Translation

(1) # EU-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**

(3) **Certificate Number** **TÜV 12 ATEX 107540 X** **issue:** 00

(4) for the product: Electro Pneumatic Position Controllers
SIEMENS SIPART PS2 Typ 6DR5ayb-0cdef-g**h-Zjjj and
SIEMENS SITRANS VP160 Typ 6DR64a0-bcdef-0AAg-Zjjj

(5) of the manufacturer: **Siemens AG**

(6) Address: DE-76181 Karlsruhe, Germany

Order number: 8000458182

Date of issue: 2017-02-20

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential ATEX Assessment Report No. 16 203 177600.

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

EN 60079-0: 2012 + A11: 2013 **EN 60079-7: 2015** **EN 60079-11: 2012**
EN 60079-31: 2014

except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.

11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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

II 2 G	**Ex ia IIC T6/T4 Gb**	**oder**	**Ex ia IIC T4 Gb**	**bzw.**
II 2 D	**Ex ia IIIC T110°C Db**	**oder**	**Ex tb IIIC T100°C Db**	**bzw.**
II 3 G	**Ex ic IIC T6/T4 Gc**	**oder**	**Ex ic IIC T4 Gc**	**bzw.**
II 3 G	**Ex ec IIC T6/T4 Gc**	**oder**	**Ex ec IIC T4 Gc**	

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body

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(13) SCHEDULE

(14) EU-Type Examination Certificate No. TÜV 12 ATEX 107540 X issue 00

(15) Description of product

The electro pneumatic position controllers SIEMENS SIPART PS2 type 6DR5ayb-0cdef-g**h-Zjjj and SIEMENS SITRANS VP160 type 6DR64a0-bcdef-0AAg-Zjjj are used for the control of valve resp. flap positions of pneumatic actuators.

The position controller SIEMENS SIPART PS2 type 6DR5ayb-0cdef-g**h-Zjjj can be equipped with the following options:

Alarm module	6DR4004-6A	specification e = 1
SIA module (slot initiators)	6DR4004-6G	specification e = 2
Mechanical limit switch module	6DR4004-6K	specification e = 3
Position feedback module	6DR4004-6J	specification f = 1 resp. f = 3
EMC filter module	C73451-A430-D23	specification f = 2 resp. f = 3
Internal NCS module	6DR4004-5LE	specifications e = 9 and Z = L1A
External position detection system	C73451-A430-D78	not recorded in the type key
External position detection system	6DR4004-1ES	not recorded in the type key
Non-contacting sensor	6DR4004-6N**0-***	not recorded in the type key
Pressure Regulator G ¼	6DR4004-3P	specifications h = 9 and jjj = R3A
Pressure Regulator ½ NPT	6DR4004-3PN	specifications h = 9 and jjj = R3B
OPOS Interface®	6DR4004-5PB	specifications b = 0, 1, 2, 3 and jjj = K20

The position controller SIEMENS SITRANS VP160 type 6DR64a0-bcdef-0AAg-Zjjj can be equipped with the following options:

Position feedback module	6DR4004-6J	specification f = 1

The position controller can also be operated with clean dry natural gas, freely by additions at place of air. The condition for the operation with natural gas is an electric connection of the level of protection "ia", category 2G.

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Type key:

The type designation of SIEMENS SIPART PS2 type 6DR5ayb-0cdef-g**h-Zjjj can be provided with the following specifications:

a = 0, 2, 5, 6
y = 1, 2
b = 0, 1, 2, 3
c = E, G, D, F, K
d = G, N, M, P, R, S
e = 0, 1, 2, 3, 9
f = 0, 1, 2, 3
g = 0, 2, 3, 6, 7
h = 0, 1, 2, 3, 4, 9R**
jjj = A20, A40, C20, D53, D54, D55, D56, F01, K**, L1A, M40, R**, S**, Y**

The type designation of SIEMENS SITRANS VP160 type 6DR64a0-bcdef-0AAg-Zjjj can be provided with the following specifications:

a = 0, 2
b = 1, 2
c = E, G, D, F, K
d = S, A
e = 0, 1, 2, 3
f = 0, 1
g = 0, 1, 2, 3, 4, 9R**
jjj = A20, A40, K**

The character * stands for any character. The information given in this test report is not relevant for the used type of protections.

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Technical data:

Sipart PS2 6DR50yb-*cdef-*Ah-Zjjj
Sitrans VP160 6DR6400-bcdef-0AAg-Zjjj
PCB –L250

2-wire basic device without HART
Auxiliary power supply / control current 4…20 mA
Terminals 6+ and 7/8

Type of protection: Ex ia
only for the connection to certified intrinsically safe circuits (maximum values)

U_i	I_i	P_i	C_i	L_i
30 V	100 mA	1 W	11 nF	207 µH

Type of protection: Ex ic
only for the connection to intrinsically safe circuits (maximum values)

U_i	I_i		C_i	L_i
30 V	100 mA		11 nF	207 µH

Types of protection: Ex ec or Ex tb
for the connection to circuits with the following maximum (values in normal operation)

U_n	I_n
30 V	100 mA

Binary input (terminals 9 and 10)
galvanically conn. to aux. power supply / control current

jumpered or connected to switch contact

Sipart PS2 6DR52yb-*cdef-*Ah-Zjjj
Sitrans VP160 6DR6420-bcdef-0AAg-Zjjj
PCB –L200

2-wire basic device with HART
Auxiliary power supply / control current 4…20 mA
1) Jumper between terminal 6 and 4/5
2) Control current connection terminals 3+ and 7/8

3/4-wire basic device with HART
Auxiliary power supply 18…30 V (terminals 2+ and 4/5) and
Control current 4…20 mA (terminals 6+ and 7/8)
4L: aux. power supply and control current elec. isolated
3L: common base point (terminals 4/5 and 7/8)

Type of protection: Ex ia
only for the connection to certified intrinsically safe circuits (maximum values)

U_i	I_i	P_i	C_i	L_i
30 V	100 mA	1 W	11 nF	310 µH

Type of protection: Ex ic
only for the connection to intrinsically safe circuits (maximum values)

U_i	I_i		C_i	L_i
30 V	100 mA		11 nF	310 µH

Types of protection: Ex ec resp. Ex tb
for the connection to circuits with the following maximum (values in normal operation)

U_n	I_n
30 V	100 mA

Binary input (terminals 9 and 10)
galvanically conn. to aux. power supply / control current

jumpered or connected to switch contact

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Sipart PS2 with Profibus **for 6DR55yb-*cdef-g*Ah-Zjjj** PCB –A5E00095037 **Sipart PS2 with Foundation Fieldbus** **for 6DR56yb-*cdef-g*Ah-Zjjj** PCB –A5E00164801 Bus-circuit (terminals 6+ and 7)	**Type of protection: Ex ia** only for supply with a certified FISCO power supply (maximum values)				
	U_i	I_i	P_i	C_i	L_i
	17.5 V	380 mA	5.32 W	(*1	8 µH
	Type of protection: Ex ia only for supply with a certified barrier (maximum values)				
	U_i	I_i	P_i	C_i	L_i
	24 V	250 mA	1.2 W	(*1	8 µH
	Type of protection: Ex ic only for supply with a FISCO power supply (maximum values)				
	U_i	I_i		C_i	L_i
	17.5 V	570 mA		(*1	8 µH
	Type of protection: Ex ic only for supply with a barrier (maximum values)				
	U_i			C_i	L_i
	32 V			(*1	8 µH
	Type of protection: Ex ec resp. Ex tb for the connection to circuits with the following maximum values in normal operation				
	U_n	I_n			
	30 V	100 mA			
Binary input (terminals 9+ and 10) galvanically connected to the bus circuit	jumpered or connected to switch contact				

Sipart PS2 with Profibus **for 6DR55*b-*cdef-g*Ah-Zjjj** PCB –A5E00095037 **Sipart PS2 with Foundation Fieldbus** **for 6DR56*b-*cdef-g*Ah-Zjjj** PCB –A5E00164801 Safe input (terminals 81+ and 82) galvanically isolated from bus circuit and binary input	**Type of protection: Ex ia** only for the connection to certified intrinsically safe circuits (maximum values)				
	U_i	I_i	P_i	C_i	L_i
	30 V	100 mA	1 W	(*1	(*1
	Type of protection: Ex ic only for the connection to intrinsically safe circuits (maximum values)				
	U_i	I_i		C_i	L_i
	30 V	100 mA		(*1	(*1
	Types of protection: Ex ec resp. Ex tb for the connection to circuits with the following maximum values in normal operation				
	U_n	I_n			
	30 V	100 mA			

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<table>
<tr><td rowspan="11">Option
Alarm module
6DR4004-6A

<u>Binary output circuits</u>
Terminals (31+ and 32); (41+ and 42); (51+ and 52)
galvanically safe isolated from each other</td><td colspan="5">Type of protection: Ex ia
only for the connection to certified intrinsically safe circuits (maximum values)</td></tr>
<tr><td>U_i</td><td>I_i</td><td>P_i</td><td>C_i</td><td>L_i</td></tr>
<tr><td>15 V</td><td>25 mA</td><td>64 mW</td><td>5.2 nF</td><td>(*1</td></tr>
<tr><td colspan="5">Type of protection: Ex ic
only for the connection to intrinsically safe circuits (maximum values)</td></tr>
<tr><td>U_i</td><td>I_i</td><td></td><td>C_i</td><td>L_i</td></tr>
<tr><td>15 V</td><td>25 mA</td><td></td><td>5.2 nF</td><td>(*1</td></tr>
<tr><td colspan="5">Types of protection: Ex ec resp. Ex tb
for the connection to circuits with the following maximum values in normal operation</td></tr>
<tr><td>U_n</td><td>I_n</td><td colspan="3" rowspan="2"></td></tr>
<tr><td>15 V</td><td>25 mA</td></tr>
<tr><td rowspan="8">Option
Alarm module
6DR4004-6A

<u>Binary input circuits</u>
Terminals (11+ and 12)
galvanically safe isolated from binary outputs
and basic device
Terminals (21 and 22)
jumpered, galvanically not isolated from basic device</td><td colspan="5">Type of protection: Ex ia, Ex ic
only for the connection to intrinsically safe circuits (maximum values)</td></tr>
<tr><td>U_i</td><td colspan="2" rowspan="2"></td><td>C_i</td><td>L_i</td></tr>
<tr><td>25.2 V</td><td>(*1</td><td>(*1</td></tr>
<tr><td colspan="5">Types of protection: Ex ec resp. Ex tb
for the connection to circuits with the following maximum values in normal operation</td></tr>
<tr><td>U_n</td><td colspan="4" rowspan="2"></td></tr>
<tr><td>25.2 V</td></tr>
</table>

<table>
<tr><td rowspan="11">Option
SIA module
6DR4004-6G

<u>Binary output (fault signal)</u>
Terminals (31+ and 32)</td><td colspan="5">Type of protection: Ex ia
only for the connection to certified intrinsically safe circuits (maximum values)</td></tr>
<tr><td>U_i</td><td>I_i</td><td>P_i</td><td>C_i</td><td>L_i</td></tr>
<tr><td>15 V</td><td>25 mA</td><td>64 mW</td><td>5.2 nF</td><td>(*1</td></tr>
<tr><td colspan="5">Type of protection: Ex ic
only for the connection to intrinsically safe circuits (maximum values)</td></tr>
<tr><td>U_i</td><td>I_i</td><td></td><td>C_i</td><td>L_i</td></tr>
<tr><td>15 V</td><td>25 mA</td><td></td><td>5.2 nF</td><td>(*1</td></tr>
<tr><td colspan="5">Types of protection: Ex ec resp. Ex tb
for the connection to circuits with the following maximum values in normal operation</td></tr>
<tr><td>U_n</td><td>I_n</td><td colspan="3" rowspan="2"></td></tr>
<tr><td>15 V</td><td>25 mA</td></tr>
</table>

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Option **SIA module** **6DR4004-6G** Binary output (slot initiators) Terminals (41+ and 42) ; (51+ and 52)	**Type of protection: Ex ia, Ex ic** only for the connection to certified intrinsically safe circuits (maximum values)				
	U_i	I_i	P_i	C_i	L_i
	15 V	25 mA	64 mW	161 nF	120 µH
	Types of protection: Ex ec resp. Ex tb for the connection to circuits with the following maximum values in normal operation				
	U_n	I_n			
	15 V	25 mA			

Option **Mechanical limit switch module** **6DR4004-6K** Binary output (fault signal) Terminals (31+ and 32)	**Type of protection: Ex ia** only for the connection to certified intrinsically safe circuits (maximum values)				
	U_i	I_i	P_i	C_i	L_i
	15 V	25 mA	64 mW	5.2 nF	(*1
	Type of protection: Ex ic only for the connection to intrinsically safe circuits (maximum values)				
	U_i	I_i		C_i	L_i
	15 V	25 mA		5.2 nF	(*1
	Types of protection: Ex tb for the connection to circuits with the following maximum values in normal operation				
	U_n	I_n			
	15 V	25 mA			
Option **Mechanical limit switch module** **6DR4004-6K** Binary outputs Terminals (41+ and 42) ; (51+ and 52)	**Type of protection: Ex ia** only for the connection to certified intrinsically safe circuits (maximum values)				
	U_i	I_i	P_i	C_i	L_i
	30 V	100 mA	750 mW	(*1	(*1
	Type of protection: Ex ic only for the connection to intrinsically safe circuits (maximum values)				
	U_i	I_i		C_i	L_i
	30 V	100 mA		(*1	(*1
	Types of protection: Ex tb for the connection to circuits with the following maximum values in normal operation				
	U_n	I_n			
	30 V	100 mA			

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Option
Position feedback module
6DR4004-6J

Only for use in temperature class T4

Current output
Terminals (61+ and 62)
galvanically isolated from alarm module and basic device

Type of protection: Ex ia
only for the connection to certified intrinsically safe circuits (maximum values)

U_i	I_i	P_i	C_i	L_i
30 V	100 mA	1 W	11 nF	(*1

Type of protection: Ex ic
only for the connection to intrinsically safe circuits (maximum values)

U_i	I_i		C_i	L_i
30 V	100 mA		11 nF	(*1

Types of protection: Ex ec resp. Ex tb
for the connection to circuits with the following maximum values in normal operation

U_n	I_n
30 V	100 mA

Option
EMC filter module
C73451-A430-D23

Connection module with filter elements for connection of an external position detection system

Types of protections: Ex ia resp. ic
supplied via basic device with Profibus PA (6DR55) resp. Foundation Fieldbus FF (6DR56)

U_o	I_o	P_o	C_o	L_o
5 V	static: 75 mA short-time: 160 mA	120 mW	1 µF	1 mH

Types of protection: Ex ia resp. Ex ic
for supply via the other basic devices (6DR50/1/2/3/9)

U_o	I_o	P_o	C_o	L_o
5 V	100 mA	33 mW	1 µF	1 mH

Type of protection: Ex ec resp. Ex tb

U_{max}
5 V

Option
External position detection system
C73451-A430-D78

Power supply and signal circuits galvanically connected with the basic device

Type of protection: Ex ia
only for the connection to certified intrinsically safe circuits (maximum values)

U_i		C_i	L_i
5 V		10 nF	240 µH

Type of protection: Ex ic
only for the connection to intrinsically safe circuits (maximum values)

U_i		C_i	L_i
5 V		10 nF	240 µH

Type of protection: Ex ec
for the connection to circuits with the following maximum values in normal operation

U_n
5 V

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Option
External position detection system
6DR4004-1ES

Power supply and signal circuits galvanically connected with the basic device

Type of protection: Ex ia only for the connection to certified intrinsically safe circuits (maximum values)			
U_i		C_i	L_i
5 V		10 nF	240 µH
Type of protection: Ex ic only for the connection to intrinsically safe circuits (maximum values)			
U_i		C_i	L_i
5 V		10 nF	240 µH
Type of protection: Ex ec for the connection to circuits with the following maximum values in normal operation			
U_n			
5 V			

Option
Non Contacting Sensor (NCS)
6DR4004-6N0-*****

Power supply and signal circuits galvanically connected with the basic device

Type of protection: Ex ia only for the connection to certified intrinsically safe circuits (maximum values)				
U_i	I_i	P_i	C_i	L_i
5 V	160 mA	120 mW	(*2	(*3
Type of protection: Ex ic only for the connection to intrinsically safe circuits (maximum values)				
U_i	I_i		C_i	L_i
5 V	160 mA		(*2	(*3
Type of protection: Ex ec for the connection to circuits with the following maximum values in normal operation				
U_n	I_n			
5 V	160 mA			

Explanation:
(*1 : values negligibly small
(*2 : Ci = 110 nF + (690 pF/m) of connection cable
(*3 : Li = 270 µH + (6,53 µH/m) of connection cable

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Maximum permissible ambient temperature ranges

Device protection by intrinsic safety "i"; device protection increased safety "e"

Type Designation	T4	T6
SIPART PS2 positioner 6DR5ayb-*cdef-g*Ah-Zjjj **SITRANS VP160 positioner** 6DR64a0-bcdef-0AAg-Zjjj	-30 °C ≤ T_a ≤ +80 °C	-30 °C ≤ T_a ≤ +50 °C
SIPART PS2 positioner 6DR5ayb-*cdef-g*Ah-Zjjj with the data (Z = M40)	-40 °C ≤ Ta ≤ +80 °C	-40 °C ≤ Ta ≤ +50 °C
SIPART PS2 positioner 6DR5ayb-*cdef-g*Ah-Zjjj with the data (a = 0, 2) and (e = 0, 1, 2, 3) and (f = 0, 2) **SITRANS VP160 positioner** 6DR64a0-bcdef-0AAg-Zjjj With the data (a = 0, 2)	-30 °C ≤ T_a ≤ +80 °C	-30 °C ≤ T_a ≤ +60 °C
SIPART PS2 positioner 6DR5ayb-*cdef-g*Ah-Zjjj with the data (a = 0, 2) and (e = 0, 1, 2, 3) and (f = 0, 2) and (Z = M40)	-40 °C ≤ T_a ≤ +80 °C	-40 °C ≤ T_a ≤ +60 °C
SIPART PS2 positioner with built-in position feedback module 6DR5ayb-*cdef-g*Ah-Zjjj with the data (f = 1, 3) **Position feedback module for optional installation** 6DR4004-6J	**Only permissible for T4!** -30 °C ≤ T_a ≤ +80 °C	-
SIPART PS2 positioner with built-in position feedback module 6DR5ayb-*cdef-g*Ah-Zjjj with the data (f = 1, 3) and (Z = M40)	**Only permissible for T4!** -40 °C ≤ T_a ≤ +80 °C	
Option: External non Contacting Sensor (NCS) 6DR4004-6N**0-***	-40 °C ≤ T_a ≤ +90 °C	-40 °C ≤ T_a ≤ +70 °C
Option: External position detection system C73451-A430-D78		-40 °C ≤ T_a ≤ +60 °C

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Device protection by dust ignition protection by enclosures "t"

Type Designation	
SIPART PS2 positioner 6DR5ayb-*cdef-g*Ah-Zjjj with the data (c = D, K) **SITRANS VP160 positioner** 6DR64a0-bcdef-0AAg-Zjjj with the data (c = D, K)	-30 °C ≤ T_a ≤ +80 °C
SIPART PS2 positioner 6DR5ayb-*cdef-g*Ah-Zjjj with the data (c = D, K) and (Z = M40)	-40 °C ≤ T_a ≤ +80 °C

(16) Drawings and documents are listed in the ATEX Assessment Report No. 16 203 177600

(17) Specific Conditions for Use

The electropneumatic positioner SIEMENS SIPART PS2 have to be erected in such a way that the plastic window is only exposed to a low level of hazard of mechanical damage.

The applied dust explosion protection by enclosure "t" and "i" respectively the type of protection "e" is only permitted for the electro pneumatic position controller in metallic enclosure SIEMENS SIPART PS2 types 6DR5**1 or 6DR5**2 or 6DR5**3 or SIEMENS SITRANS VP 160 type 6DR64.

The electropneumatic positioner SIEMENS SIPART PS2 as well as the option "external position detection system" with plastic housing (b=0) shall be protected against the build-up of electrostatic charges.

The connecting and disconnecting of the not intrinsic safe circuits to the terminals and the plugging resp. unplugging of the internal plug- and socket connectors under voltage is permitted only if the presence of hazardous atmosphere can be excluded.

(18) Essential Health and Safety Requirements

no additional ones

- End of Certificate -