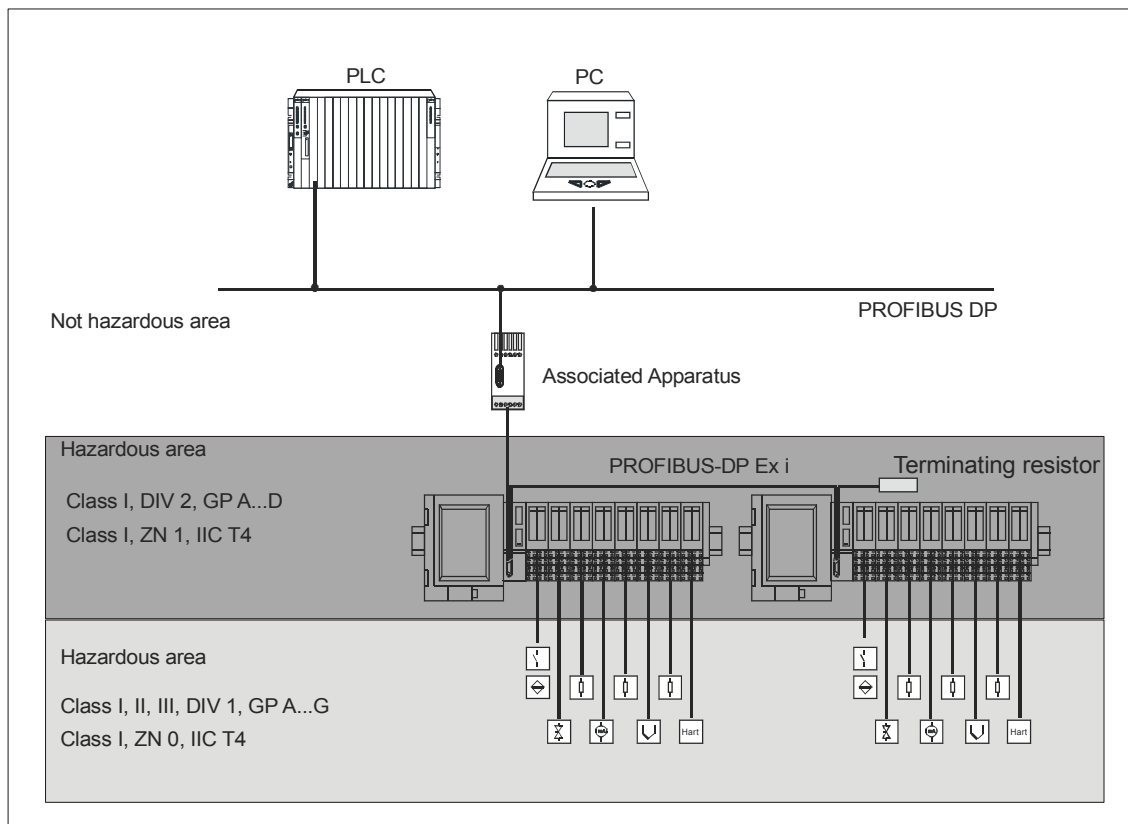


ET 200iS

system in total



The complete interface system ET 200iS with its components is represented in the Control Drawing.

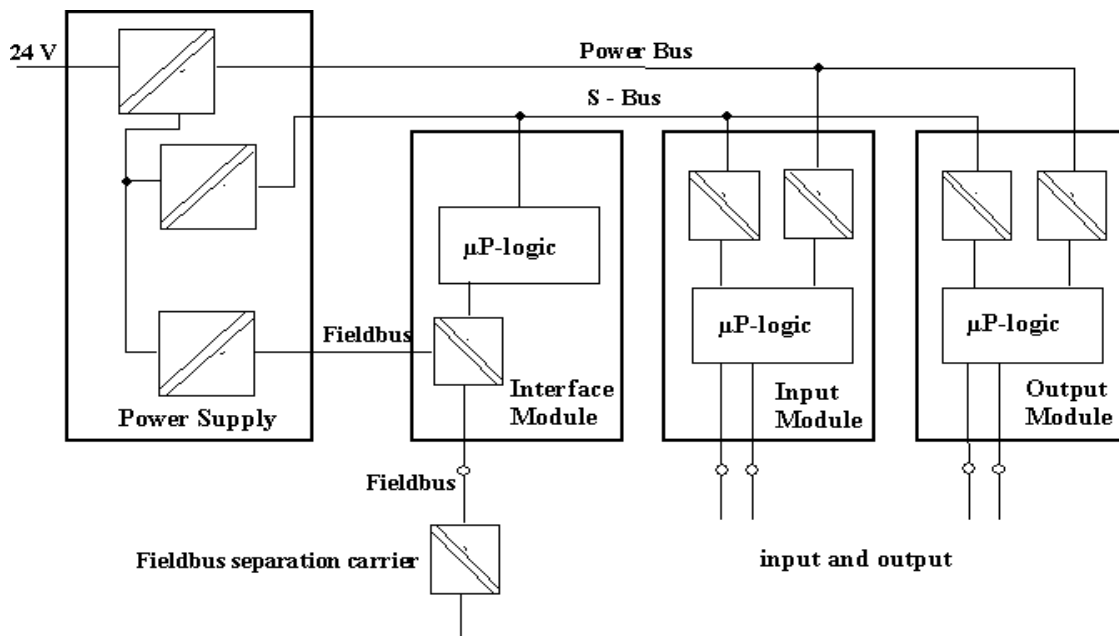
You can find the pin configuration in the manual "SIMATIC ET 200iS Distributed I/O Station".

# Intrinsic Safety Control Drawing A5E00158421-01

ET 200iS

system in total

The supply (of electrical energy) of the components is represented in the following drawing.



## Notes

### 1. POWER SUPPLY

The power supply supplies the Interface Module, the I/O electronic modules and the field circuit. The power supply provides the following supplies:

- Power Bus for the I/O modules and the field circuit
- Electrical circuit for S-Bus and Interface Module
- Electrical circuit for external field bus system

The power supply is specified in the following.

### 2. INTERFACE MODULE

The Interface Module is the connector between the fieldbus and the internal Bus of the ET 200iS with the I/O modules. The input and output data are processed.

### 3. I / O MODULES

There are as many as 32 I/O modules arranged in the internal bus system (taking into account a maximum supply current of 7 A total). You can find the rule to determine the maximum number of modules in the manual "SIMATIC ET 200iS Distributed I/O Station". Respective to the module type they enable the activation of the process interface.

This applies to the complete system installed within the hazardous (classified) area. The maximum current drawn by each module is shown as  $I_{\text{supply}}$  on the following pages.

# Intrinsic Safety Control Drawing A5E00158421-01

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**ET 200iS**

**system in total**

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4. The above mentioned power supply, the IM and the I/O modules may be inserted and removed within the (classified) hazardous area while powered.
5. Third party approved associated apparatus must be installed in accordance with manufacturer instructions.
6. The maximum voltage  $U_M$  used or generated by the equipment installed outside the hazardous area may not exceed 250 Vac.
7. The installation must be in accordance with NEC ANSI / NFPA 70 Article 504 or 505, ANSI / ISA-RP 12.6 and CEC section 18.
8. For installation in Class II, Division 1 or 2 and Class III, Division 1 or 2 Hazardous (Classified) Locations, the system must be installed in an NRTL listed dust-ignition-proof enclosure suitable for such locations.
9. The entity concept allows connection between intrinsically safe apparatus and intrinsically safe and associated apparatus when the following rules are followed:  
$$U_o, V_{oc} \leq U_i, V_{max}$$
$$I_o, I_{sc} \leq I_i, I_{max}$$
$$P_o \leq P_i, P_{max}$$
$$C_o, C_a \geq C_i + C_{cable}$$
$$L_o, L_a \geq L_i + L_{cable}$$
10. WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR THE INTRINSIC SAFETY OR SUITABILITY FOR DIVISION 2

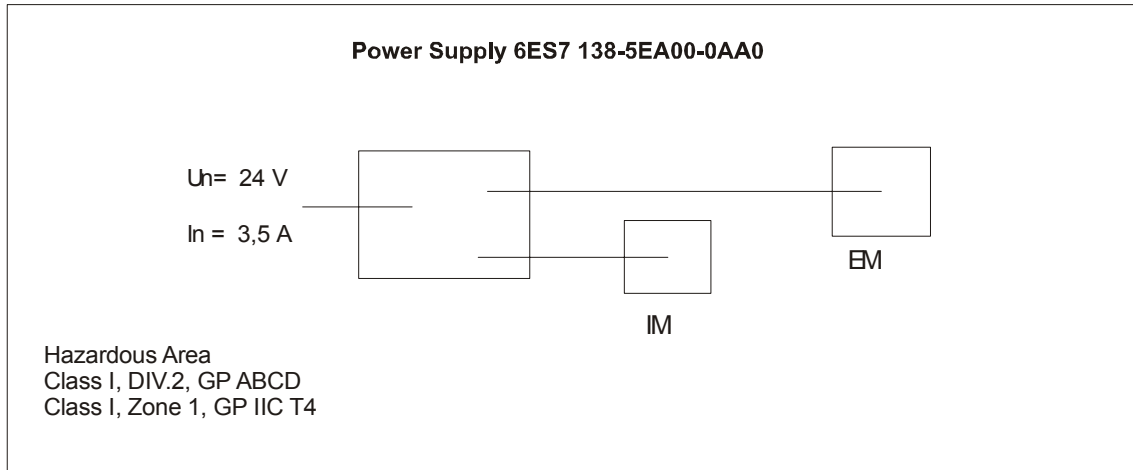
# Intrinsic Safety Control Drawing A5E00158421-01

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ET 200iS

6ES7 138-5EA00-0AA0

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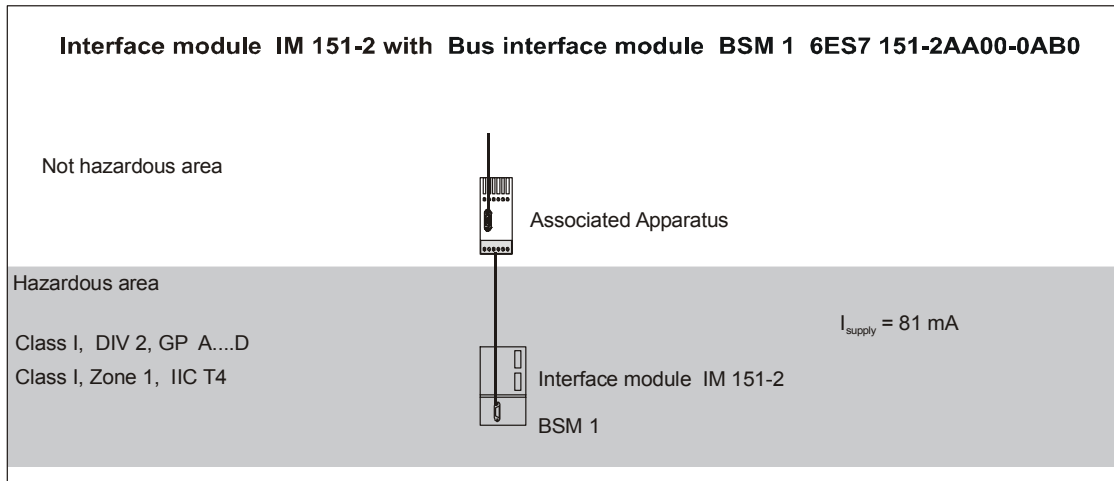


Use with TM-PS part No. 6ES7 193-5DA00-0AA0.

# Intrinsic Safety Control Drawing A5E00158421-01

**ET 200iS**

**6ES7 151-2AA00-0AB0**



You can find the pin configuration in the manual „SIMATIC ET 200iS Distributed I/O Station“, chapter 12.

Use with TM-IM/BSM P/N 6ES7 193-5DB00-0AA0.

The following parameters for the RS 485 fieldbus connection apply to the interface module:

|                         | Fieldbus |
|-------------------------|----------|
| $U_o, V_{oc} [V_{dc}]$  | 4,2      |
| $I_{sc}, I_o [mA]$      | 100      |
| $P_o, [mW]$             | 106      |
| $U_i, V_{max} [V_{dc}]$ | 4,2 (*)  |

(\*)  $I_i, I_{max}, P_i$  can be any value

The following merits apply to the fieldbus line:

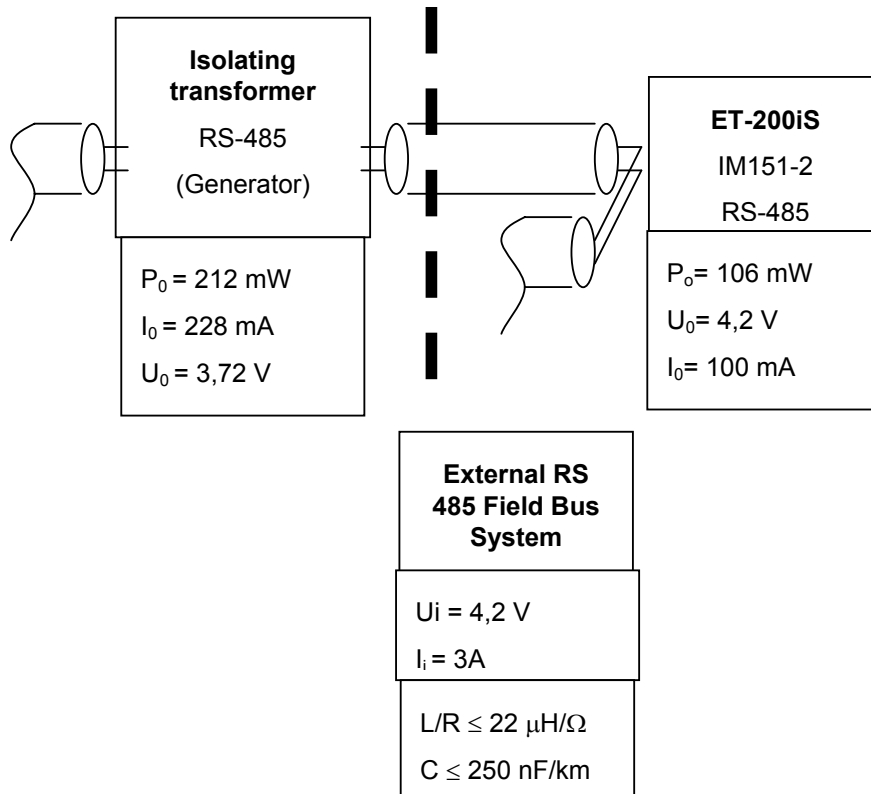
Must be in accordance with NEC 504.30B:

- $L' / R' \leq 22 \mu\text{H} / \Omega$  (loopresistance)
- $C' \leq 250 \text{ nF} / \text{km}$
- Litz wire diameter  $\leq 0,2 \text{ mm}$
- Concentrated inductance and capacitance are not allowed in the running of the external RS 485 fieldbus system.
- In applications where concentrated inductance and capacitance are considered the following values apply:  $C_o, C_a \leq 100 \mu\text{F}$  (A, B/IIC) or  $\leq 1000 \mu\text{F}$  (C, D/IIB)  
and  $L_o, L_a \leq 3\text{mH}$  (A, B/IIC) or  $\leq 15 \text{ mH}$  (C, D/IIB)

# Intrinsic Safety Control Drawing A5E00158421-01

ET 200iS

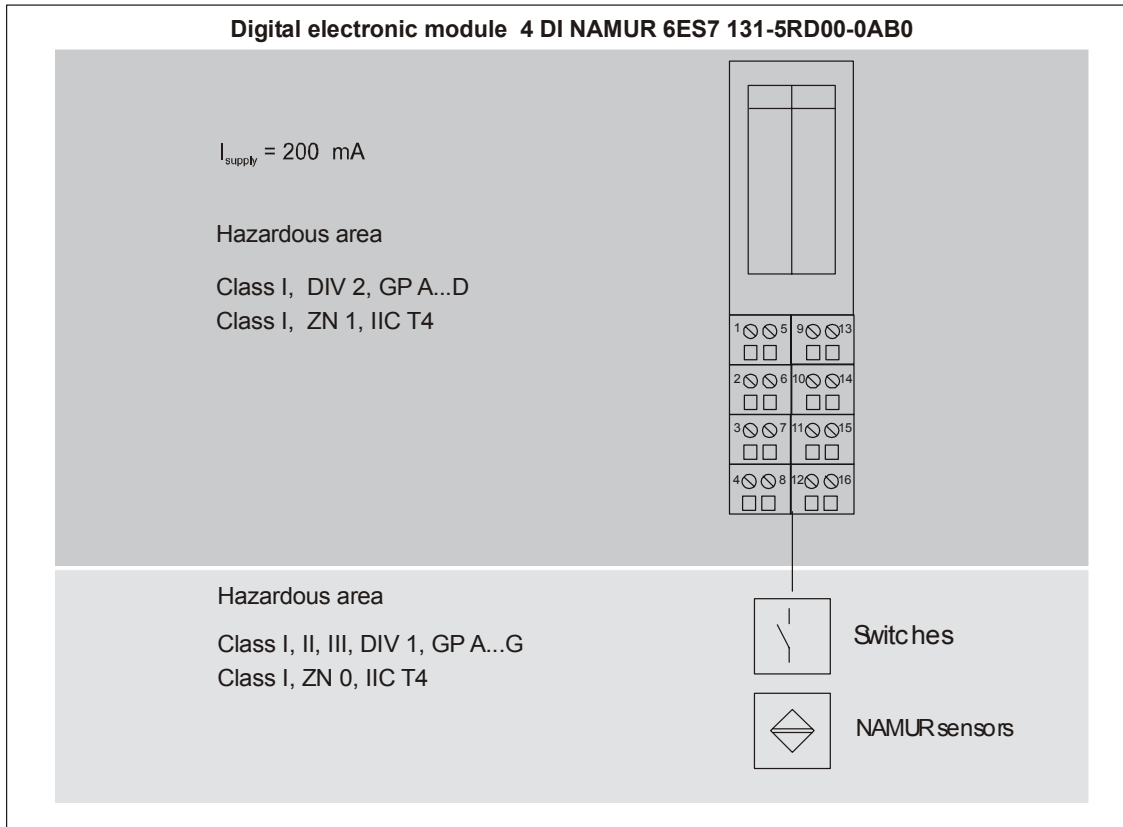
6ES7 151-2AA00-0AB0



# Intrinsic Safety Control Drawing A5E00158421-01

ET 200iS

6ES7 131-5RD00-0AB0



You can find the pin configuration in the manual "SIMATIC ET 200iS Distributed I/O Station", chapter 13.1. Also see notes under "system in total".

Use with TM-E P/N 6ES7 193-5CB\*0-0AA0.

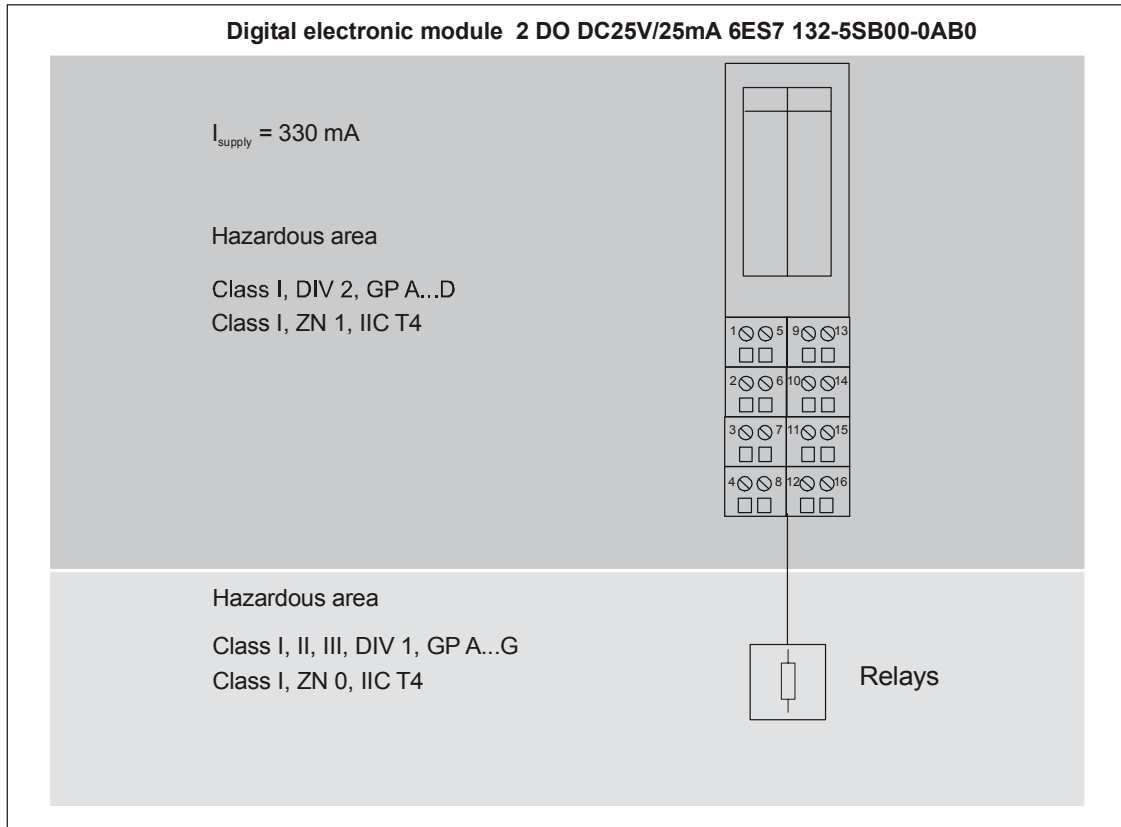
The following parameters for the input circuits are applicable for the electronic module:

|                        | 1 input |         | 2 inputs // |         | 3 inputs // |         | 4 inputs // |         |
|------------------------|---------|---------|-------------|---------|-------------|---------|-------------|---------|
| $U_o, V_{oc} [V_{dc}]$ | 9,6     |         | 9,6         |         | 9,6         |         | 9,6         |         |
| $I_o, I_{sc} [mA]$     | 11      |         | 21          |         | 32          |         | 42          |         |
| $P_o [mW]$             | 26      |         | 50          |         | 77          |         | 101         |         |
|                        | A,B/IIC | C-G/IIB | A,B/IIC     | C-G/IIB | A,B/IIC     | C-G/IIB | A,B/IIC     | C-G/IIB |
| $C_o, C_a [\mu F]$     | 3,6     | 26      | 3,6         | 26      | 3,6         | 26      | 3,6         | 26      |
| $L_o, L_a [mH]$        | 240     | 1000    | 80          | 280     | 35          | 110     | 19          | 65      |

# Intrinsic Safety Control Drawing A5E00158421-01

ET 200iS

6ES7 132-5SB00-0AB0



You can find the pin configuration in the manual "SIMATIC 200iS Distributed I/O Station", chapter 13.2 . Also see notes under "system in total".

Use with TM-E P/N 6ES7 193-5CB\*0-0AA0.

The following parameters for the output circuits are applicable for the electronic module:

|                        | 1 output |         | 2 outputs // |         |
|------------------------|----------|---------|--------------|---------|
| $U_o, V_{oc} [V_{dc}]$ | 28       |         | 28           |         |
| $I_o, I_{sc} [mA]$     | 49       |         | 98           |         |
| $P_o [mW]$             | 345      |         | 685          |         |
|                        | A,B/IIC  | C-G/IIB | A,B/IIC      | C-G/IIB |
| $C_o, C_a [nF]$        | 80       | 650     | 80           | 650     |
| $L_o, L_a [mH]$        | 15       | 55      | 3            | 11      |

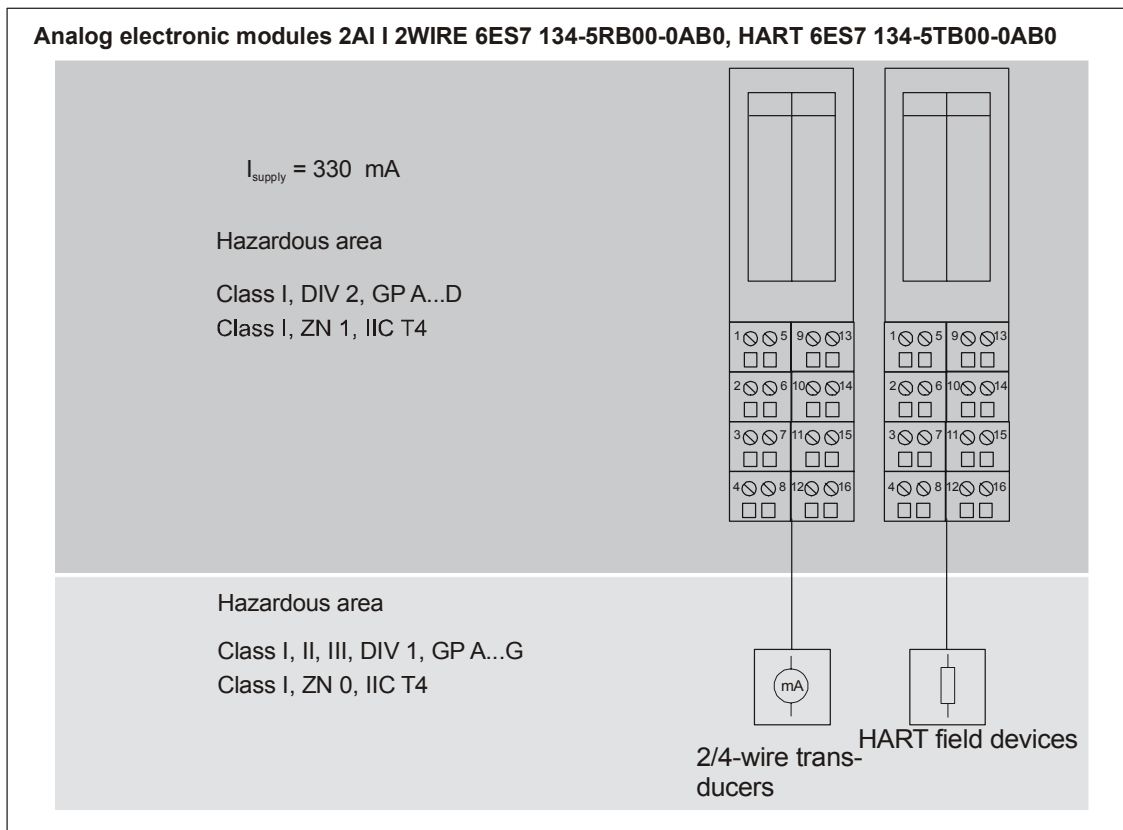


# Intrinsic Safety Control Drawing A5E00158421-01

**ET 200iS**

**6ES7 134-5RB00-0AB0**

**6ES7 134-5TB00-0AB0**



You can find the pin configuration in the manual „SIMATIC ET 200iS Distributed I/O Station“, chapter 14.4 and 15.5 . Also see notes under „system in total“.

Use with TM-E P/N 6ES7 193-5CB\*0-0AA0.

The following parameters for the input circuit are applicable for the electronic modules:

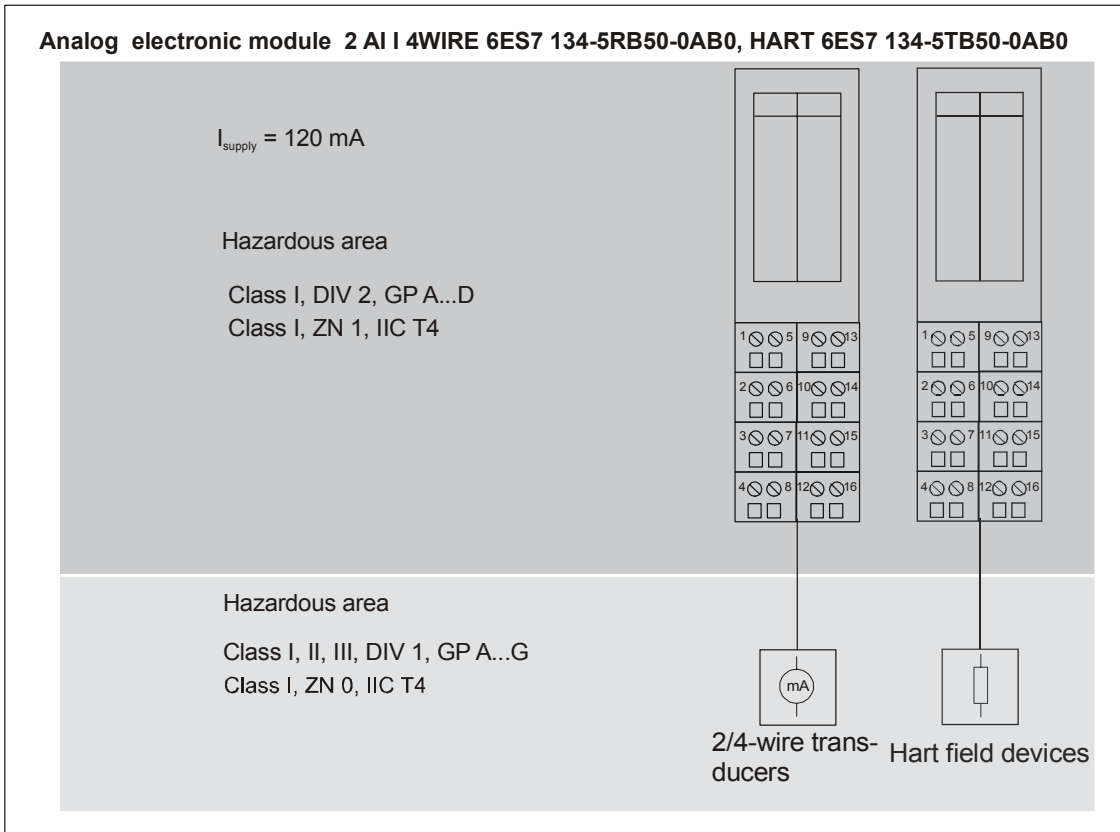
|                        | input   |         |
|------------------------|---------|---------|
| $U_o, V_{oc} [V_{dc}]$ | 28      |         |
| $I_o, I_{sc} [mA]$     | 85      |         |
| $P_o [mW]$             | 595     |         |
|                        | A,B/IIC | C-G/IIB |
| $C_o, C_a [nF]$        | 80      | 650     |
| $L_o, L_a [mH]$        | 4       | 15      |

# Intrinsic Safety Control Drawing A5E00158421-01

**ET 200iS**

**6ES7 134-5RB50-0AB0**

**6ES7 134-5TB50-0AB0**



You can find the pin configuration in the manual „SIMATIC ET 200iS Distributed I/O Station“, chapter 14.5 and 15.6. Also see notes under „system in total“.

Use with TM-E P/N 6ES7 193-5CB\*0-0AA0.

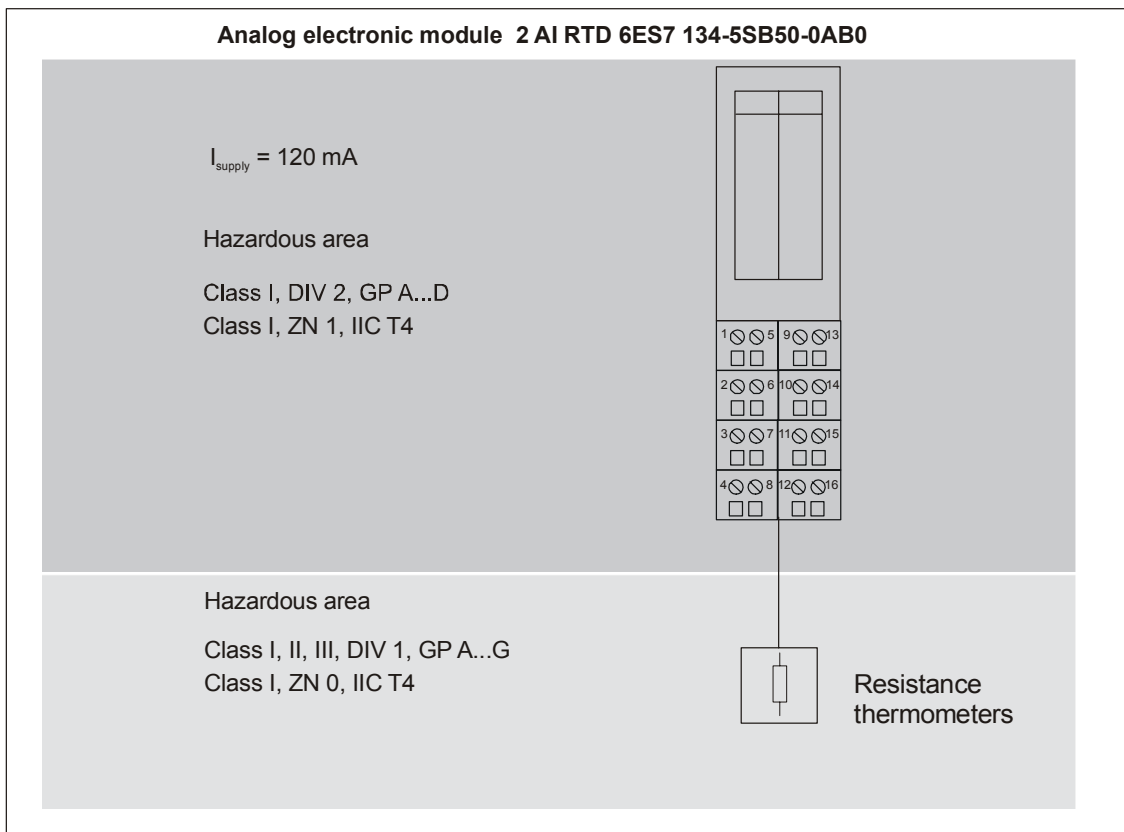
The following parameters for the input circuits are applicable for the electronic modules:

|                                       | input |
|---------------------------------------|-------|
| $U_i, V_{\text{max}} [V_{\text{dc}}]$ | 30    |
| $I_i, I_{\text{max}} [mA]$            | 150   |
| $P_i [W]$                             | 1,2   |
| $C_i [nF]$                            | 2     |
| $L_i [mH]$                            | 0     |

# Intrinsic Safety Control Drawing A5E00158421-01

ET 200iS

6ES7 134-5SB50-0AB0



You can find the pin configuration in the manual „SIMATIC ET 200iS Distributed I/O Station“, chapter 14.6 . Also see notes under „system in total“.

Use with TM-E P/N 6ES7 193-5CB\*0-0AA0.

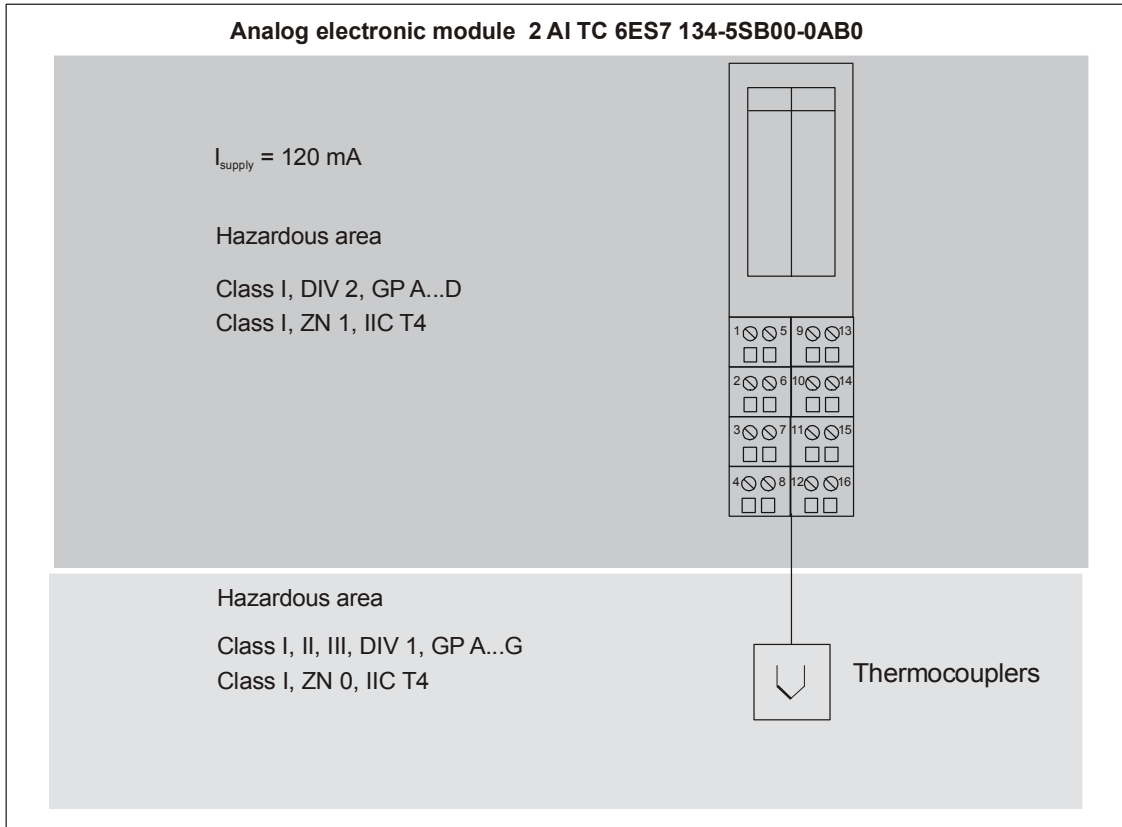
The following parameters for the input circuits are applicable for the electronic module:

|                        | 1 input |         | 2 inputs // |         |
|------------------------|---------|---------|-------------|---------|
| $U_o, V_{oc} [V_{dc}]$ | 6,0     |         | 6,0         |         |
| $I_o, I_{sc} [mA]$     | 16      |         | 28          |         |
| $P_o [mW]$             | 24      |         | 42          |         |
|                        | A,B/IIC | C-G/IIB | A,B/IIC     | C-G/IIB |
| $C_o, C_a [\mu F]$     | 40      | 1000    | 40          | 1000    |
| $L_o, L_a [mH]$        | 120     | 430     | 40          | 160     |
|                        |         |         |             |         |

# Intrinsic Safety Control Drawing A5E00158421-01

ET 200iS

6ES7 134-5SB00-0AB0



You can find the pin configuration in the manual „SIMATIC ET 200iS Distributed I/O Station“, chapter 14.7 . Also see notes under „system in total“.

Use with TM-E P/N 6ES7 193-5CB\*0-0AA0.

The following parameters for the input circuits are applicable for the electronic module:

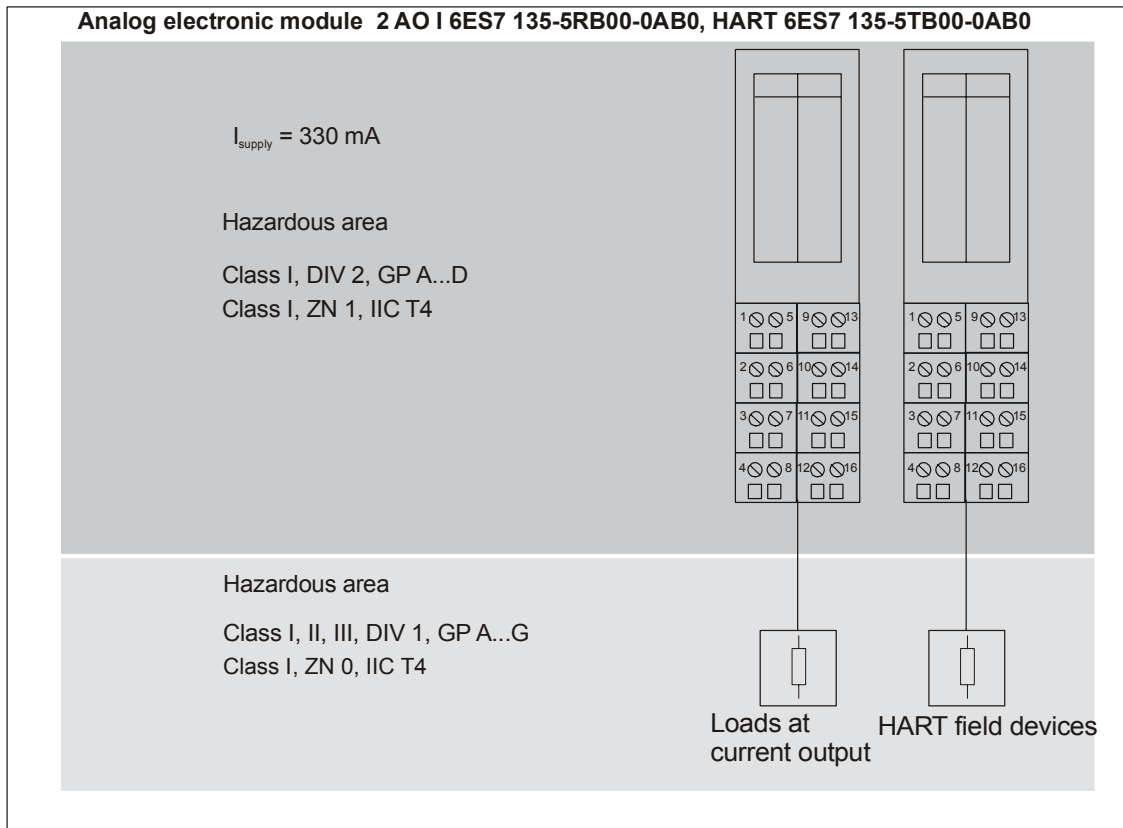
|                        | 1 input |         | 2 inputs // |         |
|------------------------|---------|---------|-------------|---------|
| $U_o, V_{oc} [V_{dc}]$ | 6,0     |         | 6,0         |         |
| $I_o, I_{sc} [mA]$     | 13      |         | 26          |         |
| $P_o [mW]$             | 20      |         | 40          |         |
|                        | A,B/IIC | C-G/IIB | A,B/IIC     | C-G/IIB |
| $C_o, C_a [\mu F]$     | 40      | 1000    | 40          | 1000    |
| $L_o, L_a [mH]$        | 200     | 730     | 50          | 170     |

# Intrinsic Safety Control Drawing A5E00158421-01

**ET 200iS**

**6ES7 135-5RB00-0AB0**

**6ES7 135-5TB00-0AB0**



You can find the pin configuration in the manual „SIMATIC ET 200iS Distributed I/O Station“, chapter 14.8. Also see notes under “system in total”.

Use with TM-E P/N 6ES7 193-5CB\*0-0AA0.

The following parameters for the output circuits are applicable for the electronic modules:

|                        | output  |         |
|------------------------|---------|---------|
| $U_o, V_{oc} [V_{dc}]$ | 28      |         |
| $I_o, I_{sc} [mA]$     | 80      |         |
| $P_o [mW]$             | 560     |         |
|                        | A,B/IIC | C-G/IIB |
| $C_o, C_a [nF]$        | 80      | 650     |
| $L_o, L_a [mH]$        | 5       | 20      |

# Intrinsic Safety Control Drawing A5E00158421-01