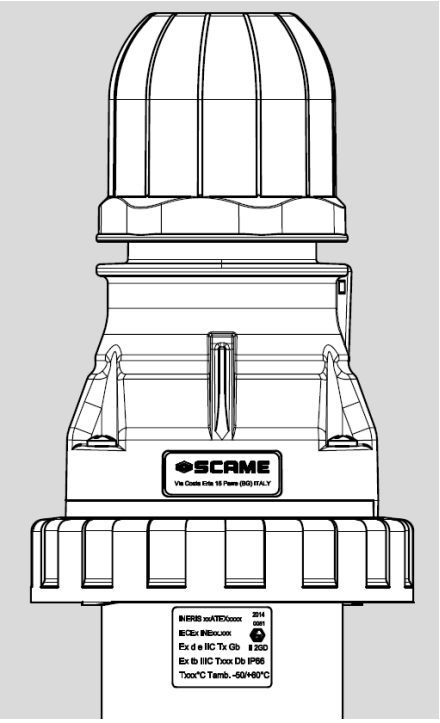
HUBBELL ELECTRICAL PRODUCTS
Killark, A Division of Hubbell Inc. (Delaware)
2112 Fenton Logistics Park Blvd.
Fenton, Missouri 63026 USA

INSTALLATION, OPERATION & MAINTENANCE DATA SHEET

SERIES VSIH ATTACHMENT PLUGS



16A, 32A, 63A and 125A EXPLOSION-PROOF AND DUST IGNITION-PROOF ATTACHMENT PLUGS - SERIES VSIH

INERIS 20 ATEX 0022X **Ex eb IIC T3…T6 Gb**
IECEx INE 20.0020X **Ex tb IIIC T80ºC Db IP66**
CML 21UKEX1362X

CAUTION:

Before installing, make sure you are compliant with area classifications, as failure to do so may result in bodily injury, death and property damage. Do not attempt installation until you are familiar with the following procedures. All installation must comply with the applicable Electrical Code(s).

Make sure that the circuit is de-energized before starting installation or maintenance.

Verify that the installation is grounded. Failure to ground will create electrical shock hazards, which can cause serious injury and or death.

IMPORTANT:

Please read these instructions carefully before installing or maintaining this equipment. Good electrical practices should be followed at all times and this data should be used as a guide only.

Technical information, advice and recommendations contained in these documents is based upon information that Killark believes to be reliable. All the information and advice contained in these documents is intended for use only by persons having been trained and possessing the requisite skill and know-how and to be used by such persons only at their own discretion and risk. The nature of these instructions is informative only and does not cover all of the details, variations or combinations in which this equipment may be used, its storage, delivery, installation, check out, safe operation and maintenance. Since conditions of use of the product are outside of the care, custody and control of Killark, the purchaser should determine the suitability of the product for his intended use, and assumes all risk and liability whatsoever in connection therewith.

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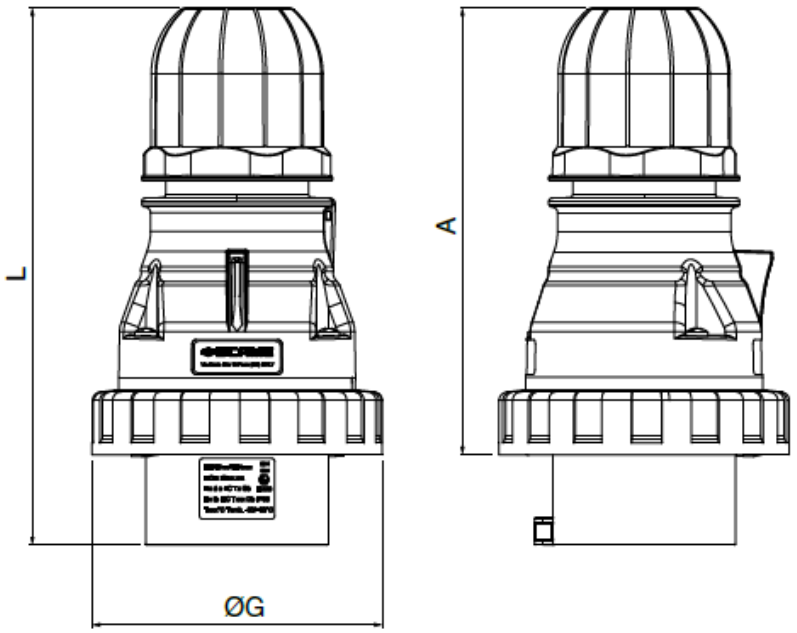

(mm)

IP66	TYPE	A Min	øG	L Min
16A	2P+⏚	116	73	140,5
	3P+⏚	123	81	147,5
	3P+N+⏚	140,5	88	165
32A	2P+⏚	142,6	92	174
	3P+⏚	142,6	92	174
	3P+N+⏚	150	101	180,5
63A	3P+⏚	166,5	112	217,5
	3P+N+⏚	166,5	112	217,5
125A	3P+⏚	214,5	128	274
	3P+N+⏚	214,5	128	274

Technical drawing of the plug

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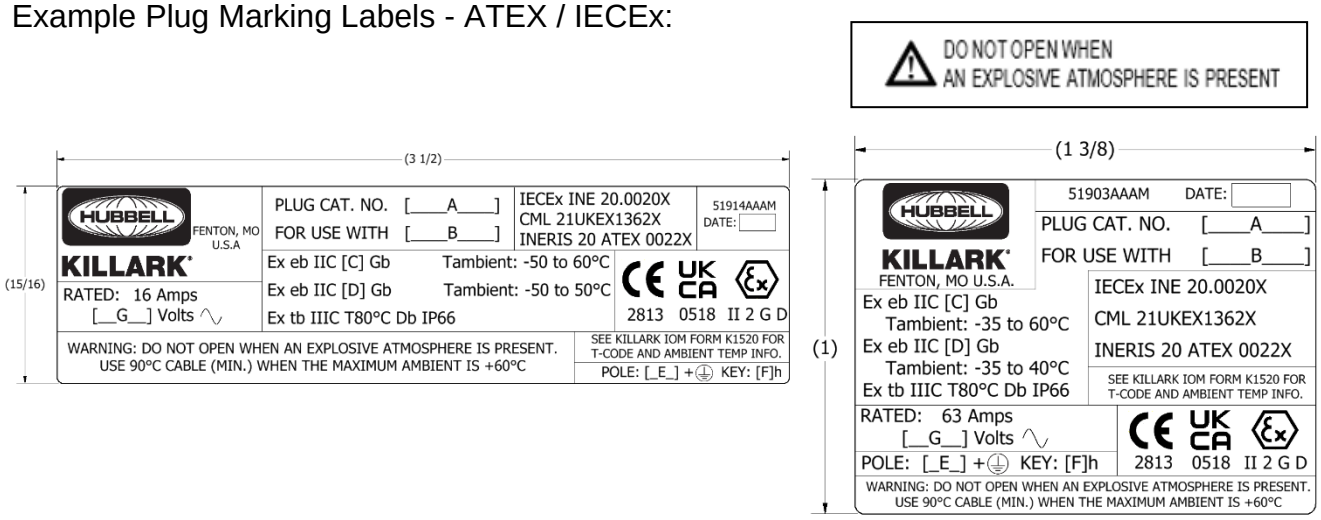
Example Plug Marking Labels - ATEX / IECEx:



THIS DOCUMENT SHOULD BE READ CAREFULLY BEFORE INSTALLATION

1. INSTALLATION , OPERATION AND MAINTENANCE INSTRUCTIONS FOR SAFE USE

1.1 SAFETY RULES

VSIH SERIES sockets (receptacles) are designed as Group II Category 2 equipment suitable for use in fixed installations in Classifed Hazardous Location areas designated Zone 1/21 and Zone 2/22.

These operating instructions must be kept in a safe place for future reference. Use VHIS Series devices only as intended and in undamaged / clean condition, and only where the resistance of the material to the surroundings is assured. NO modifications are allowed to Series VHIS devices which are not specifically described in this instruction manual. When installing Series VHIS devices, the creepage and clearance distances shall be duly considered as noted in Item 5.3, Table 8 below.

Series VSIH Plugs are available in materials GRP with the following rated current 16A, 32A, 63A and 125A.

Series VSIH Plugs are intended to be used with Series VSIH Sockets (Receptacles) rated Ex db eb IIC / Ex tb IIIC. The Series VSIH socket switch handle controls a mechanical interlock mechanism which keeps the plug from being separated from the socket outlet while the contacts are energized. The plug can only be removed from the socket (receptacle) when the switch handle is in postion 0 (zero).

1.2 CONFORMITY TO STANDARDS

Series VSIH devices have been evaluated and Certified to the following Standards**:
IEC/EN 60079-0, -7, -31; **IEC/EN 60309-1, -2**
*** - refer to the IECEx and ATEX Certificates for the current editions of each Standard.*

2. TECHNICAL DATA

2.1 TYPES OF PROTECTION

- ATEX / IECEx:
  Ex eb IIC T[(1)] Gb - Ex tb IIIC T80ºC Db IP66
  Tamb[(2)] – Tcable: [(3)]

(1) Temperature Class for Gas according to Table 1.
(2) Ambient temperature range according to Table 1 when different from -20ºC to +40ºC.
(3) Tcable: "80ºC" for Series VSIH20… when max. ambient temperature is +60ºC.
Tcable: "85ºC" for Series VSIH32… when max. ambient temperature is +60ºC.
Tcable: "90ºC" for Series VSIH63… when max. ambient temperature is +60ºC.
Tcable: "85ºC" for Series VSIH125…

2.2 TYPES OF PROTECTION
ATEX Certificate: **INERIS 20 ATEX 0022X**
IECEx Certificate: **IECEx INE 20.0020X**
UKCA Certificate: **CML 21UKEX1362X**

2.3 TABLE 1 – AMBIENT TEMPERATURE RANGE

PLUG SERIES	Ambient Temperature Range (Tamb)	Temperature Class (T-Code) - Gas	Max. Surface Temperature - Dust
VSIH20…	-50ºC to +50ºC	T6	T80ºC
	-50ºC to +60ºC	T5	
VSIH32…	-50ºC to +60ºC	T4	
	-50ºC to +50ºC	T4	
	-50ºC to +40ºC	T5	
	-40ºC to +60ºC	T4	
	-40ºC to +50ºC	T4	
	-40ºC to +40ºC	T5	
VSIH63…	-35ºC to +60ºC	T3	
	-35ºC to +50ºC	T3	
	-35ºC to +40ºC	T4	
VSIH125…	-35ºC to +40ºC	T4	

⚠ The ambient temperature range can be limited by the ambient temperature of the Series VSIH socket (receptacle). See Killark IOM. K1519 for Series VSIH socket (receptacle) ambient temperature ratings.

2.4 WARNING LABEL

⚠ do not open when
an explosive atmosphere is present

3. TABLE 2 - PRODUCT NOMENCLATURE : SERIES VSIH SOCKET CATALOG NUMBER SUFFIXES**

POLES	Hz	Volts	Color	h	16A(*)	32A(*)	63A(*)	Color	125A(*)
2P+E	50/60	100-130	Yellow	4	20P304	32P304	---	---	---
	50/60	200-250	Blue	6	20P306	32P306	---	---	---
	50/60	380-415	Red	9	20P309	32P309	---	---	---
	50/60	480-500	Red	7	20P307	32P307	---	---	---
2P+E	300-500	50-500	Red	2	20P302	32P302	---	---	---
3P+E	50/60	100-130	Yellow	4	20P404	32P404	63P404	Black	125P404
	50/60	200-250	Blue	9	20P409	32P409	63P409	Black	125P409
	50/60	380-415	Red	6	20P406	32P406	63P406	Black	125P406
	60	440-460	Red	11	20P411	32P411	63P411	Black	125P411
	50/60	480-500	Red	7	20P407	32P407	63P407	Black	125P407
	50/60	600-690	Red	5	20P405	32P405	63P405	Black	125P405
	50/60	380/440	Red	3	20R403	32R403	63R403	Black	125R403
3P+E	100-300	50-690	Red	10	20P410	32P410	63P410	Black	125P410
3P+E	>300-500	50-690	Red	2	20P402	32P402	63P402	Black	125P402
3P+N+E	50/60	110-130	Yellow	4	20P504	32P504	63P504	Black	125P504
	50/60	208-250	Blue	9	20P509	32P509	63P509	Black	125P509
	50/60	346-415	Red	6	20P506	32P506	63P506	Black	125P506
	50/60	480-500	Red	7	20P507	32P507	63P507	Black	125P507
	50/60	600-690	Red	5	20P505	32P505	63P505	Black	125P505
	60	440-460	Red	11	20P511	32P511	63P511	Black	125P511
	50/60	380-440	Red	3	20P503	32P503	63P503	Black	125P503
3P+N+E	>300-500	380/440	Red	2	20P502	32P502	63P502	Black	125P502

** - Suffixes in Table 2 above may be followed by these optional suffix letters:
- **ES – Earth Stud (optional)**
- **ESEP – Earth Stud and Earth Plate (optional)**
- **A / AA – Auxiliary contact(s): 1NO + 1NC / 2NO + 2NC**

4. TECHNICAL FEATURES

SERIES VSIH ATTACHMENT PLUGS			
CATALOG NUMBER	MAXIMUM CURRENT		
	Tamb 40ºC	Tamb 50ºC	Tamb 60ºC
VSIH 20P…	16A	16A	16A
VSIH 32P…	32A	32A	32A
VSIH 63P…	63A	63A	63A
VSIH 125P…	125A	---	---

⚠ WARNING ! The cable entry can reach high temperatures – Suitable cable shall be used.

4. TECHNICAL FEATURES (Continued)

PLUG SERIES OPTIMA-EX[GD]	Unit		Value			
Rated Current			16A	32A	63A	125A
Code			219.16...	219.32...	219.63...	219.125...
Size cables L1 – L2 – L3 - N Size Ground-Terminals cable	(mm^2)		4	6	16	50
Power Supply Terminals Tightening-Torque	(Nm)		1	1.5	2	4
Cable gland size accepted (eg.H07RN-F) Do Not Use Armoured Cable	(mm)	2P+⏚ 3P+⏚ 3P+N+⏚	14	16	21	30
Cable Gland / Cable-Clamp Tightening-Torque	(Nm)	2P+⏚ 3P+⏚ 3P+N+⏚	5,6	10	10	25
Cable-Gland/Cable- Clamp (Screw) Tightening-Torque	(Nm)		0,8	0.8	0.8	0.8
Handle Screws – Tightening-Torque	(Nm)		1	1	1,2	1,5

5. INSTALLATION

⚠ Installation shall be carried out by suitably-trained personnel in accordance with the applicable code of practice (e.g. IEC EN 60079-14) and the provisions of the national safety and accident prevention regulations and this instruction manual.

5.1 SAFETY INSTRUCTIONS

Use the plug only for its intended purpose. Incorrect / impermissable use, or non-compliance with these instructions, invalidates the warranty provision. No changes to the plug impairing its explosion protection are permitted. Install and operate the plug only if it is clean and undamaged.

5.2 ACCESSORIES

- Protection Cup

Only approved accessories must be used.

5.3 CREEPAGE AND CLEARANCE DISTANCES

All wiring must be carried out in accordance with the code of practice and installation stanndards in hazardous areas like IEC/EN 60079-14. Use the correct size of tool and torque (see manufacturer documents) for tightening the terminal clamps (screwdriver or spanner). Creapage and clearance distances shall comply with IEC/EN 60079-7 (Table 1). Electrical parameters shall not exceed the maximum allowed.

5.4 CREEPAGE AND CLEARANCE DISTANCES

All wiring must be carried out in accordance with the code of practice and installation stanndards in hazardous areas like IEC/EN 60079-14. Use the correct size of tool and torque (see manufacturer documents) for tightening the terminal clamps (screwdriver or spanner). Creepage and clearance distances shall comply with IEC/EN 60079-7 (Table 1). Electrical parameters shall not exceed the maximum allowed.

Note: Minimum creepage and clearance distances that shall be maintained to conductive parts or other live parts are:

Minimum Creepage		Minumum Clearance	
250V	5mm	250V	5mm
400V	8mm	400V	6mm
500V	10mm	500V	8mm
630V	12mm	630V	10mm

Note: Voltages are nominal voltages – the working voltage may exceed by 10% the voltage level given.

6 SERVICING AND MAINTENANCE AND REPAIRING

⚠ **Installation, inspection and maintenance of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (e.g. IEC/EN 60079-14, IEC/EN 60079-17). Repair of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice. During servicing, it is particularly important to check those components upon which the type of protection depends.**

6.1 ROUTINE MAINTENANCE

Routine maintenance is required to guarantee the efficiency of the enclosure and to maintain the required level of protection.

1) Check that the sealing ring is in place and not damaged…each time the enclosure is opened.
2) Check that all the fixing screws are in place and secured…each time the enclosure is closed.
3) Check that the mounting screws are tight and free of corrosion…annually.
4) Check the body for damage…annually.
5) In Zones where combustible dust is present, it is necessary to periodically clean the upper surface of the box, limiting the depth of the dust layer to less than 5 mm.

Storage Conditions:
Storage Temperature: from -50ºC to +70ºC for 16A/32A
Storage Temperature: from -35 ºC to +70ºC for 63A/125A
Relative Humidity: ≤95% RH
The estimated product lifetime is 10 years if storage conditions are respected and all routine care and maintenance practices specified in this manual are applied.

6.2 RESISTANCE TO CHEMICAL AGENT

Consideration should be given to the environment in which these enclosures are to be used to determine the suitability of these materials to withstand any corrosive agents that may be present.

6.3 DISPOSAL

Disposal and recycling of the product shall be carried out according to national regulations .