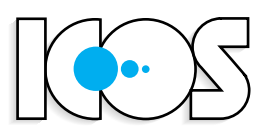


OS



CONTROL SYSTEM



IR

CONTROL SYSTEM

ICOS HAS BEEN AUTOMATING ITS MACHINES WITH PROGRAMMABLE CONTROLLERS FOR MORE THAN 20 YEARS. THE CHOICE IS IN LINE WITH THE STATE OF THE ACTUAL ART, IN WHICH THE PROGRAMMABLE CONTROLLERS (PLC) COMBINED WITH PERSONAL COMPUTERS (PC) OR OPERATOR PANELS (OP) HAVE DEMONSTRATED THEIR SUPERIORITY WITH RESPECT TO DEDICATED ELECTRONICS. IN AGREEMENT WITH THE COMPANY'S PHILOSOPHY OF USING EXCLUSIVELY INDUSTRIAL PRODUCTS FROM MAJOR MANUFACTURERS RATHER THAN SELF-MADE PRODUCTS, THE ICOS TECHNICIANS HAVE HELD PACE WITH TECHNOLOGICAL INNOVATION AND ALWAYS PRESENT PRODUCTS OF KNOWN BRANDS AND THEREFORE MOST APPROPRIATE FOR HANDLING THE PROBLEMS FOUND IN THE FIELD OF PHARMACEUTICAL STERILIZATION. THE UPDATED COMPUTING POWER, THE SPEED, AND THE CONSTANTLY IMPROVED FUNCTIONS HAVE MADE THE PLC/PC OR PLC/OP COMBINATION THE POWERFUL MEANS OF AUTOMATING THE ICOS MACHINES TO FULLY RESPOND TO THE REQUIREMENTS OF THE PHARMACEUTICAL FIELD.

THE CONTROL SYSTEM DETERMINES THE BETTER PERFORMANCE OF THE MACHINE THROUGH:

- INTERFACING WITH THE OPERATOR.
- PROCESS DOCUMENTATION.
- MACHINE CONVALIDATION.
- CUSTOMIZATION OF CYCLES.
- MANUAL OPERATIONS.
- EASY PROGRAMMING.

THESE CHARACTERISTICS ALSO GUARANTEE:

- STANDARDIZATION.
- RELIABILITY.
- EXTERNAL CONNECTIONS.
- BEFORE AND AFTER-SALE ASSISTANCE.



CONTROL BOARD

INTERFACING WITH THE OPERATOR

THE PC AND THE OP ARE THE IDEAL MEANS TO ASSIST THE WORK OF THE OPERATOR. A PROCESS MONITORING PROGRAM ENABLES THE OPERATOR TO EASILY CARRY OUT THE START-UP FUNCTIONS AND CHECK THE VARIOUS PROCESS PARAMETERS. EACH OPERATION IS GUIDED BY A HELP-ON-LINE APPLICATION. THE LANGUAGE CAN BE SWITCHED AUTOMATICALLY.

PROCESS DOCUMENTATION

THE PC AND THE OP PROVIDES A REAL-TIME PRINTOUT OF ALL THE INFORMATION ON THE PROGRESS OF THE PROCESS, FROM THE PROGRESSIVE REPORT NUMBER TO THE SET POINTS USED, FROM THE ANALOG VALUES TO THE FINAL MARK EVENT.

THE PRINTOUT IS COMPACTED TO GIVE SHORTER DOCUMENTS AND INCLUDES THE GRAPHS OF THE ANALOG VALUES. ALL THE REPORTS GENERATED ARE MEMORIZED ON A HARD DISK TO BE ACCESSED AGAIN AND PRINTED AT ANY TIME.

EASY PROGRAMMING

THE EQUIPMENT IS SUPPLIED WITH THE COMPLETE COMMENTED PRINTOUT OF THE PLC PROGRAM. THE PLC LANGUAGE USES THE SIMPLE CONVENTIONAL CONTACT SYMBOLS WELL KNOWN TO ELECTRICIANS. THE PROGRAM MODIFICATION PROCEDURES ARE LIMITED TO A FEW KEYS AND ARE CONTAINED IN THE PC.

CUSTOMIZATION OF CYCLE

USING A PASSWORD, IT IS POSSIBLE TO MODIFY THE SET POINTS OF EACH PROGRAM. THERE ARE ABOUT A HUNDRED DIFFERENT PROGRAMS AVAILABLE, ORGANIZED AROUND DOZENS OF SIMILAR PROCESSES. THE FIRST TEN ARE SERVICE PROGRAMS.

THROUGH OTHER PASSWORDS, IT IS POSSIBLE TO MODIFY THE COMMON UTILITY PARAMETERS.

CHARACTERISTICS

PLC: 32 DIGITAL INPUTS, 48 DIGITAL OUTPUTS, 8 ANALOG INPUTS, 2 ANALOG OUTPUTS.

PC: LCD COLOUR TOUCH SCREEN, HD, FD.

OP: LCD TOUCH SCREEN.

PRINTER: 136 CONDENSED COLUMNS.

TEMPERATURE PROBE: THREE-WIRES PT100 1/5 DIN.

PRESSURE TRANSMITTERS: ABSOLUTE, FACING MEMBRANE, CLAMP CONNECTION;
WATER LEVEL SENSORS: CAPACITIVE.

SUPERVISOR PAGES:

LANGUAGE SELECTION

PROGRAM SELECTION

SET POINT SELECTION

TREND

BAR GRAPH

INPUTS

OUTPUTS

MACHINE SYNOPTIC

ALARMS

MAINTENANCE

AGENDA

REPORT

Fo, Fh, Ft



MACHINE VALIDATION

MANUAL OPERATIONS

THROUGH A PASSWORD, THE TECHNICIAN CAN CARRY OUT A SERIES OF MANUAL OPERATIONS ON THE PROGRESS OF THE CYCLE PHASES, SUCH AS:

- PHASE STOP.
- PHASE ADVANCE.
- SKIP TO DESIRED PAGE.
- SKIP TO UNLOADING PHASE.
- SKIP TO SAFETY PHASE.

THROUGH AN ADDITIONAL PASSWORD, IT IS POSSIBLE TO FORCE THE PLC INPUTS AND OUTPUTS. THIS IS A VALUABLE FEATURE:

- IN EMERGENCY CONDITIONS
- IN SIMULATING A COMPONENT
- IN THE CONVALIDATION PHASE.



STANDARDIZATION

THE ICOS CONTROL SYSTEM IS THE SAME ON ALL ICOS MACHINES (STOPPER WASHERS, STOPPER WASHER-STERILIZERS, AUTOCLAVES, OVENS). THIS SIMPLIFIES THE TASKS OF THE OPERATOR WHO HAS TO MANAGE DIFFERENT MACHINES BUT DOES NOT WANT DIFFERENT SETS OF INSTRUCTIONS. THIS ALSO MEANS GREATER ECONOMY IN THE SUPPLY OF SPARE PARTS.

MACHINE VALIDATION

THE VALIDATION PROCEDURES ARE ASSISTED BY THE SYSTEM.

ON REQUEST, THE FOLLOWING AND OTHER DOCUMENTS CAN BE PROVIDED FOR THE VALIDATION:

- LIST OF PROGRAMS.
- LIST OF SET POINTS USED IN EACH PROGRAM.
- LIST OF PHASES USED IN EACH PROGRAM.
- LIST OF OUTPUTS USED IN EACH PHASE.

THE VALUES SHOWN ARE THE EFFECTIVE VALUES READ IN THE PLC.

ALL THE VIDEO PAGES CAN BE PRINTED.
ALL THE HELP PAGES CAN BE PRINTED.



PC WITH SOFTWARE DESIGNED FOR 21 CFR PART 11

EXTERNAL CONNECTIONS

THE PLC IS PROVIDED WITH COMMUNICATION PORT FOR EXTERNAL CONNECTION.

THE PC IS PROVIDED WITH COMMUNICATION PORT FOR EXTERNAL CONNECTION.

THE CONTROL SYSTEM CAN BE CONNECTED TO:

- MODEM
- HOST COMPUTER
- LOCAL NETWORK.

THE MODEM IS USED FOR REMOTE ASSISTANCE.

THE HOST COMPUTER IS USED FOR REMOTE CONTROL.

THE LOCAL NETWORK IS USED FOR CENTRALIZING THE DATA.

RELIABILITY

IN KEEPING WITH THE COMPANY'S PHILOSOPHY, ALL THE COMPONENTS USED ARE FROM WELL-KNOWN MAJOR BRANDS FOUND ON THE INTERNATIONAL MARKET. BEFORE THE FINAL TESTING PHASES, THE CONTROL BOARD UNDERGOES A SERIES OF COMPLIANCE AND OPERATING TESTS. THE QUALITY CONTROL SYSTEM IMPLEMENTED AND VERIFIED BY EXTERNAL INSPECTORS GUARANTEES THE END PRODUCT. THE LARGE NUMBER OF ICOS MACHINES INSTALLED AND IN OPERATION ARE THE BEST PROOF OF THE HIGH QUALITY OF THE CONTROL SYSTEM.



PLC (ALLEN-BRADLEY, MODICON, SIEMENS)

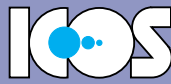
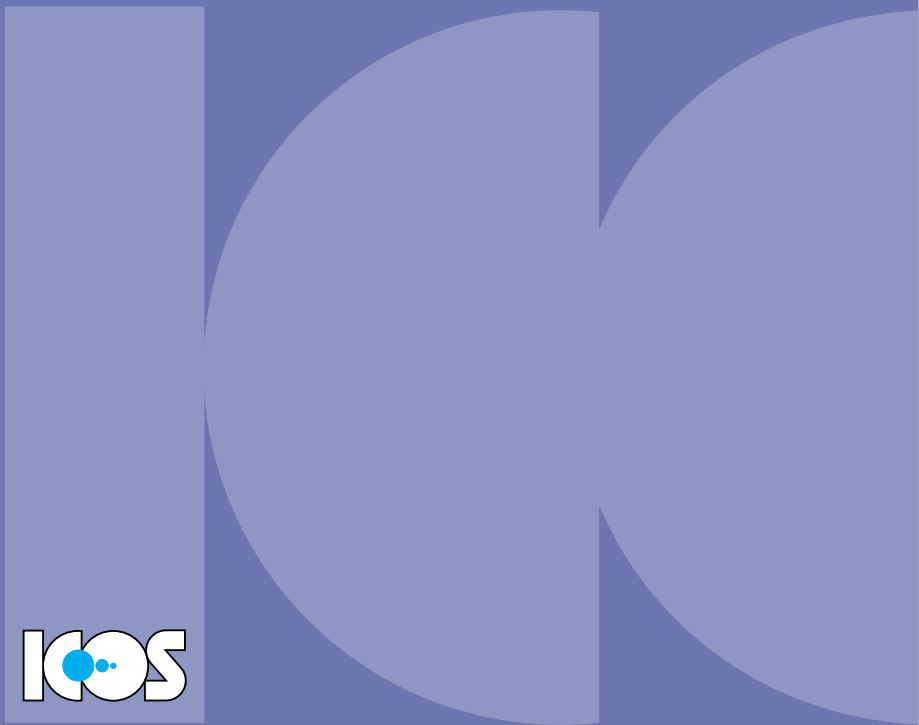
TECHNICAL ASSISTANCE

ICOS PROVIDES ALL THE NECESSARY TECHNICAL ASSISTANCE, FROM INSTALLATION TO FINAL TESTING, AND TO CONVALIDATION OF THE MACHINE.

THE POST-SALE ASSISTANCE IS GUARANTEED THROUGH FIRST-AID TELEPHONE ASSISTANCE SERVICE, WITH WHICH IT IS POSSIBLE TO SOLVE MOST PROBLEMS, AND DIRECTLY BY OUR TECHNICIANS.



REPORT



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