switching cycles)		approx.10 ⁷	approx.10 ⁸
Test voltage:	coil/contact ($V_{\sim \text{eff.}}$)	500 at $U_N \leq 60 \text{ V}$	500
	contact/contact ($V_{\sim \text{eff.}}$)	2 000 at $U_N > 60 \text{ V}$	500
		500	500

Selection chart

Contacts	Code no.	Voltage	Code no.
4 changeovers	4	DC 15 V	8
		DC 24 V	3
8 NO	C	DC 48 V	4
		AC 110 V	G
4 NO, 4 NC	H	AC 220 V	H
		AC 230/240 V	J
6 NO, 2 NC	F	AC 120 V/60 Hz	R

Complete order no.

Please enter code number.

Technical data subject to change without notice.

07-7311-977 / 100



Transformer AC 24 V/500 mA

BARTEC

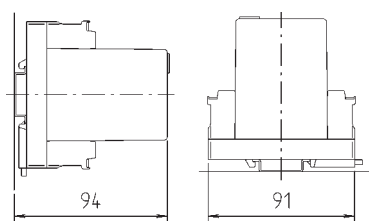
Transformer

Description

The control transformer steps down mains voltage to low voltage. Input and output are electrically isolated.

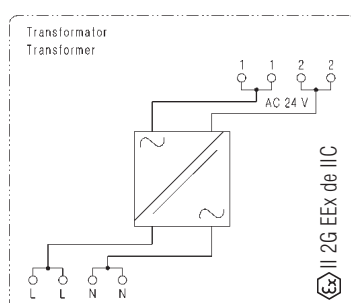
Especially suitable for supplying low power AC devices in zone 1 hazardous areas.

Dimensions/mounting positions



Module width: 75 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

one label for markings

Storage temperature

-40 °C to +60 °C

Ambient temperature

-20 °C to +60 °C

Temperature class T5

Weight

0.900 kg

Electrical data

Input voltage

AC 230 V \pm 10 %, 50 Hz

Output voltage

AC 24 V \pm 10 %

Output current

max. 500 mA

Power

12 VA

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

II 2G EEx de IIC

I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

Order no.
07-7311-97S3/H3N0

Technical data subject to change without notice.

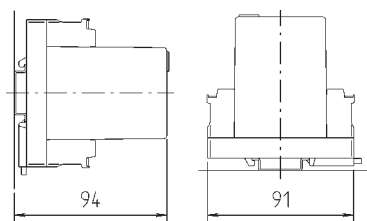


Converter

Description

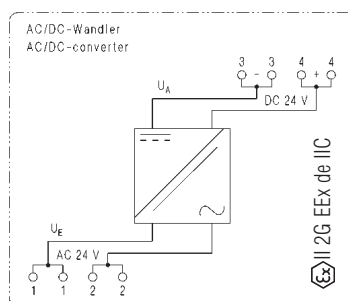
The power supply module is ideal for instrumentation and process control engineering PLCs as well as for EEx de loads with DC connection. The power supply unit has a stabilized output and offers short-circuit protection.

Dimensions/mounting positions



Module width: 75 mm

Wiring diagramm/terminal assignment



Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529
Terminal IP 20/IEC 60529

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

one label for markings

Storage temperature

-40 °C to +70 °C

Ambient temperature

-20 °C to +40 °C

Weight

0.400 kg

Electrical data

Input voltage

AC 24 V + 15 % - 5 %, 50/60 Hz

Output voltage

DC 24 V ± 5 %

Output current

450 mA

Power dissipation

≤ 2.5 W

Residual ripple

≤ 20 mV_{ss}

Power consumption

max. 13 W

Guidelines/norms/certifications

Directive 89/336/EEC
in connection with a transformer
Type 07-7311-97S3/H3N0
Directive 73/23/EEC
Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

Order no. 07-7311-97S7/AAM0

Technical data subject to change without notice.

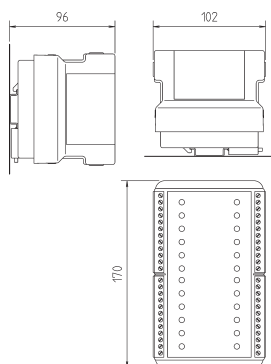


Power supply unit

Features

- Wide input range AC 94 V to 264 V
- High efficiency
- Interference immunity in according with DIN EN 6100-6-1...2

Dimensions/mounting positions



Description

This power supply unit is universally applicable and offers a wide input range. The DC output voltage is stabilized, galvanically isolated and permanently protected against short-circuits.

Technical data

Construction

Flameproof, clip-on enclosure for TS 35 rail

Enclosure material

High-quality thermoplastic

Protection class

Module	IP 66
Terminals	IP 20
Terminals with cover	IP 30

Terminals

2.5 mm², fine stranded

Labelling

front panel label for markings

Display

LEDs on front panel

Storage temperature

-25 °C to +60 °C

Ambient temperature

-20 °C to +60 °C

Weight

2.1 kg

Electrical data

Supply voltage

AC 110 to 250 V, 47 to 63 Hz

Input voltage range

AC 94 to 265 V

Nominal input current

0.6 A at AC 230 V/1.1 A at AC 120 V

Power consumption

P = 66 W (max.)

Power dissipation

$P_{V_{ges.}} = 7.3 \text{ W}$

Galvanic isolation

Input/Output

Display

Operation	LED green
Overload > 3 A resp. short-circuit	LED green flashing

Output data

Output voltage

DC 24 V +/- 3 %

Output current

2 A at $T_u < +50 \text{ °C}$

Power derating

2.5 %/K > +50 °C

Nominal output power

$P_a = 48 \text{ W}$

Residual ripple

< -10 °C $U_a / 100$; > -10 °C < 50 mV

Protection and monitoring

Permanent short-circuit protection
Overload proof

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC

Explosion protection

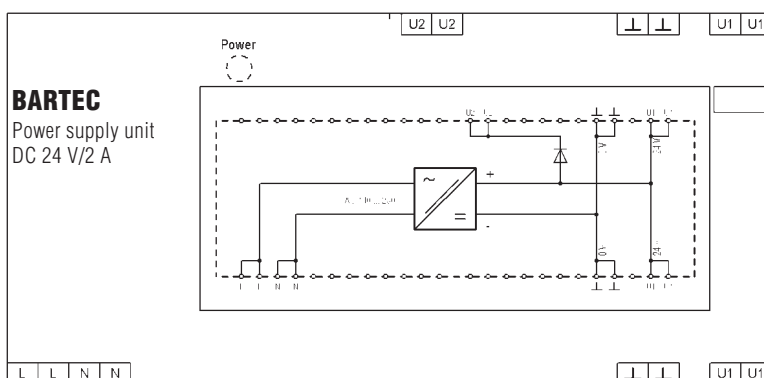
Ex protection type

Ex II 2G EEx de IIC
Ex I M2 EEx de I

Certification

PTB 97 ATEX 1066 U

Wiring diagram/terminal assignment



Note

- A clearance of 40 mm must be ensured around the power supply unit.

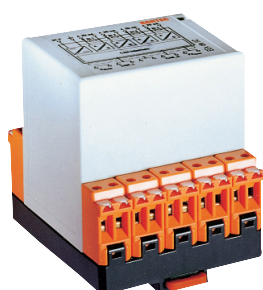
Order no.
07-7331-1201/0000

Technical data subject to change without notice.



Power supply unit AC/DC 110 to 250 V

BARTEC

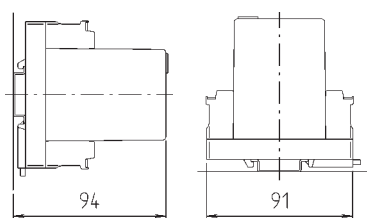


Power supply unit

Description

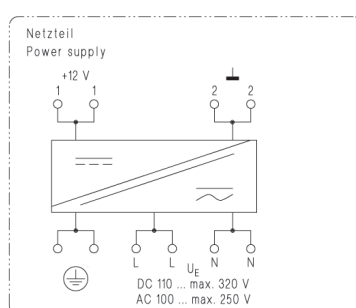
This power supply can be universally used with either AC or DC voltage on the input side. The output voltage is stabilized and conditionally short-circuit and overload-protected. An additional output circuit protection is recommended.

Dimensions/mounting positions

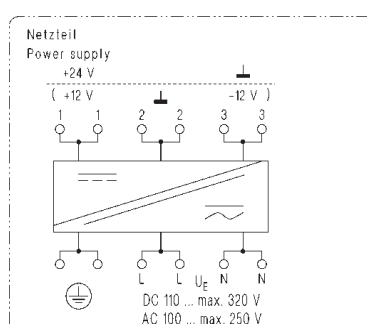


Module width: 75 mm

Wiring diagram 1/terminal assignment 1



Wiring diagram 2/terminal assignment 2



Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529

Terminals IP 20/IEC 60529

Terminals

max. 2.5 mm², fine stranded

Mounting rail

TS 35 x 15 (7.5) DIN EN 60715

Labelling

front panel label for markings

Storage temperature

-20 °C to +65 °C

Ambient temperature

mounted on rail with 8 mm spacing

-20 °C to +40 °C

Weight

0.600 kg

Electrical data

Input voltage

DC 110 V to max. 320 V

AC 100 V to max. 250 V 50/60 Hz

Output data

See selection chart

Residual ripple

max. 150 mV_{ss}

Power dissipation

max. 3 W

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

II 2G EEx de IIC

I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

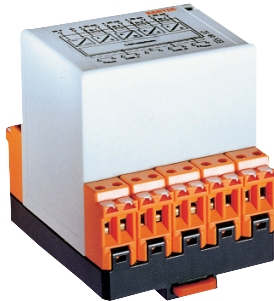
Selection chart

Output voltage	Output current	Code no.
DC 12 V ± 5 %	440 mA	5L
DC 15 V ± 5 %	350 mA	7J
DC 24 V ± 5 % resp. DC +12 V / -12 V ± 5 %	220 mA ± 220 mA	6G

➔ **07-7311-97S9/J** **0**
Complete order no.

Please enter code number.

Technical data subject to change without notice.



Isolator amplifier

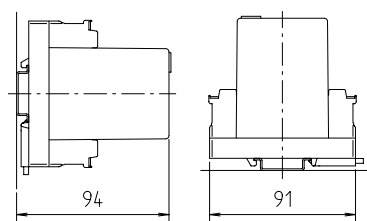
Features

- 4-channel
- for NAMUR sensors DIN EN 60947-5-6
- for mechanical contacts
- galvanic isolation DIN EN 60079-11
- LED displays
- EEx ia, ib
- active transistor outputs
- additional group fault signal output
- standard or inverted

Description

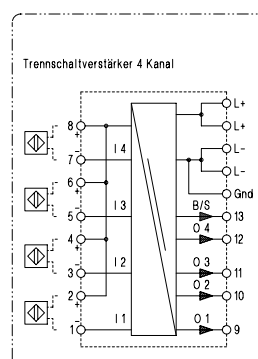
4 NAMUR sensors, optocouplers, mechanical contacts or other operating elements can be connected to the isolator amplifier in an intrinsically safe way. The intrinsically safe inputs are safely galvanically isolated from the supply voltage and the outputs in accordance with DIN EN 60947-5-6. Open- and short-circuits of the sensor lines are detected and signaled via an additional transistor output as group fault signal. LEDs display the output states.

Dimensions/mounting positions



Module width: 75 mm

Wiring diagram/terminal assignment



Technical data

Construction

Clip-on enclosure for TS 35 rail

Enclosure material

High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals

2.5 mm², fine stranded

Befestigung auf Tragschiene

TS 35 x 15 (7.5) DIN EN 50022

Labelling

front panel label for markings

Storage temperature

-40 °C to +60 °C

Ambient temperature

-20 °C to +50 °C

Weight

0.640 kg



Electrical data

Supply voltage

DC 20 V to DC 30 V

Power consumption

max. 580 mA

Power dissipation

$P_V = \text{max. } 2.4 \text{ W}$

Galvanic isolation

Inputs//power supply, outputs

Input data

Voltage

$U_a = 8.2 \text{ V}$

Switching thresholds

open circuit < 0.26 mA
damped < 1.2 mA
undamped > 2.1 mA
short circuit > 7.4 mA

Output data

Transistor outputs

output current channel max. 100 mA
signal level 1 - signal = $U_b - 1 \text{ V}$
0 - signal = 0.9 V
switching frequency 1.5 kHz

Displays

LED's for all outputs

Line monitoring

always active, separate fault signal output

Installation

isolator amplifier 4-channel

17-5521-4.../....

BARTEC Max-Eyth-Straße 16

D-97980 Bad Mergentheim

CE 0032

Ex II (1)G [Ex ia] IIC

$U_m = 253 \text{ V}$ $I_0 = 30 \text{ mA}$

$U_0 = 11.55 \text{ V}$ $P_0 = 86.4 \text{ mW}$

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2(1)G Ex de [ia] IIC

Certification

Module PTB 97 ATEX 1068 U

Enclosure TÜV 97 ATEX 1211 X

Notes

- Observe the terminal assignment
- Transistor output is not short-circuit proof
- For open/short-circuit monitoring with contact call-up, use 1 k Ω /10 k Ω resistive coupling link; Type 17-9Z62-0002

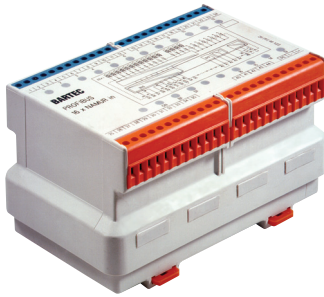
Status chart

Input			B/S	Out	B/S	Out	B/S	Out
damped			0	1	0	0	1	1
un-damped			0	0	0	1	1	0
open circuit			1	1	1	0	0	1
short circuit			1	0	1	1	0	0
Code no.			12		22		32	

Complete order no. 07-7311-97MT/BA

Please insert correct code.

Technical data subject to change without notice.



Output isolator

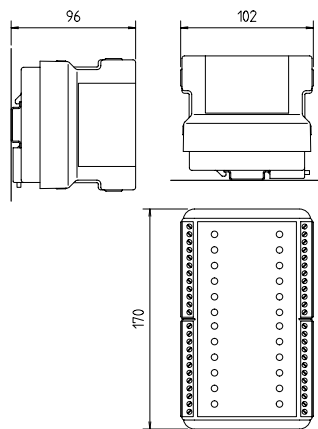
Features

- EEx ia
- Galvanic isolation
- HART compatible
- opto coupler optional

Description

The output isolation module transforms a non-intrinsically safe input current into an intrinsically safe output current while the power supply as well as the input and output circuits are safely electrically isolated from each other. SMART/HART communication is supported for all leading manufacturers. Optionally, the module is also available with an integrated optocoupler. The optocoupler module transforms a non-intrinsically safe binary input signal into an intrinsically safe output circuit.

Dimensions/Mounting positions



Explosion protection

Ex protection type

Ex II 2(1)G EEx de [ia] IIC

Certification

Enclosure

PTB 97 ATEX 1066 U

Module (output isolator)

TÜV 98 ATEX 1278 X

Module (opto-coupler)

TÜV 01 ATEX 1715

Safety data

Output isolator

$U_o = 27.3 \text{ V}$ $I_o = 93 \text{ mA}$

$P_o = 635 \text{ mW}$

$L_o = 2.2 \text{ mH (IIC)}/14.8 \text{ mH (IIB)}$

$C_o = 88 \text{ nF (IIC)}/683 \text{ nF (IIB)}$

Opto coupler

$U_i = 60 \text{ V}$

$L_i = \text{negligible small}$

$C_i = \text{negligible small}$

Technical data

Construction

Flameproof, clip-on enclosure for TS 35 rail

Enclosure materials

High-quality thermoplastic

Protection class

Module IP 66

Terminals IP 20

Terminals with cover IP 30

Connection terminals

2.5 mm², fine stranded

Labelling

front panel label for markings

Display

LEDs on front panel

Storage temperature

-40 °C to +65 °C

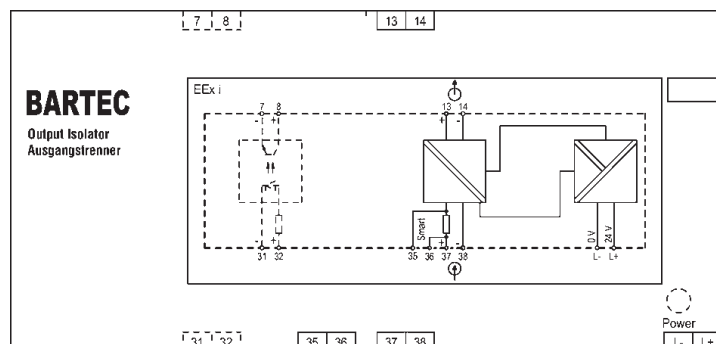
Ambient temperature

-20 °C to +60 °C

Weight

2.1 kg

Wiring diagram/terminal assignment





Electrical data output isolator

Supply voltage (L+, L-)

20.4 V DC to 30 V DC
(polarity reversal protection)
20 V AC to 26.4 V AC (48 to 62 Hz)

Power consumption

$P = 1.3 \text{ W}/1.5 \text{ VA}$

Electrical isolation

L+, L-//input/output

Display

Power LED

Input data

Input circuit

Terminals 37 and 38 (max. values)
 $U = 5 \text{ V}$
 $I = 50 \text{ mA}$
 $U_m = 253 \text{ V}$

Input resistance

50Ω static
 250Ω dynamic

Output data

Output circuit

0/4 to 20 mA impressed current

Load

$< 750 \Omega$

Linearity

Ripple content of the output signal

$< 0.5 \%$ of the span

Load influence

$< 0.05 \%$

Auxiliary power influence

$< 0.05 \%$

Temperature drift

$< 0.1 \%/10 \text{ K}$

Electrical data opto coupler

Input circuit

Terminals 31 and 32
 $U_a = 20 \text{ V DC}$ to 28 V DC
(polarity reversal protection)
 $I = 5.5 \text{ mA}$ to 9.2 mA

Output circuit (Terminals 7 and 8)

$U_a = 4 \text{ V DC}$ to 30 V DC
 $I = \leq 50 \text{ mA}$
Saturation voltage $\leq 1.2 \text{ V}$

Total power loss

$\leq 350 \text{ mW}$

Electrical isolation

Input/output
 $U_m = 235 \text{ V}$

Transformation data

Switching frequency

Max. 10 kHz (with $U_a = 10 \text{ V}$)
Max. 2.5 kHz (with $U_a = 30 \text{ V}$)

Switching times measured at

$U_e = 20 \text{ V}_{ss}$

$U_a = 10 \text{ V}$

$I_a = 50 \text{ mA}$

Rise time	approx. $10 \mu\text{s}$
Fall time	approx. $10 \mu\text{s}$
Switch-on time	approx. $15 \mu\text{s}$
Switch-off time	approx. $25 \mu\text{s}$

Guidelines/norms/certifications

Directive 89/336/EEC
NAMUR NE 21
Directive 94/9/EC

Selection chart

Design	Code no.
Standard	0
with opto coupler	1

Complete order no.

Please enter code number.

Technical data subject to change without notice.

07-7331-4200/000



Measuring transducer

Description

The MODEX series includes a temperature measuring transducer mounted on-site in the same way as a modular terminal. The module transforms the signal received from the PT 100 temperature sensor into a proportional, load-independent 4 to 20 mA output signal. The sensor circuit is intrinsically safe according to Ex protection type EEx ia. An output current exceeding the 4 to 20 mA range signals a sensor fault (open/short circuit). The PT 100 temperature sensor can be operated in 2- or 3-wire circuits within zone 0 or 1.

Temperature range

-50 °C to +100 °C
0 °C to +200 °C
0 °C to +400 °C

Accuracy

± 1 % of upper value

Function test

Connect 100 Ω resistance to terminal 15-16 and bridge terminals 16 and 17. Apply current between L- and terminal 31.

Enclosure

Pt 100 measuring transducer
17-6582-1.../....
BARTEC Max-Eyth-Straße 16
D-97980 Bad Mergentheim

CE 0032

Ex II (1)G [EEx ia] IIC

$U_m = 253 \text{ V}$ $I_o = 63.1 \text{ mA}$
 $U_o = 21 \text{ V}$ $P_o = 331 \text{ mW}$

EEx ia	IIC	IIB
$L_o \text{ (mH)} \leq$	9	35
$C_o \text{ (nF)} \leq$	170	1250

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2(1)G EEx de [ia] IIC

Certification

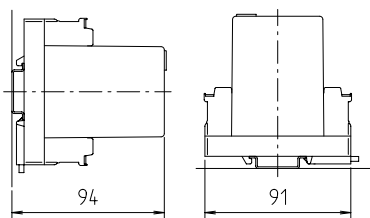
Module PTB 97 ATEX 1068 U
Enclosure TÜV 97 ATEX 1204 X

Note: Observe terminal assignment.

Features

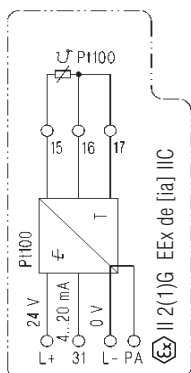
- For Pt 100
- Analog output 4 to 20 mA
- Fault detector
- EEx ia, ib
- Two-, three-wire sensors
- EMV according to DIN EN 6100-6-3...4 and DIN EN 6100-6-1...2

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 15 (7.5) DIN EN 50022

Labelling

one label per terminal

Storage temperature

-40 °C to +60 °C

Ambient temperature

-25 °C to +60 °C

Weight

0.250 kg

Electrical data

Operating voltage

DC 24 V + 10%, - 15%

Power consumption

0.6 W

Sensor

Pt 100 temperature sensor
2- or 3-wire circuits

Output

Load independent current: 4 to 20 mA
Max. load ≤ 400 Ω

Selection chart

Temperature range	Code no.
-50 °C to +100 °C	5
0 °C to +200 °C	7
0 °C to +400 °C	9
0 °C to +150 °C	A

07-7311-93T4 / 350

Complete order no.

Please insert correct code.



Two-position controller

BARTEC



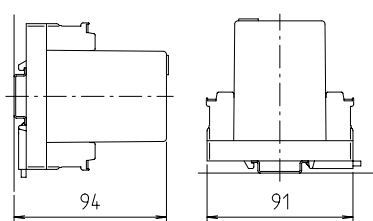
Two-position controller

Description

MODEX controller module for more switching configurations in the Ex area. The standard two-position controller monitors limit values (limit monitor). The analog input signal is compared with the potentiometer setpoint.

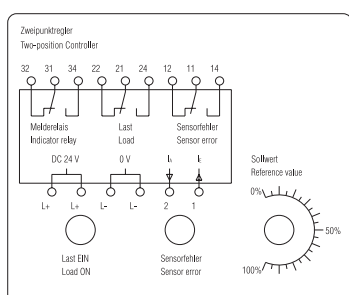
A floating relay changeover contact is provided as output. The two-point controller is available with overcurrent/undercurrent detection, current output and signalling relay. The current output allows you to loop in (input current balancing) further devices up to a total load of 400 Ω into power circuit (4 to 20 mA).

Dimensions/mounting positions



Module width: 75 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 15 (7.5) DIN EN 50022

Labelling

one label per terminal

Storage temperature

-40 °C to +60 °C

Ambient temperature

mounted on rail
with spacing \geq 16 mm:
-20 °C to +40 °C

Weight

0.500 kg

Electrical data

Supply voltage

DC 24 V + 15 %

Nominal power

max. 2.5 W

Input signal

0 to 35 mA
 \leq 3.5 mA - undercurrent
 \geq 25 mA - overcurrent
4 to 20 mA \approx 0 to 100 %
Load: 200 Ω

Hysteresis

2 mA

Repeat accuracy

\pm 0.5 % of under range limit (20 mA)

Ambient temperature

Influence: \leq 0.008 %/K

Outputs

Relay output:
Load: AC 250 V 3 A, 750 VA

Optional

Signal relay: AC 250 V, 1 A, 250 VA

Sensor fault relay: AC 250 V, 1 A, 250 VA

Current output: 4 to 20 mA

Load: 400 Ω

Guidelines/norms/certifications

Directive 89/366/EEC

Directive 94/9/EC

Explosion protection

Ex protection type

Ex II 2G EEx de IIC

Ex I M2 EEx de I

Certification

PTB 97 ATEX 1068 U

Selection chart

Options	Code no.
Standard	0
With make/break monitor current output and signal relay	5

07-7311-97ER/31 0

Complete order no.

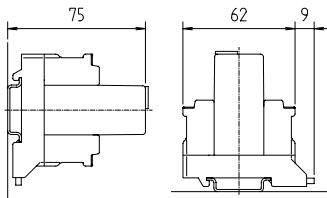
Please enter code number.

Technical data subject to change without notice.



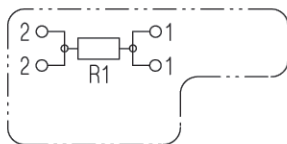
(Precision) Resistors

Dimensions/mounting position

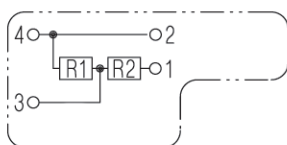


Module width: 15 mm

Wiring diagram 1/terminal assignment 1



Wiring diagram 2/terminal assignment 2



Description

For general use throughout the field of measuring and control engineering for hazardous areas (eg. monitoring switching contacts, open circuit monitoring).

Explosion protection

Ex protection type

- II 2G EEx de IIC
- I M2 EEx de I

Certification

PTB 98 ATEX 1010 U

Technical data

Enclosure material

High quality thermoplastic

Protection class

Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) DIN EN 60715

Labelling

One label onto which markings can be placed

Ambient temperature

-20 °C to +40 °C

Storage temperature

-40 °C to +70 °C

Weight

0.050 kg

Electrical data see selection chart

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC

Selection chart

Rating	Code no.	Spacing	Wiring diagram terminal assignment
R1 10 kΩ ± 1 % R2 1 kΩ ± 1 % $I_{max} = 6 \text{ mA}$	0	without	2
R1 3.3 kΩ ± 1 % R2 1.8 kΩ ± 1 % $I_{max} = 8 \text{ mA}$	1	without	2
R1 4.7 kΩ ± 5 % $I_{max} = 12 \text{ mA}$	2	without	1
R1 120 Ω ± 1 % $I_{max} = 60 \text{ mA}$	3	without	1
R1 1 kΩ ± 1 % $I_{max} = 25 \text{ mA}$	4	without	1
R1 250 Ω ± 0.1 % $I_{max} = 50 \text{ mA}$	5	without	1

Complete order no. 07-7311-61TW / 0 00

Please enter code number.

Technical data subject to change without notice.



(Precision) Resistors

Description

For general use throughout the field of measuring and control engineering for hazardous areas (e. g. monitoring switching contacts, open circuit monitoring).

Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TS 35 x 7.5 (15) DIN EN 60715

Labelling
written marking labels

Storage temperature
-40 °C to +70 °C

Ambient temperature
-20 °C to +40 °C

Weight
0.110 kg

Electrical data
see selection chart

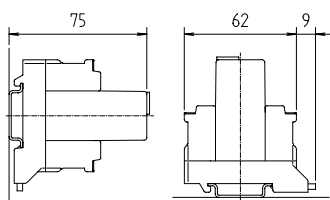
Guidelines/norms/certifications
Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC

Explosion protection

Ex protection type
Ex II 2G EEx de IIC
Ex I M2 EEx de I

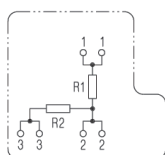
Certification
PTB 97 ATEX 1068 U

Dimensions/mounting positions

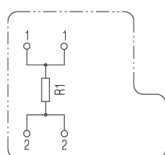


Module width: 30 mm

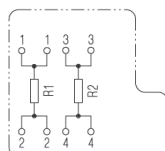
Wiring diagram 1/terminal assignment 1



Wiring diagram 2/terminal assignment 2



Wiring diagram 3/terminal assignment 3

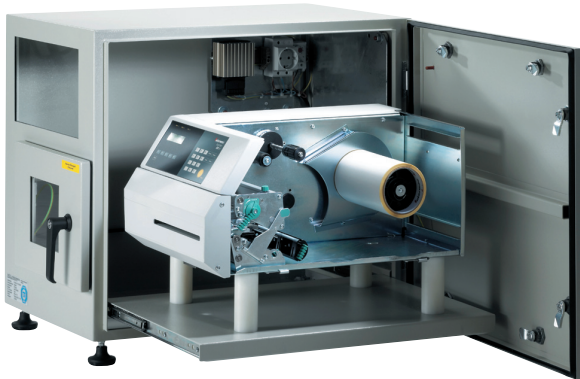


Selection chart

Rating	Code no.	Spacing	Wiring diagram terminal assignment
R1 4.7 kΩ ± 10 % R2 10 kΩ ± 10 % $I_{max} = 5 \text{ mA}$	01A0	without	1
R1 100 Ω ± 1 % R2 100 Ω ± 1 % $I_{max} = 50 \text{ mA}$	0251	without	3
R1 2.2 kΩ ± 1 % R2 680 Ω ± 5 % $I_{max} = 15 \text{ mA}$ $I_{max} = 35 \text{ mA}$	03A0	8 mm	3
R1 680 Ω ± 5 % $I_{max} = 35 \text{ mA}$	04A0	without	2
R1 1 kΩ ± 1 % R2 10 kΩ ± 1 % $I_{max} = 20 \text{ mA}$ $I_{max} = 5 \text{ mA}$	05G0	without	3
R1 820 Ω ± 5 % $I_{max} = 35 \text{ mA}$	0600	without	2
R1 3.3 kΩ ± 5 % $I_{max} = 17 \text{ mA}$	0700	without	2
R1 2.7 kΩ ± 5 % $I_{max} = 19 \text{ mA}$	0800	without	2
R1 3 kΩ ± 1 % R2 4.3 kΩ ± 1 % $I_{max} = 10 \text{ mA}$ $I_{max} = 9 \text{ mA}$	0900	without	3
R1 82 Ω ± 1 % R2 100 Ω ± 1 % $I_{max} = 70 \text{ mA}$ $I_{max} = 60 \text{ mA}$	1000	without	3
R1 120 Ω ± 1 % R2 150 Ω ± 1 % $I_{max} = 60 \text{ mA}$ $I_{max} = 50 \text{ mA}$	1100	without	3
R1 6.8 kΩ ± 1 % R2 820 Ω ± 1 % $I_{max} = 3.5 \text{ mA}$ $I_{max} = 29 \text{ mA}$	1200	without	3
R1 680 Ω ± 2 % R2 3.3 kΩ ± 2 % $I_{max} = 25 \text{ mA}$ $I_{max} = 10 \text{ mA}$	1300	without	1
R1 2,2 Ω ± 2 % R2 3,3 kΩ ± 2 % $I_{max} = 15 \text{ mA}$ $I_{max} = 10 \text{ mA}$	1400	without	1

➔ **Complete order no. 07-7311-63TW/**

Please enter code number. Technical data subject to change without notice.



EEx p combination cabinets

Description

The increasing demand of complex automation functions for processes in the field of chemistry, pharmacy, oil and gas calls for flexible, safe and maintenance-friendly solutions for measuring, controlling, regulating and visualization tasks, particularly in potentially explosive areas. Complete control systems and switchgear, motors, actuators and pumps, open-plan displays, industrial monitors incl. keyboards and printers must be made ready for applications in hazardous areas.

For many applications the EEx p pressurized enclosure is one of the most flexible Ex solutions. Thanks to this type of protection, non-explosion proof devices can be operated in potentially explosive areas of zone 1 and 2. The underlying idea is to prevent an explosive atmosphere from entering a sealed protective enclosure by generating a permanent overpressure against the surrounding atmosphere. With its pressurized EEx p combination cabinet, BARTEC offers a completely new Ex solution for the control and automation of devices, machines and systems in zone 1 and 2.

Depending on the application, non-explosion-proof control units and switchgear as well as complete automation systems are mounted into the EEx p combination cabinet. On the basis of the modular APEX 2003 overpressure control, which has been certified in accordance with ATEX, modern, operationable Ex solutions are realized - including the required certification in accordance with 94/9/EC.

The stirring gas overpressure is realized by a compensation of the leakage losses or by permanent flushing. The EEx p combination cabinet has been designed for an ambient temperature between -20 °C and +60 °C in the temperature classes T3 to T5. For temperature class T6, an ambient temperature between -20 °C and +40 °C is permissible.

The maintenance and availability of the explosion-proof devices and system has top priority. Within the course of many years, the BARTEC experts have gathered substantial experience with explosion protection applications as well as the conception of complete system solutions for automation. On the basis of this know-how, safe and economically efficient solutions ranging from engineering over production and procurement via commissioning and approval have been developed.

Depending on the application, EEx p solutions are realized with sheet-steel, stainless steel or plastic, with air-conditioning, different lacquer coats, seawater-resistant and tropic-proof. BARTEC solutions also comprise commissioning and function checks. For integration into the already existing explosion protection document, a detailed operating manual is supplied. In addition to this, introduction and training measures for qualified staff members may be implemented upon request.

➔ Explosion protection

Ex protection type

Ex II 2G EEx p IIB/IIC T3/T4/T5/T6

Certification

TÜV 03 ATEX 2264

Ambient temperature

-20 °C to +40 °C (+60 °C)

➔ Technical data

Structure

Standard enclosure or
tailor-made solutions

Enclosure material

Coated sheet-steel
stainless steel, plastic

Protection class

IP 55/IP 65

Overpressure range

0 to 25 mbar
0 to 300 mbar
0 to 1000 mbar

Stirring gas

Compressed air or inert gas $T_{max} = 40\text{ °C}$

Stirring gas

0 to 99 min; 5 sec. drop-out delayed

■ Electrical data

Supply voltage

max. AC 690 V

Power consumption

depending on the application

Make contact

K 2/3, 5 A for $\cos \varphi = 1$
K 4 and K 5, voltage free

Optional switching amplifier

up to 30 kW

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC



EEx p combination cabinets

- Devices
- Printers
- Operator terminals
- Control units
- Frequency converters
- Monitors
- Motors

Air-conditioning selection

- Operating heating
- Standstill heating
- Air cooler
- Air-conditionier
- Water-air cooler



Accessories

- Stirring gas filter systems
- Power amplifier up to 30 kW
- Interposing relays for data performances
- Bypass key switches



EEx p control unit standard version

Features

- 4 voltage free contacts
- 3-line LCD display
- LED status display
- Modular design
- Fail-safe control

Description

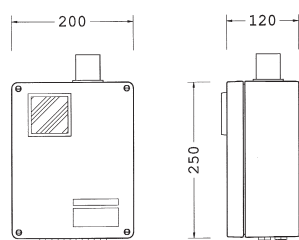
The EEx p control unit APEX 2003.00 controls and monitors the purging and operating cycle of standard EEx p enclosures.

Purging gas input is via a digital valve up to NW 7.7 (74 m³/h) or a proportional valve up to NW 2 (5 m³/h).

The purge time is set at the control module via a turn switch, the setting of the pushbutton values is via pushbutton or RS 485 interface.

The control unit provides 4 freely programmable relay outputs.

Dimensions/mounting positions



Explosion protection

Ex protection type

Ex II 2(1)G EEx ed ib [ia p] IIC T4/T6 or
EEx ed [ia p] IIC T6

Certification

DMT 99 ATEX E082

Ambient temperature

-20 °C to +40 °C

Technical data

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC

Construction

EEx e protective enclosure
with viewport lid

Enclosure material

glass-fibre reinforced polyester

Protection class

IP 65

Terminals

2.5 mm², fine stranded

Pressure sensors

MIN A = 0 to 25 mbar
MIN B = 0 to 25 mbar
MAX = 0 to 25 mbar
MAX 1 = 0 to 25 mbar
DIFF A = 0 to 25 mbar
DIFF B = 0 to 25 mbar

Purging time

0 to 99 min; 5 sec. dropout delay

Weight

4.3 kg

Electrical data

Supply voltage

AC 230 V (AC 115 V) ±10%

Power consumption

P_v = 8 W/230 V

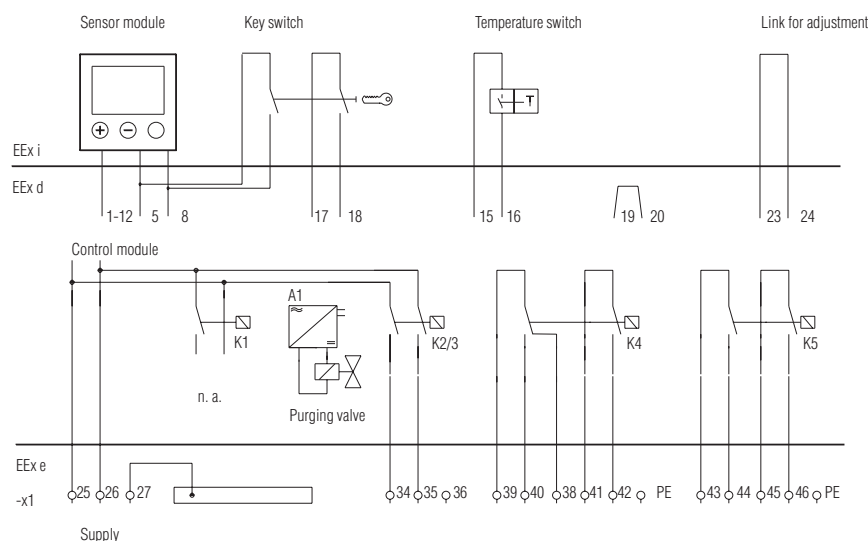
Make contact

K 2/3, 5 A for cos φ = 1
K 4 and K 5, voltage free

Temperature switching value (optional)

0 °C to +80 °C

Wiring diagram/terminal assignment



Selection chart

Version	Code no.
230 V	1
115 V	2

07-3711-1214/ 001
Complete order no.

Please enter code number.

Technical data subject to change without notice.



EEx p control unit for control cabinets

➔ Technical data

Guidelines/norms/certifications

Directive 89/336/EEC
Directive 73/23/EEC
Directive 94/9/EC

Construction

EEx e protective enclosure
with viewport lid

Enclosure material

glass-fibre reinforced polyester

Protection class

IP 65

Terminals

2.5 mm², fine stranded

Pressure sensors

MIN A = 0 to 25 mbar
MIN B = 0 to 25 mbar
MAX = 0 to 25 mbar
MAX 1 = 0 to 25 mbar
DIFF A = 0 to 25 mbar
DIFF B = 0 to 25 mbar

Purging time

0 to 99 min; 5 sec. dropout delay

Weight

7.5 kg

■ Electrical data

Supply voltage

AC 230 V (AC 115 V) ±10%

Power consumption

P_v = 8 W/230 V

Make contact

K 2/3, 5 A for cos φ = 1
K 4 and K 5, voltage free

Temperature switching value (optional)

0 °C to +80 °C

Features

- 4 voltage free contacts
- 3-line LCD display
- LED status display
- Modular design
- Fail-safe control

Description

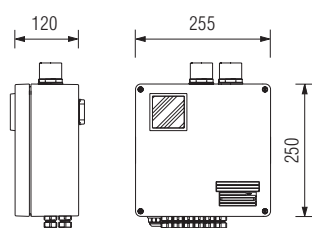
The EEx p control unit APEX 2003.002x controls and monitors the purging and operating cycle of standard EEx p enclosures.

Purging gas input is via a digital valve up to NW 7.7 (74 m³/h) or a proportional valve up to NW 6 (45 m³/h).

The purge time is set at the control module via a turn switch, the setting of the pushbutton values is via pushbutton or RS 485 interface.

These control unit reduce the flushing time by half against the standard unit.

Dimensions/mounting positions



➔ Explosion protection

Ex protection type

Ex II 2(1)G EEx ed ib [ia p] IIC T4/T6 or
EEx ed [ia p] IIC T6

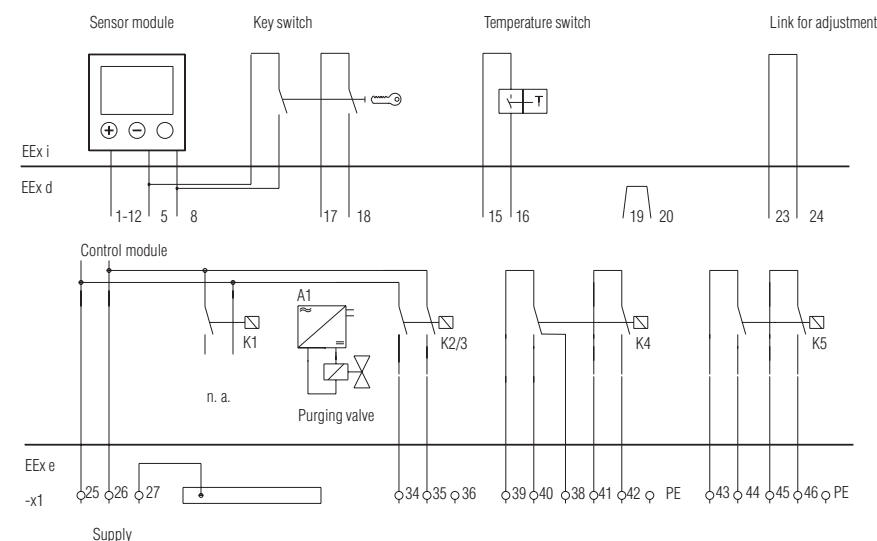
Certification

DMT 99 ATEX E082

Ambient temperature

-20 °C to +40 °C

Wiring diagram/terminal assignment



Selection chart

Version	Code no.
230 V	1
115 V	2

07-3711-1216/ 017

➔ Complete order no.

Please enter code number.
Technical data subject to change without notice.

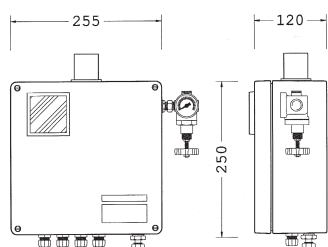


EEx p control unit for small EEx p enclosures

Features

- 4 voltage free contacts
- 3-line LCD display
- LED status display
- Modular design
- Fail-safe control
- Integrated valve switch
- 10 mm purging gas input

Dimensions/mounting positions



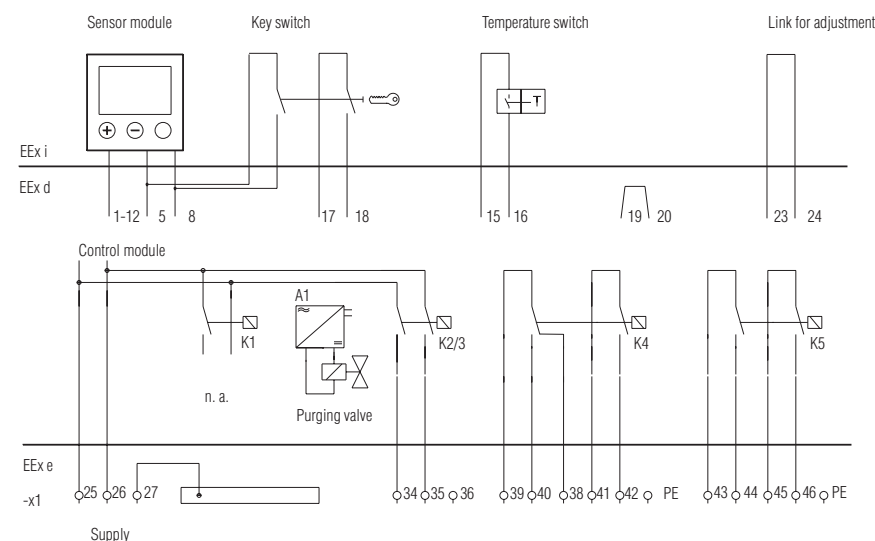
Description

The EEx p control unit APEX 2003.MV controls and monitors the purging and operating cycle of small or separate EEx p enclosure.

The purging gas flow rate during purging is 4100 l/h. The purging time is set via rotary switch on the control module, the pressure switching values via pushbutton or RS 485 interface.

The control unit provides 4 freely programmable relay outputs.

Wiring diagram/terminal assignment



➤ Explosion protection

Ex protection type

Ex II 2(1)G EEx ed ib [ia p] IIC T4

Certification

DMT 99 ATEX E082

Ambient temperature

-20 °C to +40 °C

➤ Technical data

Guidelines/norms/certifications

Directive 89/336/ECC

Directive 73/23/ECC

Directive 94/9/EC

Construction

EEx e protective enclosure with viewport lid

Enclosure material

glass-fibre reinforced polyester

Protection class

IP 65

Terminals

2.5 mm², fine stranded

Pressure sensors

MIN A = 0 to 25 mbar

MIN B = 0 to 25 mbar

MAX = 0 to 25 mbar

MAX 1 = 0 to 25 mbar

DIFF A = 0 to 25 mbar

DIFF B = 0 to 25 mbar

Purging time

0 bis 99 min; 5 sec. dropout delay

Weight

5.9 kg

■ Electrical data

Supply voltage

AC 230 V (AC 115 V) ±10%

Power consumption

P_v = 15 W/230 V

Make contact

K 2/3, 5 A for cos φ = 1

K 4 and K 5; voltage free

Temperature switching value (optional)

0 °C to +80 °C

Selection chart

Version	Code no.
230 V	1
115 V	2

07-3711-2213/ 001

➤ Complete order no.

Please enter code number.

Technical data subject to change without notice.



EEx p control unit for analysers

Features

- 12 voltage free contacts
- 3-line LCD display
- LED status display
- Modular design
- Fail-safe control
- Integrated valve switches for purging gas input and output
- 10 mm purging gas input
- Connection possibility of separate pressure sensors

Description

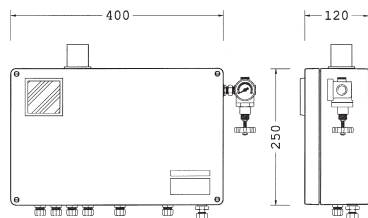
The EEx p control unit APEX 2003.MV controls and monitors the purging and operating cycle of analysers with "Containment Systems"

Additional function:

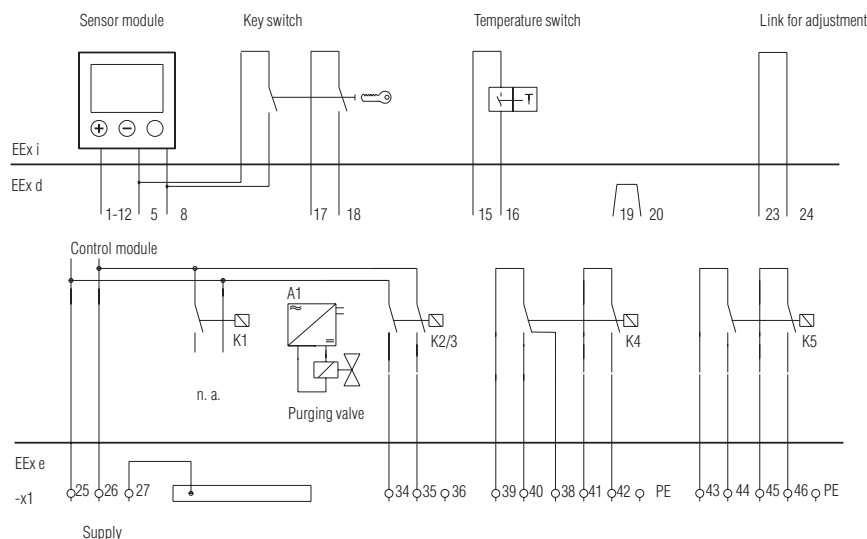
By means of additional pressure sensors, a proportional valve adjusts the interior enclosure pressure to a value which is higher than that of the measuring gas. The purging gas flow rate during purging is 4100 NI/h at an interior enclosure pressure of 50 mbar.

4 freely programmable relay outputs and 8 contact assemblies are available for the separation of data lines.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Explosion protection

Ex protection type

Ex II 2(1)G EEx ed ib [ia p] IIC T4

Certification

DMT 99 ATEX E082

Ambient temperature

-20 °C to +40 °C

Technical data

Guidelines/norms/certifications

Directive 89/336/EEC

Directive 73/23/EEC

Directive 94/9/EC

Construction

EEx e protective enclosure with viewport lid

Enclosure material

glass-fiber reinforced, polyester

Protection class

IP 65

Terminals

2.5 mm², fine stranded

Pressure time

MIN A = 0 to 300 mbar

MIN B = 0 to 300 mbar

MAX = 0 to 300 mbar

MAX 1 = 0 to 300 mbar

DIFF A = 0 to 25 mbar

DIFF B = 0 to 25 mbar

Purging time

0 bis 99 min; 5 sec. dropout delay

Weight

11 kg

Electrical data

Supply voltage

AC 230 (AC 115 V) ±10 %

Power consumption

P_v = 21 W/230 V

Make contact

K 2/3, 5 A for cos φ = 1

K 4 and K 5, voltage free

Temperature switching value (optional)

0 °C to +80 °C

Selection chart

Version	Code no.
230 V	1
115 V	2

07-3711-3223/ 001

Complete order no.

Please enter code number.

Technical data subject to change without notice.



Input valve

Technical data

Certification

according to DMT 99 ATEX E082

Ambient temperature

-40 °C to +60 °C

Cable length

3 m

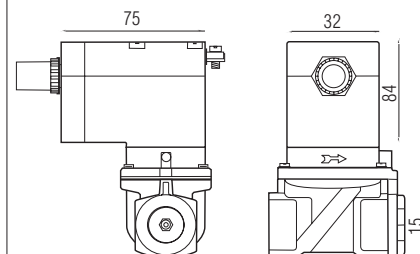
Input valve

with integrated leakage air valve

Supply voltage

AC 230 V (AC 115 V)

Dimensions input valve



Selection chart

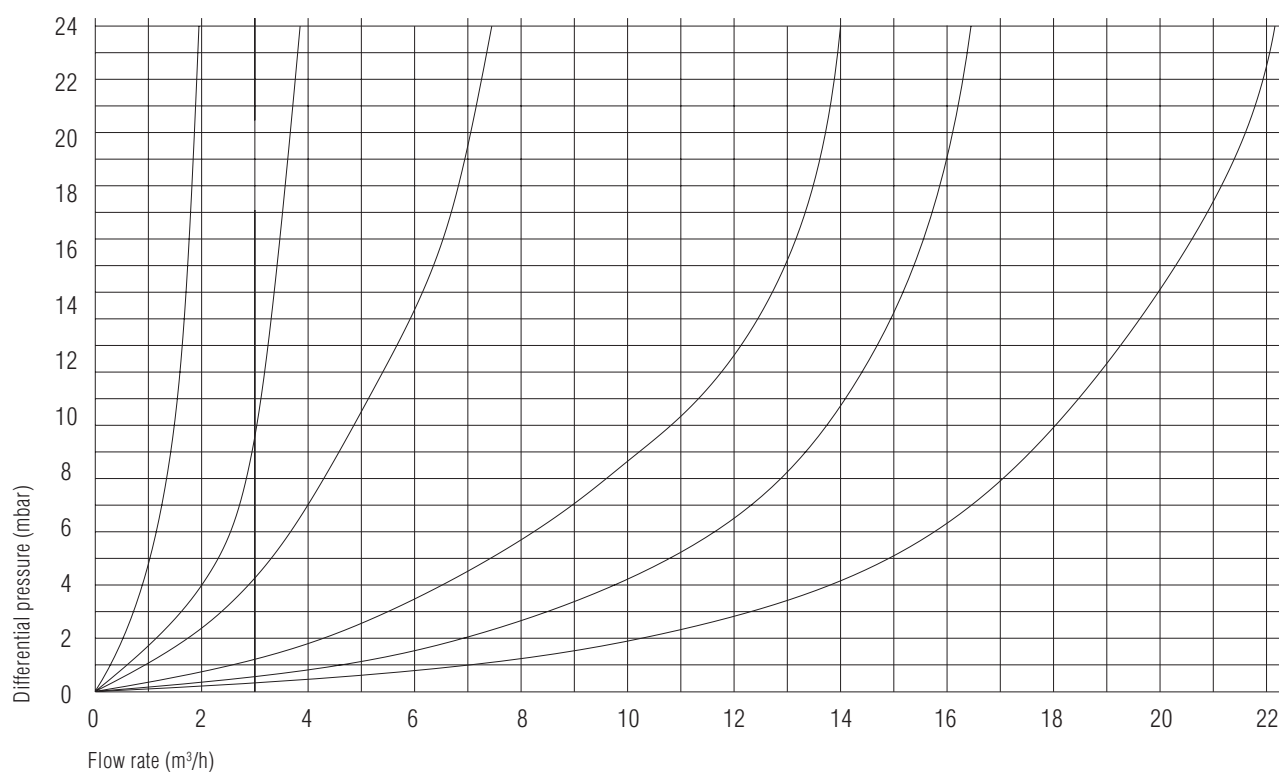
Threaded end	Purging air nozzle	Nominal flow rate	Code no.	Version	Code no.
1/4 inch	Ø 2.0 mm	5.0 Nm³/h	1	230 V	1
3/8 inch	Ø 2.8 mm	9.8 Nm³/h	2		
3/8 inch	Ø 3.9 mm	19.0 Nm³/h	3		
3/8 inch	Ø 5.5 mm	37.8 Nm³/h	4	115 V	2
1/2 inch	Ø 7.7 mm	74.0 Nm³/h	5		
1/2 inch	Ø 10.7 mm	143.0 Nm³/h	6		

Complete order no.

Please enter code number.

05-0056-000 / 000

Purging time diagram





SILAS controller for Zone 2 and Zone 22

BARTEC



*EEx pz
Control unit
SILAS*

Features

- Easy to handle
- Ultra flat
- Separate purging gas input and output

Description

The SILAS controller is used to control pressurised control cabinets in Zone 2 and 22.

Programming is simplified by equipping the controller with a power switch and a selector switch for displaying and adjusting the different pressure values and can be observed by means of an integrated display.

Three relays are available for signal and control functions. The status of the relays are additionally visualized by means of an associated LED display. Set points can be enquired and changed by means of control keys during operation.

Solution variants

- for small EEx pz control enclosures in Zone 2 including:
Silas Controller
Purge valve R 3/8"
1 x Pressure control device Type 17-51P3
- for large EEx pz control cabinets in Zone 2 including:
Silas Controller
Purge valve R 1/2"
1 x Pressure control device Type 17-51P3
- for all applications in Zone 22 including:
Silas Controller
Pressure reducer with leakage needle valve

Technical data

Operation

- LCD display
- 1 power switch
- 1 BCD switch to select which parameters are displayed
- 3 pushbuttons to change parameters
- 3 LEDs for displaying the states of the switching relay
- 1 connection socket for bypass switch

Weight

1.2 kg

Supply voltage

AC 120 V or 240 V, 50/60 Hz
DC 24 V

Relays

1. alarm relay, potential-free
2. control relay for purge valve
3. signal relay for transferring operating states

Explosion protection

Ex protection type

- Ex II 3G EEx nAC [pz] IIC T4 or T6
- Ex II 3tD A22 IP 65 T 80 °C

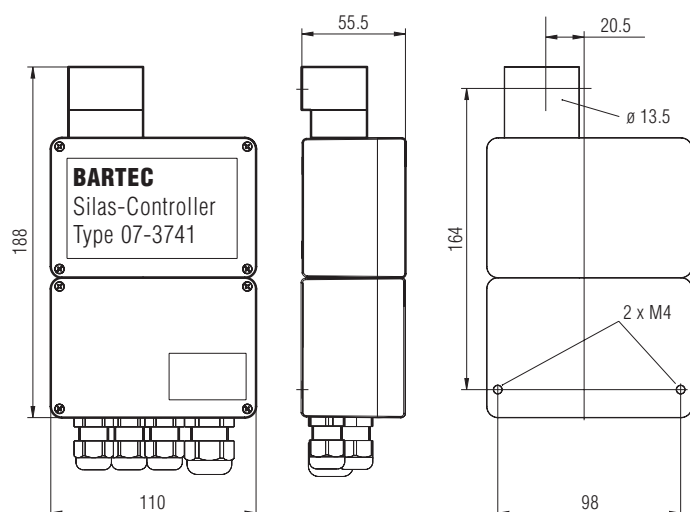
Certification

has been submitted

Ambient temperature range

-20 °C to +60 °C

Dimensions



Selection chart

Version	Code no.
AC 230 V	1
AC 115 V	2
DC 24 V	4

➔ **A7-3741-1110/ 000**
Complete order no.

Please enter code number.

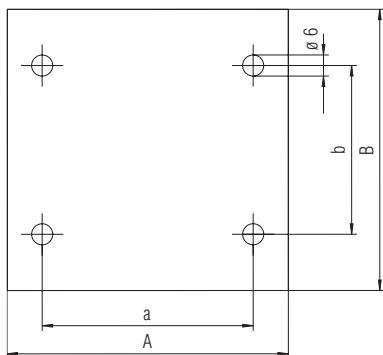


Control stations in flameproof enclosures for Zone 1 + 2 and for Zone 21 + 22

BARTEC

Control stations in flameproof enclosures

Dimensions Mounting plate



Description

The control stations in flameproof enclosure of the GUB series in compact design allow standard electronics and control components to be installed. The enclosure is light; numerous connection systems can be used; flanging is possible; can be equipped with electrical or mechanical bushings at the edges.

The GUB control stations can be applied in hazardous areas, Zone 1 and Zone 2 as well as in areas endangered by flammable dusts, Zone 21 and Zone 22.

➔ Explosion protection

Ex protection type

Ex II 2GD EEx d IIC T6 or T5
IP 66 T 85 °C or T 100 °C

Certification

ATEX submitted

➔ Technical data

Protection class

max. IP 66

Enclosure material

copper-free aluminium pressure casting

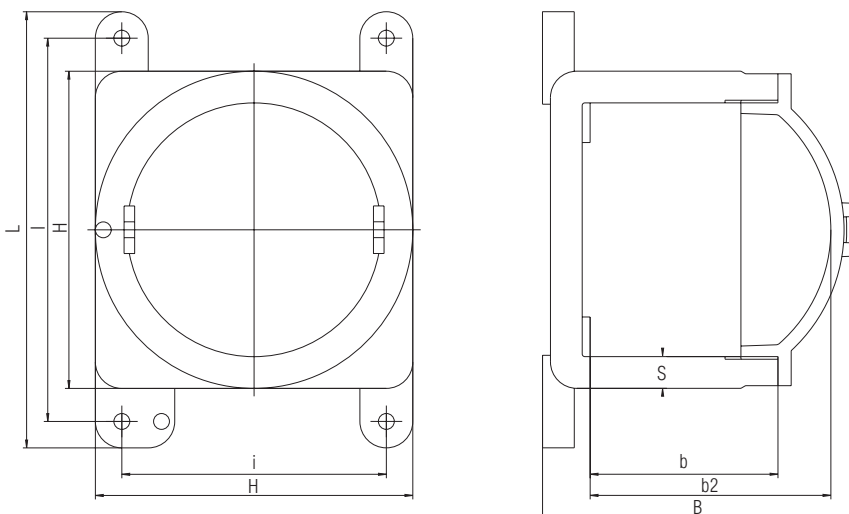
Surface

standard, unlacquered
Internal and external lacquering possible in
RAL colours

Electrical connection

Via cable entry or via cable gland

Dimensions





Control stations in flameproof enclosures

for Zone 1 + 2 and for Zone 21 + 22

BARTEC

Enclosure										
Type	Order no.	Dimensions (mm)								Weight (kg)
		B	b	b2	H	I	i	L	S	
GUB	07-4120	116	81	91	120	145	100	165	12	1.6
GUB 0	07-4140	130	89	98	150	174	126	198	12	2.6
GUB 01	07-4150	139	99	108	174	195	150	218	12	3.6
GUB 02	07-4160	165	113	130	230	267	196	302	12	6.4
GUB 03	07-4170	217	158	181	276	316	236	256	12	11.4
GUB 04	07-4180	290	185	215	430	480	390	520	16	29.4

Mounting plate					
	Enclosure	A	B	a	b
GUB	07-4120	80	80	60	48
GUB 0	07-4140	100	100	80	60
GUB 01	07-4150	115	115	90	90
GUB 02	07-4160	150	150	130	130
GUB 03	07-4170	170	170	158	158
GUB 04	07-4180	270	270	230	230

Selection chart			
Enclosure size	Code no.	Cover variants	Code no.
120 x 120 GUB	2	closed	1
150 x 150 GUB 0	4		
174 x 174 GUB 01	5		
230 x 230 GUB 02	6	with window only for GUB 0, GUB 01, GUB 02, GUB 03	7
276 x 276 GUB 03	7		
430 x 430 GUB 04	8		

➔ **Complete order no.** **07-41** **0-1** **61**

Please enter code number. Technical data subject to change without notice.



Control and switchgear units with metal flameproof EN enclosures

Description

These BARTEC enclosures offer a variety of options for control equipment in Ex areas. Flameproof enclosures in compliance standard with EN are available for electrical devices such as contactors, relays, barriers, electronic controllers and PLC-D/A-modules.

BARTEC flameproof cable bushings are provided for cable interconnections between the EEx d & EEx e enclosures. Inside the EEx e enclosure the conductors are connected to Ex e terminal blocks. The pushbuttons, switches and LEDs are located on the cover of the EEx e enclosure.

Explosion protection

Ex protection type

Ex II 2G EEx de ia/ib [ia/ib] IIA, IIB, IIC
T6...T4

Certification

PTB 03 ATEX 1024

Ambient temperature

-20 °C to +40 °C

Technical data

Protection class according to IEC 60529

IP 54

Nominal voltage

up to 750 V

Nominal current

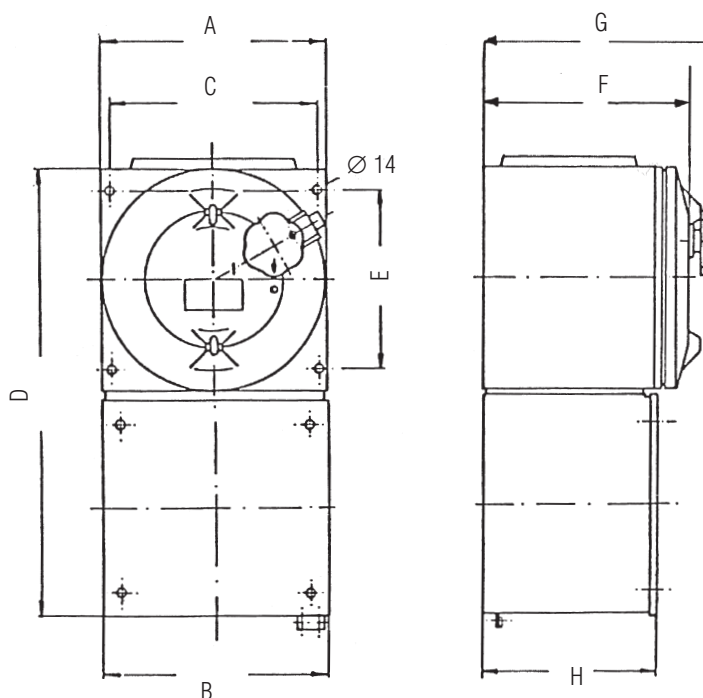
max. 400 A

Colour

light grey, RAL 7032



Dimensions



Selection chart (Dimensions in mm)

A	B	C	D	E	F	G	H	➔ Order no.
210	215	187	450	145	175	203	126	07-4310-04.1
210	215	187	450	145	175	-	126	07-4310-05.1
320	325	295	634	255	175	203	126	07-4320-04.1
320	325	295	634	255	175	-	126	07-4320-05.1
320	325	295	634	255	300	329	252	07-4340-04.1
320	325	295	634	255	300	-	252	07-4340-05.1
430	435	405	744	365	300	329	252	07-4350-04.1
430	435	405	744	365	300	-	252	07-4350-05.1
430	435	405	964	365	300	329	252	07-4370-04.1
430	435	405	964	365	300	-	252	07-4370-05.1
650	655	600	1050	505	480	510	252	07-4380-04.1
650	655	600	1050	505	480	-	252	07-4380-05.1



EEx d control units

Explosion protection

Explosive atmospheres can occur wherever flammable gases, liquids or materials are processed, transported and stored. It is therefore necessary to take appropriate measures to prevent possible explosions. BARTEC protects people and the environment by the safety of components, systems and plant safe.

When the 94/9/EC (ATEX 95) guideline comes into force on 01/07/2003, explosion protected operating equipment must be properly installed in accordance with EN 60079-14. Our safety standards comply to the national directives for commissioning, maintenance and repair of electrical devices; construction and manufacturing according to the CENELEC standards EN 50014 to 50020/50028/50039.

Three Ex groups of flammable gases can be introduced following safety gaps and/or minimum ignition currents determined in experiments.

- IIA** e. g. ethane, methane, petrol
- IIB** e. g. ethylene, dimethylether, town gas
- IIC** e. g. hydrogen, acetylene, sulphur carbonate

Further selection criteria is the categorizing into temperature classes. The device temperature is added to a supposed ambient temperature of +40 °C and divided in the following six temperature classes:

- T1** +450 °C
- T2** +300 °C
- T3** +200 °C
- T4** +135 °C
- T5** +100 °C
- T6** +85 °C

Explosive areas have three different zones:

Zone 0 (Category 1G-devices necessary)

A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is present continuously, for long periods or frequently.

Zone 1 (Category 1G- or 2G-devices necessary)

A place in which an explosive atmosphere consisting of a mixture with air or flammable substances in the form of gas, vapour or mist is likely to occur in normal operation occasionally.

Zone 2 (Category 1G-, 2G- or 3G-devices necessary)

A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

Electrical control panels contain switches, relays, pushbutton etc. which may produce a spark when they switch. In order to keep such sparks or other hot spots from causing an explosion, the components are housed within flameproof enclosures.



Features

- Standard components
- cost-effective; also applies to spare parts
- easy-to-service
- expandible

Description

The BARTEC EEx d control panels are constructed according to protection type EEx d, flameproof encapsulation. Standard components such as switches, contactors and relays are mounted in an explosionproof enclosure constructed in such a way as to keep internal explosions from igniting the surrounding atmosphere.

EEx d control panels are usually custom-built in close cooperation with the customer himself for his special application.

Version

Flameproof control panels are available either with direct cable-entries through EEx d cable-glands or with indirect cable-entries through a junction box with protection type increased safety EEx e. The electrical wiring between EEx d and EEx e enclosure will be done through EEx d linebushings.

Fields of application

- Zone 1 and zone 2 (Categorie 2G)
- Gas groups IIA and IIB
- Temperature class T4, T5 or T6

Explosion protection

Ex protection type

Ex II 2G EEx d IIB T4, T5 or T6

Certification

CESI 02 ATEX 097

Technical data

Nominal voltage

AC 690 V

Protection class

IP 54/IP 65

Basic material

Aluminium alloy, low copper contents (standard)
Stainless steel 1.4401 (V4A) (option)
Stainless steel 1.4404 (A44A) (on request)

Selection chart

Name	Dimensions (mm) outside			Dimensions (mm) inside			empty weight kg
	width	height	depth	width	height	depth	
EJB 1	196	296	199	140	240	140	8.5
EJB 2	216	416	207	160	360	140	14.2
EJB 3	276	355	268	220	300	200	17.8
EJB 3B	276	356	208	220	300	140	16.4
EJB 4	332	432	290	260	360	215	24.1
EJB 4B	332	432	225	260	360	145	23.2
EJB 45	380	560	295	305	490	210	35.0
EJB 45B	380	560	245	305	490	160	27.0
EJB 5	432	632	343	360	550	250	56.5
EJB 5B	432	632	273	360	560	185	49.9
EJB 503	432	632	397	360	560	330	61.6
EJB 6	640	860	470	540	760	315	170.0
EJB 6B	640	860	370	540	760	215	150.0

It is possible to combine the various enclosures.



*Small control, regulating
and display devices*

Description

BARTEC offers two type series of explosion proof encapsulated enclosures for using electric components in hazardous (potentially explosive areas).

Within the scope of the EC model test certification, these can be fitted with industrial standard units, such as e.g. small-type motors, printed circuit boards and cameras.

The mounted parts are evaluated by BARTEC, fitted into a suitable housing and provided as a complete device with the corresponding ATEX marking.

This housing series offers optimum solution approaches for control, regulating and display devices in Zone 1 and zone 21 hazardous areas.

➔ Explosion protection

Ex protection type

Ex II 2G/D EEx de [ia/ib] IIC T6, T5, T4
IP 66 T 80 °C resp. T 95 °C

EC model test certifications

Type 07-61.1-....
PTB 03 ATEX 1026

Type 07-61.2-....
PTB 03 ATEX 1051

➔ Technical data

Protection class

max. IP 66/IEC 60529

Enclosure material

Metall

Surface

bare, electro-plated or varnished










➔ **Order no.**
07-61.1-...
07-61.2-...



Description

The small control, regulating- and display devices are assembled out of the following modules to suit the required function. The size of the housing depends on the components, power dissipation and the required housing volume.

Selection chart

Front flansch	Enclosure	Rear flange										
<p>closed</p> <p>e. g. for vibration measuring instrument or printed circuit board installation</p> 	<table><tr><td>ø 30 mm max.</td><td>25 cm³ volume</td></tr><tr><td>ø 45 mm max.</td><td>100 cm³ volume</td></tr><tr><td>ø 60 mm max.</td><td>200 cm³ volume</td></tr><tr><td>ø 90 mm max.</td><td>1000 cm³ volume</td></tr><tr><td>ø 120 mm max.</td><td>2750 cm³ volume</td></tr></table>	ø 30 mm max.	25 cm³ volume	ø 45 mm max.	100 cm³ volume	ø 60 mm max.	200 cm³ volume	ø 90 mm max.	1000 cm³ volume	ø 120 mm max.	2750 cm³ volume	<p>with multicore tube encapsulated directly in the housing</p> <p>only up to a maximum 60 mm housing diameter</p> 
ø 30 mm max.	25 cm³ volume											
ø 45 mm max.	100 cm³ volume											
ø 60 mm max.	200 cm³ volume											
ø 90 mm max.	1000 cm³ volume											
ø 120 mm max.	2750 cm³ volume											
<p>with shaft bushing</p> <p>e. g. for small motors, rotary encoders or switches</p> 		<p>with cable entry</p> 										
<p>with inspection glass</p> <p>e. g. for cameras, optoelectronic units or flame sensors</p> <p>A-meter</p> <p>V-meter</p> 		<p>with EEx d screwed cable gland</p> <p>not suitable for gas subgroup IIC when sparking parts have been fitted.</p> 										
		<p>Flange with EEx e connection housing</p> 										



Potentiometer

Features

- High IP-protection class
- Small design
- Simple installation

Description

These up to 4 W potentiometers show that EEx potentiometers can be small and compact.

The external dimensions are approximately the same as those of standard industrial potentiometer enclosures. Central fixing in a single hole and the standard size of shaft have been included. From the variety of resistors on the market we have chosen cemented wire-wound resistors and carbon film resistors and developed a standard-program range. The metal EEx d enclosures are tailored to the dimensions of the resistors and feature a standard 30 mm diameter. The potentiometers have been designed so that the stated nominal capacities can be fully exploited at temperature class T6 or T5 and be deployed in zones 1 and 2.

They can be fastened and secured against twisting in a number of ways. Two nuts are included in each consignment. At an extra charge BARTEC provides either threaded holes in the front panel of the enclosure or an antirotation pin. The length of the encapsulated numbered cores can be specified by the customer. The potentiometers are Ex-certified by means of a PTB component certificate.

If potentiometers have connecting wires, these must be laid with protection. We have developed terminals and enclosures especially for proper connection of the ends of the wires in explosive atmospheres. The most important data, such as resistance values, power ratings and dimensions can be found in the table on the right. We also supply accessories, such as rotary and pointer knobs, scales and slip couplings.

Explosion protection

Ex protection type

- II 2G EEx d IIC
- I M2 EEx d I

Certification

PTB 03 ATEX 1025 U

Temperature class

T6 to T4

Ambient temperature

-55 °C to +40 °C/+60 °C/+80 °C

Technical data

Protection class

min. IP 54/IEC 60529

Enclosure

nickel-plated brass (CuZn)

Tightening torque (for nuts)

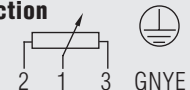
200 Ncm

Resistance characteristic

linear

Electrical connection

cores
4GAF - 0.75



■ Cemented wire-wound resistors:

Resistance values/power ratings

see selection chart

Resistance tolerance

± 5 %

Linearity tolerance

max. 3 % of final value

Insulation resistance

≥ 100 MΩ

Rotation

electr./mech. 250°/270°

End stop strength

30 Ncm

Weight with cores (0.5 m)

180 g

■ Carbon-film resistors on ceramic:

Resistance values/power ratings

see selection chart

Insulation resistance

≥ 100 MΩ

Rotation

electr./mech. 270°

End stop strength

100 Ncm

Weight with cores (0.5 m)

200 g

■ Precision wire-wound resistors:

Resistance values/power ratings

see selection chart

Insulation resistance

≥ 1000 MΩ

Resistance tolerance

± 5 %

Linearity tolerance

to 500 Ω ± 1 %
> 500 Ω ± 0.5 %

Rotation

electr./mech. 320°

End stop strength

100 Ncm

Weight with cores (0.5 m)

170 g

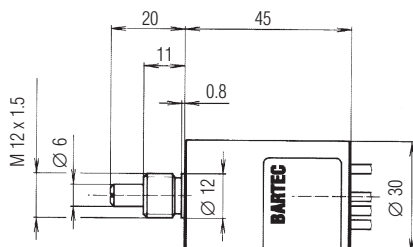


Potentiometer max. 4 W with individual leads

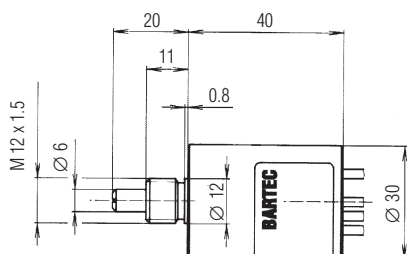
BARTEC

Dimensions in mm

Cemented wire-wound resistors for high power ratings



Carbon-film resistors
Precision wire-wound resistors



Selection chart

**Resistor type/
standard resistance values**
(stock items printed bold)

**Temperature
class/
power rating**

**Complete
order no.**
(indicate resistance values
in plain text)

Cemented wire-wound resistors higher power ratings

10 Ω	68 Ω	470 Ω	3.3 k Ω
12 Ω	82 Ω	560 Ω	3.9 k Ω
15 Ω	100 Ω	680 Ω	4.7 k Ω
18 Ω	120 Ω	820 Ω	5.6 k Ω
22 Ω	150 Ω	1 k Ω	6.8 k Ω
27 Ω	180 Ω	1.2 k Ω	8.2 k Ω
33 Ω	220 Ω	1.5 k Ω	10 k Ω
39 Ω	270 Ω	1.8 k Ω	
47 Ω	330 Ω	2.2 k Ω	
56 Ω	390 Ω	2.7 k Ω	

T6/2.5 W
resp.
T4/4 W

07-6612- **111**
resp.
07-6613- **111**

Carbon film resistors

100 Ω	1 k Ω	10 k Ω	100 k Ω
220 Ω	2.2 k Ω	22 k Ω	220 k Ω
470 Ω	4.7 k Ω	47 k Ω	470 k Ω
			1 M Ω

T6/2 W

07-6612- **113**

Precision wire-wound resistors

10 Ω	100 Ω	1 k Ω	10 k Ω
20 Ω	200 Ω	2 k Ω	20 k Ω
50 Ω	500 Ω	5 k Ω	

T6/1.2 W

07-6612- **112**

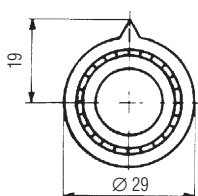
Lead length:
5 = standard 500 mm
0 = length in plain text

Special versions - please indicate particulars in plain text

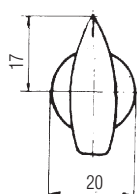
- Anti-rotation pin on front of enclosure
- Side entry of leads
- Threaded holes on front of enclosure
- Other resistance values

Accessories/Order no.

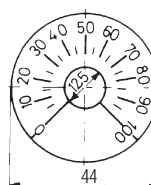
Rotary knob shaft Ø 6 mm
Order no. 03-5401-0001



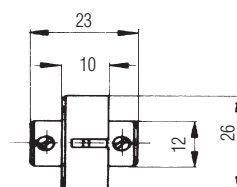
Pointer knob shaft Ø 6 mm
Order no. 03-5401-0002



Scale 0 - 100
Order no. 05-0144-0112 (270°)
Order no. 05-0144-0127 (320°)



Slip clutch adjustable
to 50 Ncm, shaft Ø 6 mm
Order no. 03-5600-0001





Potentiometer max. 8 W with cable tail

BARTEC



Potentiometer

Features

- High IP-protection class
- Simple installation
- No further approvals required

Linearity tolerance

max. 3 % of final value

Insulation resistance

≥ 100 MΩ

Rotation

electr./mech. 250°/270°

End stop strength

30 Ncm

Weight with cable (1 m)

2.5 W	6 W	8 W
250 g	320 g	550 g

■ Carbon-film resistors on ceramic

Resistance values/power ratings

see selection chart

Insulation resistance

≥ 100 MΩ

Rotation

electr./mech. 270°

End stop strength

100 Ncm

Weight with cable (1 m)

240 g

■ Precision wire-wound resistors

Resistance values/power ratings

see selection chart

Resistance tolerance

1 turn ± 5 % / 10 turns > 50 Ω ± 3 %

Linearity tolerance

1 turn to 500 Ω ± 1 %
> 500 Ω ± 0.5 %

10 turns potentiometer ± 0.25 %

Insulation resistance

min. 1 000 MΩ

Rotation

electr./mech. 1 turn 320° ± 2°
10 turns 10 x 360° + 10°

Weight with cable (1 m)

1 turn 210 g/10 turns 300 g

End stop strength

1 turn 100 Ncm/10 turns 6 Ncm

Description

This standard range of up to 8 W potentiometers with wire-wound resistors show that EEx potentiometers can be small and compact.

The external dimensions are approximately the same as those of standard industrial potentiometer enclosures. Central fixing in a single hole and the standard size of shaft have been included. From the variety of resistors on the market we have chosen the most commonly used types and developed a standard program range.

The metal EEx d enclosures are tailored to the dimensions of the resistors and feature a standard 30 mm diameter. The potentiometers have been designed so that the stated nominal capacities can be fully exploited at temperature class T6 or T5 and be deployed in zones 1 and 2.

They can be fixed and protected against turning in different ways. Two nuts are included in each consignment. At an extra charge BARTEC provides either threaded holes in the front panel of the enclosure or an antirotation pin.

For the correct connection of the cable ends we have developed special Ex terminals and enclosures. The most important data such as resistance values, power ratings and dimensions can be found in the table on the right. We also supply accessories such as rotary and pointer knobs, scales and slip clutches.

In addition to the standard models all other versions such as tandem potentiometers, potentiometers with microswitches, non-standard shafts or larger resistor diameters can be encapsulated in enclosures of up to 120 mm diameter.

➤ Explosion protection

Ex protection type

Ex II 2G EEx d IIC T6 resp. T5

Certifications

PTB 03 ATEX 1026

Ambient temperature

-20 °C to +70 °C

➤ Technical data

Protection class

min. IP 54/IEC 60529

Enclosure

metal

Tightening torque (for nuts)

200 Ncm

Resistance characteristic

linear

Electrical connection

cable

H05VV-F4G 0.75



■ Cemented wire-wound resistors

Resistance values/power ratings

See selection chart

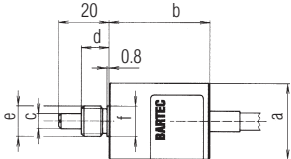

Resistance tolerance

± 5 %



Potentiometer max. 8 W with cable tail

BARTEC

Dimensions in mm						Selection chart					
						Resistor type/ standard resistance values (stock items printed bold)		Temperature class/ power rating	➔ Complete order no. (indicate resistance values in plain text)		
a	b	c	d	e	f	Cemented wire-wound resistors higher power ratings					
Ø 30	55	Ø 6	11	M 12 x 1.5	Ø 12	10 Ω	180 Ω	3.3 k Ω	to 10 k Ω	T6/2.5 W resp. T5/3 W	07-6622- <input type="text"/> 111 resp. 07-6623- <input type="text"/> 111
					12 Ω	220 Ω	3.9 k Ω				
					15 Ω	270 Ω	4.7 k Ω				
					18 Ω	330 Ω	5.6 k Ω				
					22 Ω	390 Ω	6.8 k Ω				
Ø 45	90	Ø 6	11	M 12 x 1.5	Ø 12	27 Ω	470 Ω	8.2 k Ω	to 20 k Ω	T6/5 W resp. T5/6 W	07-6624- <input type="text"/> 111 resp. 07-6625- <input type="text"/> 111
					33 Ω	560 Ω	10 k Ω				
					39 Ω	680 Ω	12 k Ω				
					47 Ω	820 Ω	15 k Ω				
					56 Ω	1 k Ω	18 k Ω				
Ø 60	87	Ø 6	11	M 12 x 1.5	Ø 12	68 Ω	1.2 k Ω	20 k Ω	to 30 k Ω	T6/7 W resp. T5/8 W	07-6626- <input type="text"/> 111 resp. 07-6627- <input type="text"/> 111
					82 Ω	1.5 k Ω	22 k Ω				
					100 Ω	1.8 k Ω	27 k Ω				
					120 Ω	2.2 k Ω	30 k Ω				
					150 Ω	2.7 k Ω					
Ø 30	45	Ø 6	11	M 12 x 1.5	Ø 12	Carbon-film resistors		100 k Ω	T6/2 W	07-6622- <input type="text"/> 113	
					100 Ω	1k Ω	10 k Ω	220 k Ω			
					220 Ω	2.2 k Ω	22 k Ω	470 k Ω			
					470 Ω	4.7 k Ω	47 k Ω	1 M Ω			
						Precision wire-wound resistors			T6/1.2 W	07-6622- <input type="text"/> 112	
					10 Ω	100 Ω	1 k Ω	10 k Ω			
					20 Ω	200 Ω	2 k Ω	20 k Ω			
					50 Ω	500 Ω	5 k Ω				
Ø 38	50	Ø 6.35	8	3/8-32	Ø 10.3	10 turns potentiometer*			T6/2 W	07-6624- <input type="text"/> 102 Lead length:  5 = standard 500 mm 0 = length in plain text	
					20 Ω	500 Ω	10 k Ω				
					50 Ω	1 k Ω	20 k Ω				
					100 Ω	2 k Ω	50 k Ω				
						200 Ω	5 k Ω	100 k Ω			
						Special versions, Please indicate particulars in plain text					
						■ Anti-rotation pin on front of enclosure ■ Threaded holes on front of enclosure ■ Side entry of cable ■ Other resistance values					

*Max. wall thickness for installing a switch panel = 3 mm

➔ Accessories/Order no.

Rotary knob shaft Ø 6 mm Order no. 03-5401-0001	Pointer knob shaft Ø 6 mm Order no. 03-5401-0002	scale 0 - 100 Order no. 05-0144-0112 (270 °) 05-0144-0127 (320 °)	10 turn drive* shaft Ø 6.35 mm Order no. 03-5425-0001	Slip clutch, adjustable to 50 Ncm, shaft Ø 6 mm Order no. 03-5600-0001



Flashing lamp

Features

- 15 joule flash energy
- Long life of the flash tube
- Maintenance-free, since there are no wearing parts
- Compact design
- Very sturdy
- Low weight
- Low power demand thanks to its high efficiency

Description

Plant and machinery are fitted with visual alarms to give timely warning of dangerous situations and to enable machinery to be shut down before damage occurs.

BARTEC flashing lights for hazardous areas have a flash energy of 15 joule. The flash intensity whether viewed directly or indirectly is an ideal means of attracting attention.

BARTEC flashing lamps

- inform
 - warn
 - give alarm
- in industry, plant and machinery and off-shore installations.

Explosion protection

Ex protection type

II 2G EEx d IIC T6 or EEx d IIB T6
or EEx de IIC T6

Certification

PTB 02 ATEX 1001

Technical data

Protection class

IP 65/IEC 60529
mounting position: upright,
cover on top

Enclosure material

Enclosure: weatherproof
aluminium
Cover: Makrolon
(polycarbonate)

Colour

Enclosure: yellow
(similar to RAL 1018)
Base: black
(similar to RAL 9004)

EEx de connection

connection terminals max. 1.5 mm²
1 EEx e gland Pg 13.5/M20
1 EEx e blanking plug Pg 13.5/M20

EEx d connection

with 3 m supply cable
l = 3 m

EEx d connection

with EEx d cable gland
M 20 x 1.5

External earth connection

max. 4 mm²

Weight

EEx de version 2.2 kg
EEx d version 1.9 kg

Ambient temperature

-20 °C to +40 °C 10/15 joule

Storage temperature

-40 °C to +70 °C

Relative humidity

90 %

Luminous data

Alarm area

Ø 7.5 m

Warning area

Ø 30 m

Flash energy

15 joule

Flash frequency

1 Hz

Service life of light tube

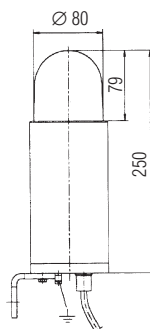
70 % light emission
after 8 million flashes

Continuance operation

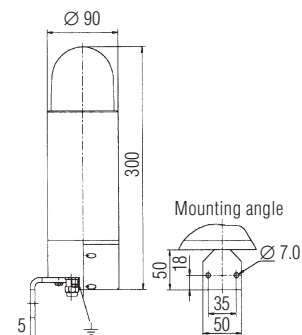
100 %



Dimensions with EEx d connection



with EEx de terminals



Nominal voltage		Electrical data	
AC 240 V	50 to 60 Hz	Operating voltage range	216 V to 264 V
		Rated current input	0.22 A
		Nominal power	58 VA
AC 230 V	50 to 60 Hz	Operating voltage range	207 V to 253 V
		Rated current input	0.24 A
		Nominal power	61 VA
AC 110 V	50 to 60 Hz	Operating voltage range	99 V to 121 V
		Rated current input	0.40 A
		Nominal power	48 VA
AC 42 V	50 to 60 Hz	Operating voltage range	38 V to 46 V
		Rated current input	0.40 A
		Nominal power	23 VA
DC 60 V		Operating voltage range	50 V to 72 V
		Rated current input	0.35 A
		Nominal power	23 VA
DC 48 V		Operating voltage range	40 V to 60 V
		Rated current input	0.40 A
		Nominal power	22 VA
DC 24 V		Operating voltage range	18 V to 30 V
		Rated current input	0.75 A
		Nominal power	20 VA

Selection chart

Type	Code no.	Nominal voltage	Code no.	Cover colour	Code no.
EEx de	3	AC 240 V	0	yellow-orange	3
		AC 230 V	1	red	4
		AC 110 V	2	white	2
EEx d/LE	1	AC 42 V	3	green	5
		DC 60 V	6	blue	6
EEx d/KVS	2	DC 48 V	7	clear	6
		DC 24 V	8		1

➔ **Complete order no.**

07-4834-

Please enter code number.



EEx de Flashing lamp

Features

- 5 J flash energy
- long life of the light tube
- maintenance-free
- compact design
- very sturdy
- low power demand due to high lamp efficiency
- easy installation

Description

Plant and machinery are fitted with visual alarms to give timely warning of dangerous situations and to enable machinery to be shut down before damage occurs.

BARTEC flashing lights for hazardous areas have a flash energy of 5 joule. The flash intensity, whether viewed directly or indirectly, gives an ideal means of attracting attention. BARTEC's flashing lamps provide information, warnings and alarms on machinery and plant in explosion-endangered areas in Zone 1 and Zone 2. They can likewise be deployed in offshore applications and in Zone 22.

Function

The flashing lamp is made of an aluminium EExd enclosure with a dome made of Borosilikal glass. The electrical connection to be done to EEx e terminals via a M20 x 1.5 plastic cable gland or metal cable gland. External earth available.

➔ Explosion protection

Ex protection type

Ex II 2G EEx de IIC T6

Certification

PTB 00 ATEX 1013

➔ Technical data

Protection class

IP 65 according to IEC 60529

Enclosure material

Aluminium, powder coated with hardened glass dome

■ Electrical data

Rated voltage

AC 230 V $\pm 10\%$
DC 24 V

Flash energy

up to 5 Ws

Flash frequency

0.5 Hz up to 1.0 Hz

ON time

continous rating (100 % ED)

Activation

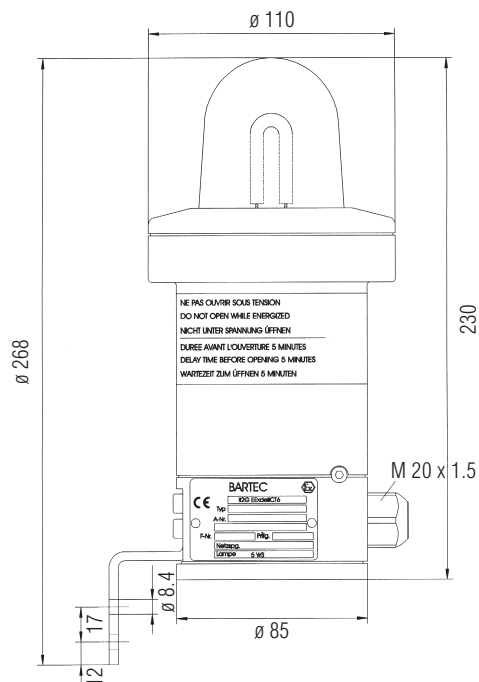
by connecting with the rated voltage

Ambient temperature range

-20 °C to +40 °C



Dimensions



Selection chart

Description	Code no.
Flashing lamp AC 230 V, 5 Ws, < 33 W, dome colour yellow	13
Flashing lamp AC 230 V, 5 Ws, < 33 W, dome colour red	14
Flashing lamp DC 24 V, 5 Ws, < 15 W, dome colour yellow	83
Flashing lamp DC 24 V, 5 Ws, < 15 W, dome colour red	84



Complete order no. 07-4838-33



Please enter code number.