

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx PTB 05.0028U**

Issue No.: **0**

Status: **Current**

Date of Issue: **2005-11-24**

Page 1 of 4

Applicant: **Killark, Div. of Hubbell Inc. (Delaware)**
3940 Dr. Martin Luther King Drive
St. Louis, MO 63113
United States of America

Electrical Apparatus: **Empty Enclosure type *GR** *.***L*** ****
Optional accessory:

Type of Protection: **Flameproof Enclosure**

Marking: **Ex d IIC or Ex d IIB + H2**
Ex tD A21 IP66

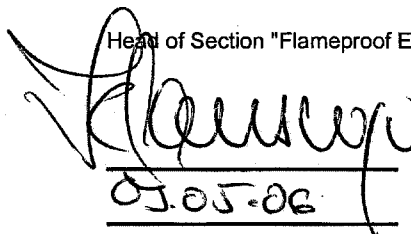
Approved for issue on behalf of the IECEx
Certification Body:

Dr.-Ing. Uwe Klausmeyer

Position:

Head of Section "Flameproof Enclosure"

Signature:
(for printed version)



05.05.06

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**Physikalisch-Technische
Bundesanstalt (PTB)**
Bundesallee 100
38116 Braunschweig
Germany





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Manufacturer: **Killark, Div. of Hubbell Inc. (Delaware)**
3940 Dr. Martin Luther King Drive
St. Louis, MO 63113
United States of America

Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacture's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2000 Edition: 3.1	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2001 Edition: 4	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosures 'd'
IEC 61241-0 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61241-1 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

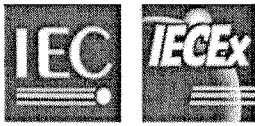
*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

IECEX ATR:
DE/PTB/05-031

File Reference:
B021071



IECEX Certificate of Conformity

Certificate No.: IECEx PTB 05.0028U

Date of Issue: 2005-11-24

Issue No.: 0

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description of equipment

The empty enclosure type *GR** *-***L *** ** is a series of cast aluminum enclosures with threaded covers that are either flat blank, contain a sight glass or domed. Connection is carried out by direct cable entry or through conduit entry. The enclosure can be provided with different operators (see list in the annex). The marking of the apparatus is: Ex d IIC

The enclosure can also be provided with pilot lights and operators (see list in the annex). In this case the gasgroup changes to IIB + H₂:

Technical data

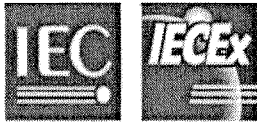
Shock protection, protection against solid bodies and protection against ingress of water	IP 66 according to EN 60529
Ambient temperature	-20 °C to +40 °C

Type designation

*	GR**	*	***L ***	***
1	2	3	4	5

Key of type designation: see annex

CONDITIONS OF CERTIFICATION: NO



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Certificate No.:

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Additional information:

Type designation and G Series Operators

Empty Enclosure type *GR** *-***L*** **

Killark, Div. of Hubbell Inc. (Delaware)

Type designation

*	GR**	*	-***L***	***
1	2	3	4	5

Key of type designation

1: Designation of the cover (height)	
Blank	Flat blank cover
2	2 inch height (50,8 mm)
3	3 inch height (76,2 mm)
4	4 inch height (101,6 mm)
5	5 inch height (127 mm)
8	8 inch height (203,2 mm)

2: Code number for the dimension of the enclosure / opening	
GRB	117,5 x 117,5 x 114,3 / 101,6 mm
GRE	168,3 x 139,7 x 136,5 / 114,3 mm
GRK	250,8 x 200,0 x 170,7 / 187,3 mm
GRM	174,6 x 174,6 x 161,9 / 136,5 mm
GRL	266,7 x 225,4 x 190,5 / 203,2 mm
GRH	304,8 x 279,4 x 209,6 / 247,5 mm
GRHA	304,8 x 279,4 x 419,1 / 247,5 mm
GRHC	330,2 x 295,3 x 257,2 / 247,5 mm

3. Code number for mounting plate	
empty	No mounting pan
P	Mounting pan on the bottom of the enclosure

4. Code number for the window	
275L	Diameter 69,85 mm
300L	Diameter 76,20 mm
375L	Diameter 95,25 mm
537L	Diameter 136,40 mm
600L	Diameter 152,40 mm
775L	Diameter 196,85 mm
375L52	Diameter 69,85 mm, with mounting pan
537L52A	Diameter 136,40 mm, with mounting pan
600L52B	Diameter 152,40 mm, with mounting pan
600L52C	Diameter 152,40 mm, with mounting pan
775L52B	Diameter 196,85 mm, with mounting pan

5. Code number for the suffix	
doesn't influences the explosion protection	
SU6	Mounting lugs removed
SU8	Pan mounting studs less pan

SU9	Special finish
SU14	Fungus proofing
CEN, CN	Modified for Cenelec approval
MOD	Modified enclosure to specified customer requirements

Killark G Series Operators

G Series Operators Type designation	Description The * indicates additional numbers and letters which designates the device color and contact block (circuit) arrangement.
GO1 **** N34	Single pushbutton, maintained contact
GOM1-****	Single pushbutton, maintained contact, Mushroom head, Pull type
GO2-***** N34	Double pushbutton, momentary contact
GOR11-**** N34	Double pushbutton, maintained contact
GO5-**** N34	Selector switch, maintained contact, 2, 3, or 4 position
GO6-** N34	Selector switch, spring return, two position, return to left
GO7-** N34	Selector switch, three position, spring return to center from right or left
GO14-** N34	Selector switch, three position spring return to center from right, maintained in left
GO15-** N34	Selector switch, three position, spring return to center from left, maintained in right
GO8-***** N34	Key selector switch, maintained contact, 2 or 3 position
GO36-**** N34	Key selector switch, 2 position, spring return to left
GOL1**	Single pushbutton, momentary contact, extended length
GOL2****	Double pushbutton, maintained contact, extended length
GOL5***	Selector switch, maintained contact, 2, 3, or 4 position, extended length
GOL6*	Selector switch, 2 position, spring return to left, extended length
GOL7*	Selector switch, 3 position, spring return to center from right or left, extended length
GOL14*	Selector switch, 3 position, spring return to center from right, maintain in left, extended length
GOL15*	Selector switch, 3 position, spring return, to center from left, maintain in right, extended length
GOL8*****	Key selector switch, maintained contact, 2 or 3 position, extended length
GOL36*****	Key selector switch, 2 position, spring return to left, extended length
GO37-**** N34	Key selector switch, 3 position, spring return to center, from right or left, extended length
GO38-**** N3	Key selector switch, 3 position, spring return to center, from right, maintained in left, extended length
GO39-**** N34	Key selector switch, 3 position, spring return to center, from left, maintained in right, extended length
GO10-*** N34	Snap switch operator, Single pole, single throw, or single pole double throw
GO113 N34	Potentiometer and Rheostat operator, single turn
GO114 N34	Potentiometer and Rheostat operator, 15 turn
GO-RST	Reset Operator, plunger type with 152.4 mm adjustable extension
GO50	Rotary or motor shaft operator, NPSM thread, 12.7 mm diameter

	shaft, type male to male shaft connection
GO-SP**	Factory Configured for mounting special device
GOL37****	Key selector switch, 3 position, spring return to center, from right or left, extended length
GOL38****	Key selector switch, 3 position, spring return to center, from right, maintained in left, extended length
GOL39****	Key selector switch, 3 position, spring return to center, from left, maintained in right, extended length
GOL113	Potentiometer and Rheostat operator, single turn, extended length
GOL114	Potentiometer and Rheostat operator, 15 turn, extended length
GOLRST	Reset Operator, plunger type with 152.4 mm adjustable extension, extended length
GO51	Rotary or motor shaft operator, 12.7 mm diameter shaft, type male to male shaft connection
GOLSP**	Factory Configured for mounting special device, extended length

G Series Pilot Lights, Type designation	Description The * indicates additional numbers and letters which designates the device color and contact block (circuit) arrangement.
GOB3-**** N34CN	Pilot light, 120 V max. 3 Watt lamp
GOL3**CN ¹	Pilot light
GOB4-**** N34CN ¹	Push button pilot light, 120 V max. 3 Watt lamp
GOL4**CN ¹	Push button pilot light



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx PTB 05.0029**

Issue No.: **0**

Status: **Current**

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Page **1** of **4**

Applicant: **Killark, Div. of Hubbell Inc (Delaware)**
3940 Dr. Martin Luther King Drive
St. Louis, MO 63113
United States Of America

Electrical Apparatus: **Controller Type *GR** *-***L *** ****
Optional accessory:

Type of Protection: **Flameproof Enclosure**

Marking: **Ex d IIC or Ex d IIB + H2 T6 or T5**
Ex tD A21 IP66 T 80 °C or T 95 °C

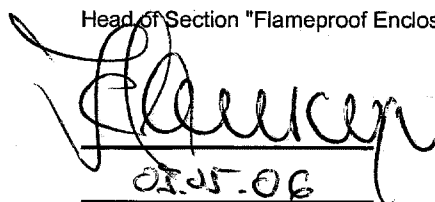
Approved for issue on behalf of the IECEx
Certification Body:

Dr.-Ing. Klausmeyer

Position:

Head of Section "Flameproof Enclosure"

Signature:
(for printed version)


05.05.06

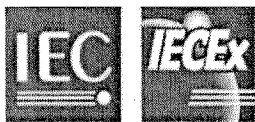
Date:

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Bundesallee 100
38116 Braunschweig
Germany





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Manufacturer: **Killark, Div. of Hubbell Inc. (Delaware)**
3940 Dr. Martin Luther King Drive
St. Louis, MO 63113
United States of America

Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacture's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2000 Edition: 3.1	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2001 Edition: 4	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosures 'd'
IEC 61241-0 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61241-1 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

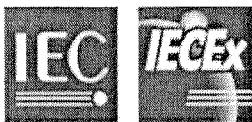
*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

IECEX ATR:
DE/PTB/05-031

File Reference:
B021072



IECEX Certificate of Conformity

Certificate No.: IECEx PTB 05.0029

Date of Issue: 2005-11-24

Issue No.: 0

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description of equipment

The Controller type *GR** *_***L *** ** is a series of cast aluminum enclosures with threaded covers that are either flat blank, contain a sight glass or domed. It contains different electrical apparatus.
The empty enclosure is approved under the number IECEx PTB 05.0028U

Connection is carried out by direct cable entry or through conduit entry. The controller can be provided with different operators (see list in the certificate of the empty enclosure).

The marking of the apparatus is: Ex d IIC.

The controller can also be provided with pilot lights and operators (see list in the certificate of the empty enclosure). In this case the gasgroup changes to IIB + H₂:

Technical data

Shock protection, protection against solid bodies and protection against ingress of water	IP 66 according to EN 60529
Ambient temperature	-20 °C to +40 °C
Rated voltage	max. 690 V
Conductor size (AWG)	max 120 mm ² (4/0)

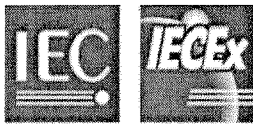
Rated values are maximum values, the actual electrical values are determined by mounted electrical apparatus. Within these limiting values complying with the appropriate standards the manufacturer specifies the final limiting values dependent on power supply specifications, operating mode, utilization category, etc.

Type designation

*	GR**	*	_***L***	***
1	2	3	4	5

Maximum Power Loss, Key of Type designation and List of Operators see Annex

CONDITIONS OF CERTIFICATION: NO



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Additional information:

Maximum Power Loss, Type designation and G Series Operators**Controller type *GR** *-***L *** ******Killark, Div. of Hubbell Inc. (Delaware)**

Maximum power loss for use in temperature class		
Enclosure Type	T6	T5
GRB	30 W	40 W
2GRB	35 W	55 W
4GRB	45 W	65 W
GRE	55 W	85 W
GRM	75 W	115 W
3GRM	90 W	130 W
5GRM	95 W	140 W
GRK	100 W	145 W
4GRK	145 W	205 W
GRL	120 W	170 W
GRH	160 W	225 W
4GRH	190 W	265 W
8GRH	230 W	330 W
GRHC	180 W	255 W
4GRHC	220 W	310 W
8GRHC	245 W	355 W
GRHA	215 W	300 W
4GRHA	240 W	345 W
8GRHA	270 W	395 W

Type designation

*	GR**	*	-***L ***	***
1	2	3	4	5

Key of type designation

1: Designation of the cover (height)	
Blank	Flat blank cover
2	2 inch height (50,8 mm)
3	3 inch height (76,2 mm)
4	4 inch height (101,6 mm)
5	5 inch height (127 mm)

8	8 inch height (203,2 mm)
---	--------------------------

2: Code number for the dimension of the enclosure / opening	
GRB	117,5 x 117,5 x 114,3 / 101,6 mm
GRE	168,3 x 139,7 x 136,5 / 114,3 mm
GRK	250,8 x 200,0 x 170,7 / 187,3 mm
GRM	174,6 x 174,6 x 161,9 / 136,5 mm
GRL	266,7 x 225,4 x 190,5 / 203,2 mm
GRH	304,8 x 279,4 x 209,6 / 247,5 mm
GRHA	304,8 x 279,4 x 419,1 / 247,5 mm
GRHC	330,2 x 295,3 x 257,2 / 247,5 mm

3. Code number for mounting plate	
empty	No mounting pan
P	Mounting pan on the bottom of the enclosure

4. Code number for the window	
275L	Diameter 69,85 mm
300L	Diameter 76,20 mm
375L	Diameter 95,25 mm
537L	Diameter 136,40 mm
600L	Diameter 152,40 mm
775L	Diameter 196,85 mm
375L52	Diameter 69,85 mm, with mounting pan
537L52A	Diameter 136,40 mm, with mounting pan
600L52B	Diameter 152,40 mm, with mounting pan
600L52C	Diameter 152,40 mm, with mounting pan
775L52B	Diameter 196,85 mm, with mounting pan

5. Code number for the suffix	
doesn't influences the explosion protection	
SU6	Mounting lugs removed
SU8	Pan mounting studs less pan
SU9	Special finish
SU14	Fungus proofing
CEN, CN	Modified for Cenelec approval
MOD	Modified enclosure to specified customer requirements

Killark G Series Operators

G Series Operators Type designation	Description The * indicates additional numbers and letters which designates the device color and contact block (circuit) arrangement.
GO1 **** N34	Single pushbutton, maintained contact
GOM1-****	Single pushbutton, maintained contact, Mushroom head, Pull type
GO2-***** N34	Double pushbutton, momentary contact
GOR11-**** N34	Double pushbutton, maintained contact
GO5-**** N34	Selector switch, maintained contact, 2, 3, or 4 position
GO6-** N34	Selector switch, spring return, two position, return to left
GO7-** N34	Selector switch, three position, spring return to center from right or left
GO14-** N34	Selector switch, three position spring return to center from right, maintained in left
GO15-** N34	Selector switch, three position, spring return to center from left, maintained in right
GO8-***** N34	Key selector switch, maintained contact, 2 or 3 position
GO36-**** N34	Key selector switch, 2 position, spring return to left
GOL1**	Single pushbutton, momentary contact, extended length
GOL2****	Double pushbutton, maintained contact, extended length
GOL5***	Selector switch, maintained contact, 2, 3, or 4 position, extended length
GOL6*	Selector switch, 2 position, spring return to left, extended length
GOL7*	Selector switch, 3 position, spring return to center from right or left, extended length
GOL14*	Selector switch, 3 position, spring return to center from right, maintain in left, extended length
GOL15*	Selector switch, 3 position, spring return, to center from left, maintain in right, extended length
GOL8*****	Key selector switch, maintained contact, 2 or 3 position, extended length
GOL36****	Key selector switch, 2 position, spring return to left, extended length
GO37-**** N34	Key selector switch, 3 position, spring return to center, from right or left, extended length
GO38-**** N3	Key selector switch, 3 position, spring return to center, from right, maintained in left, extended length
GO39-**** N34	Key selector switch, 3 position, spring return to center, from left, maintained in right, extended length
GO10-*** N34	Snap switch operator, Single pole, single throw, or single pole double throw

GO113 N34	Potentiometer and Rheostat operator, single turn
GO114 N34	Potentiometer and Rheostat operator, 15 turn
GO-RST	Reset Operator, plunger type with 152.4 mm adjustable extension
GO50	Rotary or motor shaft operator, NPSM thread, 12.7 mm diameter shaft, type male to male shaft connection
GO-SP**	Factory Configured for mounting special device
GOL37****	Key selector switch, 3 position, spring return to center, from right or left, extended length
GOL38****	Key selector switch, 3 position, spring return to center, from right, maintained in left, extended length
GOL39****	Key selector switch, 3 position, spring return to center, from left, maintained in right, extended length
GOL113	Potentiometer and Rheostat operator, single turn, extended length
GOL114	Potentiometer and Rheostat operator, 15 turn, extended length
GOLRST	Reset Operator, plunger type with 152.4 mm adjustable extension, extended length
GO51	Rotary or motor shaft operator, 12.7 mm diameter shaft, type male to male shaft connection
GOLSP**	Factory Configured for mounting special device, extended length

G Series Pilot Lights, Type designation	Description The * indicates additional numbers and letters which designates the device color and contact block (circuit) arrangement.
GOB3-**** N34CN	Pilot light, 120 V max. 3 Watt lamp
GOL3**CN ¹	Pilot light
GOB4-**** N34CN ¹	Push button pilot light, 120 V max. 3 Watt lamp
GOL4**CN ¹	Push button pilot light