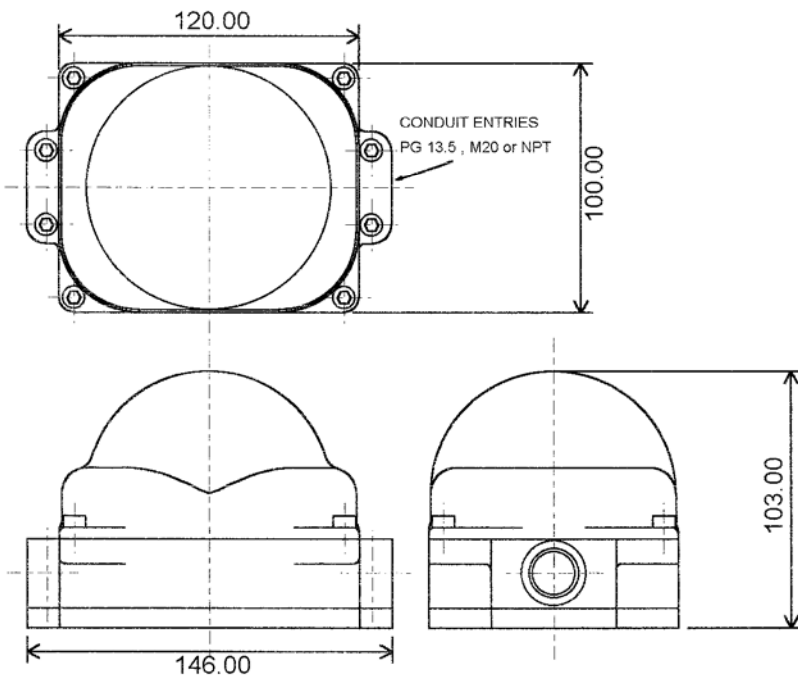


CV3P2D/P&F Product Manual



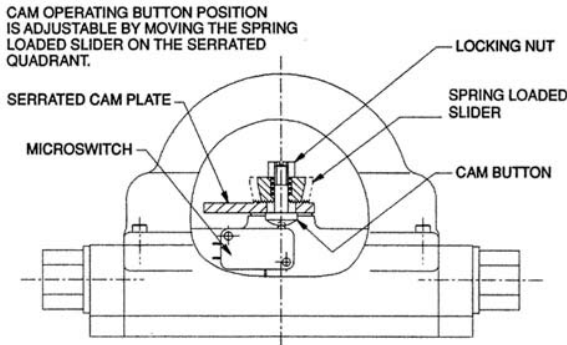
Overall Dimensions



Materials of Construction

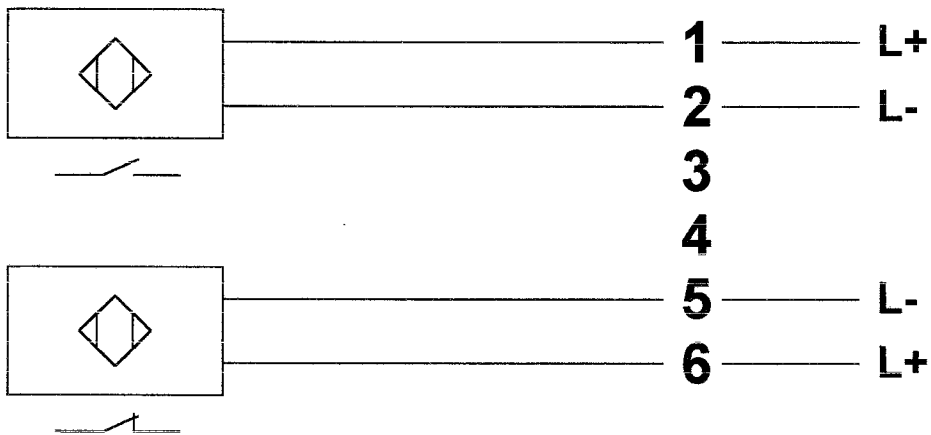
Enclosure	Polycarbonate Lexan 121
Indicator	Polycarbonate Lexan 121
Interface Plate	Polycarbonate Lexan 121
O-Ring	Nitrile
Fasteners	Stainless Steel

View of cam adjusters



Total accessibility and simplicity provide rapid switch adjustment, once the lid and indicator dome are removed. The cam carrying sliders are spring loaded on splines, with the thumbscrew loosened the cam can be adjusted in seconds simply by lifting the slider and relocating it as required, re-tightening of the thumbscrew locks the slider in position and eliminates any possibility of creep.

CV3P2D Switchbox



Using Pepperl & Fuchs NJ2-V3 Proximity sensor

Shown in closed position

Wiring Diagram Ref:- WD03CV3P2

SGS House,
Johns Lane
Tividale
Warley
West Midlands
B69 3HX
Telephone:- 0121 520 6454
Telex:- 339118 SGSBHM
Telefax:- 0121 522 4116

Report No. : ES 25108

29 October 1996

Client Ref. : 9319

Page 1 of 2

Date Received : 10/10/96

Date Tested : 16/10/96

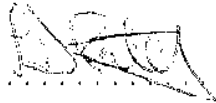
Client : CeeVee Ltd
Upper Mills Estate
Bristol Road
Stonehouse
Gloucestershire GL10 2BJ

For the attention of Mr J. Apperley

1-off Switchbox, CV3

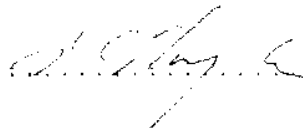
This document supersedes all previously issued bearing the reference ES 25108

Written By :



S.D. Patel
Metallurgist.

Approved By :



P.G. Taylor
Section Leader - Product Testing.

Certified that the tests have been carried out in accordance with fully documented procedures which have been Namas Accredited.
Opinions and interpretations expressed herein are outside the scope of NAMAS Accreditation.

ALL ORIGINAL CERTIFICATION CARRIES AN EMBOSSED SEAL IN THIS SPACE.

Distribution:

- 1) Client
- 2) SGS File
- 3) -
- 4) -

INTRODUCTION

The above switchbox was received for testing to BS EN 60529 IP66 and IP67.

METHOD AND RESULTS

IP6X Dust Ingress

The switchbox was placed in the cabinet and 50 μ m talcum powder circulated around it for 8 hours.

After 8 hours the sample was opened and inspected for ingress of dust.

There was no ingress of dust.

IPX6 Water Ingress

The switchbox was subjected to a stream of water from a 12.5mm ID nozzle at a delivery rate of 100 l/min \pm 5% from a distance of 3 metres for a period of 3 minutes per side making a total of 12 minutes.

The boxes were then dried, opened and inspected for ingress of water.

There was no ingress of water.

IPX7 Water Ingress

The switch box was emmersed in water to a depth of 1 metre and left for 30 minutes.

After 30 minutes the switch box was removed from the water, dried, opened and inspected for ingress of water.

There was no ingress of water.

CONCLUSIONS

The switchbox was acceptable to BS EN 60529 IP66 and IP67.



(1) **EC-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 00 ATEX 2032 X



(4) Equipment: Cuboidal inductive sensors, types FJ..., NJ... and NC...

(5) Manufacturer: Pepperl + Fuchs GmbH

(6) Address: D-68307 Mannheim

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 00-29269.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014:1997

EN 50020:1994

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

II 2 G EEx ia IIC T6

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, June 30, 2000

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2032 X**

(15) Description of equipment

The cuboidal inductive sensors, types FJ..., NJ... and NC... are used to convert displacements into electrical signals.

The cuboidal inductive sensors may be operated with intrinsically safe circuits certified for categories and explosion groups [EEx ia] IIC or IIB resp. [EEx ib] IIC or IIB. The category as well as the explosion group of the intrinsically safe cuboidal inductive sensors depends on the connected supplying intrinsically safe circuit.

Electrical data

Evaluation and

supply circuit..... type of protection Intrinsic Safety EEx ia IIC/IIB
resp. EEx ib IIC/IIB

only for connection to certified intrinsically safe circuits
maximum values:

type 1	type 2	type 3	type 4
$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$
$I_i = 25 \text{ mA}$	$I_i = 25 \text{ mA}$	$I_i = 52 \text{ mA}$	$I_i = 76 \text{ mA}$
$P_i = 34 \text{ mW}$	$P_i = 64 \text{ mW}$	$P_i = 169 \text{ mW}$	$P_i = 242 \text{ mW}$

The assignment of the type of the connected circuit to the maximum permissible ambient temperature and the temperature class as well as the effective internal reactances for the individual types of cuboidal inductive sensors is shown in the following table:

types	C _i [nF]	L _i [μH]	type 1			type 2			type 3			type 4		
			maximum permissible ambient temperature in °C for application in temperature class											
			T6	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1
FJ 6-110-N...	150	110	73	88	100	73	88	100	62	77	81	54	63	63
FJ 7-N...	65	220	73	88	100	73	88	100	62	77	81	54	63	63
NCB2-F1-N0...	90	100	73	88	100	66	81	100	45	60	89	30	45	74
NCB2-V3-N0...	100	100	73	88	100	66	81	100	45	60	89	30	45	74
NCN4-V3-N0...	100	100	73	88	100	66	81	100	45	60	89	30	45	74
NCB15+U...+N0...	110	160	73	88	100	66	81	100	45	60	89	30	45	74
NCB40-FP-N0...	220	360	73	88	100	66	81	100	45	60	89	30	45	74
NCN15-M...-N0...	100	100	73	88	100	66	81	100	45	60	89	30	45	74
NCN20+U...+N0...	110	160	73	88	100	66	81	100	45	60	89	30	45	74
NCN30+U...+N0...	110	160	73	88	100	66	81	100	45	60	89	30	45	74
NCN40+U...+N0...	120	130	73	88	100	66	81	100	45	60	89	30	45	74
NCN50-FP-N0...	220	360	73	88	100	66	81	100	45	60	89	30	45	74
NJ 0,8-F-N...	30	50	73	88	100	67	82	100	45	60	78	30	45	57
NJ 1,5-F-N...	30	50	73	88	100	67	82	100	45	60	78	30	45	57
NJ 2,5-F-N...	40	50	73	88	100	66	81	100	45	60	89	30	45	74
NJ 2-F1-N...	30	50	73	88	100	66	81	100	45	60	89	30	45	74
NJ 2-V3-N...	40	50	73	88	100	66	81	100	45	60	89	30	45	74
NJ 4-F-N...	150	100	73	88	100	66	81	100	45	60	89	30	45	74
NJ 6-F-N...	70	100	73	88	100	66	81	100	45	60	89	30	45	74
NJ 10-F-N...	85	100	73	88	100	66	81	100	45	60	89	30	45	74
NJ 15+U.+N...	140	130	73	88	100	66	81	100	45	60	89	30	45	74
NJ 15-M1.-N...	140	100	73	88	100	66	81	100	45	60	89	30	45	74
NJ 20+U.+N...	150	130	73	88	100	66	81	100	45	60	89	30	45	74
NJ 30+U.+N...	160	130	73	88	100	66	81	100	45	60	89	30	45	74
NJ 30P+U.+1N...	150	170	73	88	100	66	81	100	45	60	89	30	45	74
NJ 40+...+N...	180	130	73	88	100	66	81	100	45	60	89	30	45	74
NJ 50-FP-N...	320	360	73	88	100	66	81	100	45	60	89	30	45	74

(16) Test report PTB Ex 00-29269

(17) Special conditions for safe use

1. For the application within a temperature range of -60 °C to -20 °C the cuboidal inductive sensors, types FJ..., NJ... and NC... must be protected against damage due to impact by mounting into an additional housing.
2. The connection facilities of the cuboidal inductive sensors, types FJ..., NJ... and NC... shall be installed as such that at least a degree of protection of IP20 according to IEC-publication 60529:1989 is met.
3. The assignment of the type of the connected circuit to the maximum permissible ambient temperature and the temperature class as well as the effective internal reactances for the individual types of cuboidal inductive sensors is shown in the table given under item (15) of this EC-type-examination certificate.
4. With the application in group IIC inadmissible electrostatic charge of the plastic housing has to be avoided for following types of cuboidal inductive sensors (warning label on the device):

NCB40-FP-N0...	NJ 30P+U...+1N...
NCN40+U...+N0...	NJ 40+U...+N...
NCN50-FP-N0...	NJ 50-FP-N...

5. Inadmissible electrostatic charge of parts of the metal housing has to be avoided for the following types of cuboidal inductive sensors. Dangerous electrostatic charges of parts of the metal housing can be avoided by grounding of these parts whereas very small parts of the metal housing (e.g. screws) don't need to be grounded:

FJ 6-110-N...	NCN30+U4+N0...	NJ 20+U4+N...
FJ 7-N...	NCN40+U3+N0...	NJ 30+U3+N...
NCB15+U3+N0...	NCN40+U4+N0...	NJ 30+U4+N...
NCB15+U4+N0...	NCN50-FP-N0-P3...	NJ 30P+U3+1N...
NCB40-FP-N0-P3...	NCN50-FP-N0-P4...	NJ 30P+U4+1N...
NCB40-FP-N0-P4...	NJ 15+U3+N...	NJ 40+U3+N...
NCN20+U3+N0...	NJ 15+U4+N...	NJ 40+U4+N...
NCN20+U4+N0...	NJ 15-M1-N-V	NJ 50-FP-N-P3...
NCN30+U3+N0...	NJ 20+U3+N...	NJ 50-FP-N-P4...

(18) Essential health and safety requirements

Met by the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



Braunschweig, June 30, 2000

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