DATA SHEET FOR THE DEVELOPMENT OF APCS

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| **Contact information** |  |
| **Name of company/organization:** |  |
| **Contact person:** | *(Full name, position)* |
| **Company/organization address:** | *(Country, city, street, building)* |
| **Телефон, E-mail:** |  |
| **Project objective (highlight as needed):** | *Construction of a new plant, reconstruction of an old production facility* |

**1. List of required information and documents.**

\* Information can be provided in any form that is most convenient for you, taking into account the recommendations of this Data Sheet.

Таблица №1.1

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| **№** | **Description** | **Response** |
| 1 | Company name: |  |
| 2 | Name of object/process: |  |
| 3 | Estimated time to conclude the contract: |  |
| 4 | Estimated start up time of the facility: |  |
| 5 | "Proposed plan for the placement of the DCS and emergency shut-down (APCS) equipment (number of premises, equipment distribution). Plan for the placement of premises at the automation facility, purpose of premises, distances between rooms, internal dimensions of premises for the installation of equipment." |  |
| 6 | List of technological subjects of control and their explosion hazard category according to the General Rules on Explosive Safety: |  |
| 7 | The functions of the DCS and emergency shut-down are combined.  Yes No  If the emergency shut-down is a dedicated system, does it combine the control logic and emergency protection of the equipment? |  |

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| 1оо1D | 1oo2D | 2оо3 | 2oo4 |

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|  | Yes No |  |
| 8 | If the emergency shut-down is implemented on a controller other than the DCS controller, then provide the requirements for the controller and indicate the recommended type. - Certification:  TÜV IEC 61511   * Required SIL level:   2 3   * Baseline architecture: * Duplication of input/output modules:   Yes No  (if duplication is not on all channels, indicate the percentage of the total number of signals for each type of signal)   * Recommended Controller Type: |  |
| 9 | Is it necessary to connect the APCS with other subsystems for transmitting data to the APCS and control?  - Number of subsystems:  - Location of subsystems according to the equipment layout plan (for each subsystem separately):  - Controller type and model (for each subsystem separately):  - Required interfaces and exchange protocols (for each subsystem separately):   * Estimated amount of transmitted analog and discrete data (for each subsystem separately): |  |
| 10 | Is communication with upper-level systems (ACS / IPMS) required?  - Number of upper-level systems:  - Location of systems according to the equipment layout plan (for each system separately):  - Type and revision of the upper-level system (for each system separately)   * Required interfaces and exchange protocols (for each system separately): |  |

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|  | * Estimated amount of data transferred (for each system separately): * Bidirectional data communication with the APCS is provided | | | | | |  |
| 11 | Operator and engineer workstations (APCS)  With distribution by process units, flows, lines and subsystems of the APCS | | | | | |  |
| 12 | The required number of monitors per operator station (1 or 2).  Specify for which stations a dual-screen solution is required.   * Screen size   24" Other   * Overview monitors | | | | | |  |
|  | 50" | 65" | | QTY |  |
| 13 | Availability of a dedicated engineer's workstation:   * DCS system   Yes No   * ESD system   Yes No   * Subsystems | | | | | |  |
|  | Yes | | No | |  |
| 14 | Control and monitoring functions for the engineer's workplace: | | | | | |  |
|  | Yes | | No | |  |
| 15 | Requirements for the uninterruptible power supply system Number of inputs from a 1ph/3ph substation:  Number of power inputs to the automated process control system:  Requirements for building an integrated power supply and interference protection system  Existing faults, interference in power supply circuits: Estimated power of consumers | | | | | |  |

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|  | Current (A) | Direction (V) / 1ph/3ph | QTY |
| * Cut-off valves: |  |  |  |
| * Gate valves: |  |  |  |
| * Actuators |  |  |  |
| * subsystems: |  |  |  |
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|  | U=24V DC | U=220V AC |  |
| Maximum load current at "dry contact" output: |  |  |  |
| Maximum load current at the output "potential signal": |  |  |  |

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|  | UPS operating time in emergency mode, in minutes:  Requirements for redundancy of the uninterruptible power supply system:  Requirements for power distribution cabinets: |  |
| 16 | Requirements for cabinet equipment of the automated process control system. Cross cabinets are mandatory:  Cabinet design:  Recommended cabinet sizes: |  |
| 17 | Requirements for output contacts of APCS control  \* If Imax>4.5A (with "dry contact") and Imax>1.5A (with "potential signal"), installation is required |  |
| 18 | Reserve requirement.  Reserve amount by input/output signal type, % |  |

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|  | DI | DО | AI | AO |
| Signal type from duplicated I/O modules. |  |  |  |  |

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| --- | --- | --- | --- |
|  | DI | DО | AI |
| Signal type from duplicated I/O modules. |  |  |  |

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|  | Amount of spare space in controllers, % |  |
| 19 | Requirements for duplication of DCS input/output modules |  |
| 20 | Requirements for duplication of ESD input/output modules |  |
| 21 | Requirements for spare parts for APCS  For what period should spare parts be provided  when preparing the TKP, years.  or indicate the percentage of spare parts from the main equipment, %  \* In the standard supply, spare parts are provided for 2 (two) years of operation |  |
| 22 | Other requirements not included in this list: |  |

**1.2. Summary table of input/output signals for DCS and PAZ (APCS)**

Recommendations for filling:

1. For a thermocouple input, together with the quantity, it is necessary to indicate the type of thermocouple

2. For a 4-20 mA signal, together with the quantity, indicate the type of power supply circuit 2 or 4 wires, requirements for the HART protocol

4 wires - a four-wire power supply system (the APCS receives an active signal from the field equipment and does not supply it with power)

2 wires - a two-wire power supply system (the APCS receives an active signal from the field equipment and supplies it with power)

The HART protocol can be with a transparency requirement for transmission to other systems

or for polling additional parameters from the instrumentation.

1. For a thermal resistance signal, the connection diagram type must be specified together with the quantity
2. When providing an intrinsically safe circuit, the number of signals is entered in the line with the IS(Exi) label. When using existing intrinsically safe barriers or equipment protection

Exd - the number of signals is entered in the STD line.

Таблица №1.2

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| Name of the block (flow, line, section) | | Discrete inputs | | Discrete outputs | | Analog inputs | | | Analog outputs |
| DI | DI | DO | DO | AI | TC | RTD | AO |
| 24V DC | 220V AC | 220V AC | 24V DC | 4-20мА | Type | Type | 4-20мА |
| Relay | Relay | Relay | Relay | HART |  | Схема | HART |
|  |  | Current | Current | Scheme |  |  | Scheme |
| DCS 1 | STD |  |  |  |  |  |  |  |  |
| IS(Exi) |  |  |  |  |  |  |  |  |
| DCS 2 | STD |  |  |  |  |  |  |  |  |
| IS(Exi) |  |  |  |  |  |  |  |  |
| DCS 3 | STD |  |  |  |  |  |  |  |  |
| IS(Exi) |  |  |  |  |  |  |  |  |
| ESD 1 | STD |  |  |  |  |  |  |  |  |
| IS(Exi) |  |  |  |  |  |  |  |  |
| ESD 2 | STD |  |  |  |  |  |  |  |  |
| IS(Exi) |  |  |  |  |  |  |  |  |
| ESD 3 | STD |  |  |  |  |  |  |  |  |
| IS(Exi) |  |  |  |  |  |  |  |  |
| Required reserve in % or quantity for each type | |  |  |  |  |  |  |  |  |

Please send the completed Data Sheet to office@zavkomepc.com. Thank you for your interest in our company. We hope for mutually beneficial cooperation!