STARKSTROM
Innovation at our core

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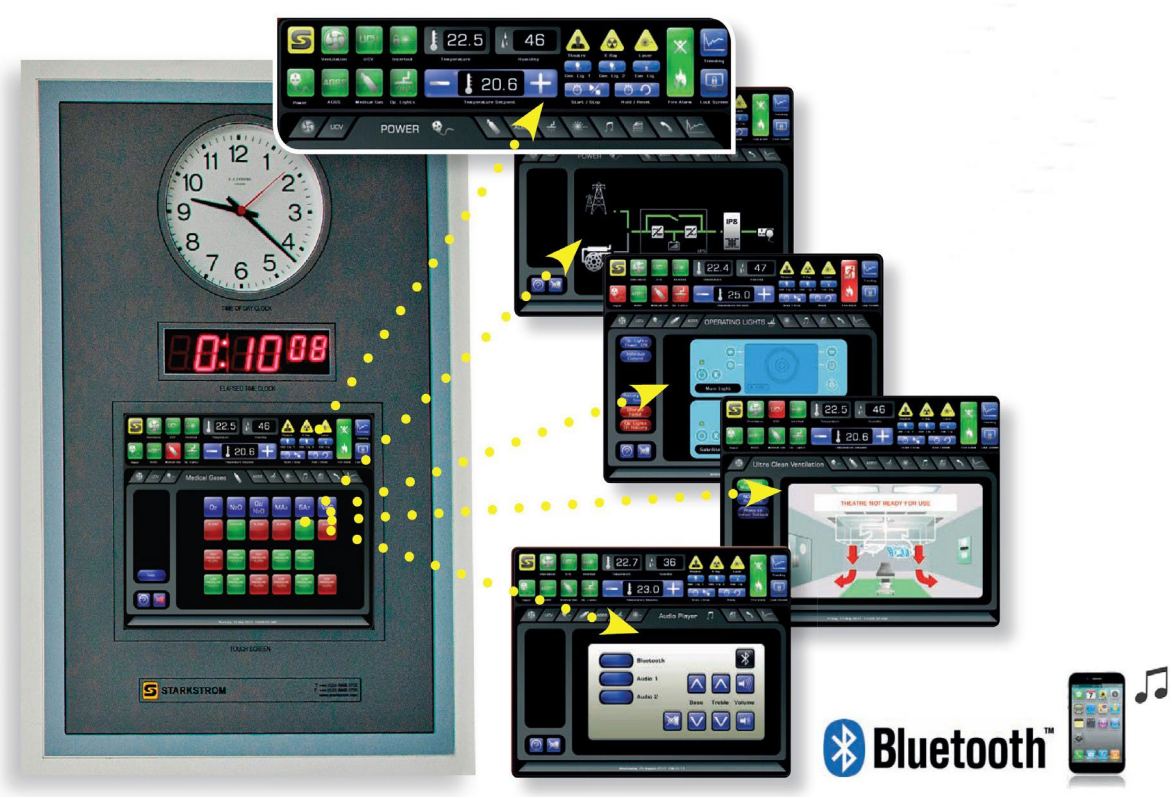
Theatre Control Panel (eTCP)



Product Description

Our Theatre Control Panels (TCP) combine the controls of an operating theatre into a single interface panel comprising services such as lighting, temperature and humidity, ventilation, and critical alarms.

They provide clinical teams with a simple and intuitive method of controlling the theatre environment using the intuitive interactive touch panel.

Sleek in design and simple to use, our TCPs are manufactured to exact customer specifications, with every panel programmed and configured to the client's specific needs, they can also be reprogrammed, should future theatre equipment changes be necessary.

Supplied in a choice of 17" and 24", our TCPs can accommodate bespoke add-ons such as integrated music and window blind controls.

A clinical priority in every hospital is infection prevention and control. Our control panels are designed so they are easy and efficient to clean with a unique finish that minimises the risk of contamination and spread of harmful bacteria.

Features and Benefits

- Infection control friendly and easy to clean with complete integral membrane and high IP rating – IP43
- Small, light, and compact requiring little additional work or expense to support the panel within the wall.
- Can incorporate low IP rated equipment in separate membrane panel which does not have the full integrity of the main panel.
- Matching X-ray / PACS viewers available
- Flexibility to accommodate late changes in the specifications by way of software updates
- Touchscreen is capable of being linked to BMS for easy access to theatre environment
- Easy to upgrade and accommodate new theatre innovations by software alone. Minimum theatre downtime to upgrade audio speaker system.
- The panel has two distinct Buzzer/Alarms, Standard and the Medical Gas Alarm for faults on the Medical Gases. There is also an alarm mute feature for use during Maintenance
- Choice of analogue or digital time of day clocks
- Maximum panel depth of 150mm enabling easier installation in standard wall depths. No need to build wall panels to suit panel depth.
- Modern appearance complimenting today's hi-tech theatres.
- Cost saving as no need to purchase traditional free issue equipment like medical gas alarms, temperature/humidity indicators.
- No approval required to allow panel manufacture.
- Proven reliability with PLC's that have fewer points of failure than distributed I/O systems.
- Ability to store all product electronic O&M manuals and any other pertinent information for ease of retrieval.
- Operating Lights (main and satellite), General Lights, and Illuminated Warning Signs can be controlled (switched/dimmed) through the panel.
- Integration of other manufacturers op-light, audio, interlock, or ventilation controls.

Supply Voltage	
Supply Voltage (24VDC supply version also available)	110V to 120V 60Hz or 230 to 240VAC 50z
Supply Voltage Tolerance	-10%, +10%
Frequency	50 Hz/60Hz
Power Supply Usage (max)	500VA
Supply Disconnect Switch Rating	100A
Max. Supply Cable CSA	25.0mm

Internal Control Voltage Power Supply	
Series	1606
Model	1606-XLP100E
Supply Voltage	85 … 264VAC
Output Voltage	24 … 28VDC
Output Current	4.2A
Short Circuit Current @ 25°C	7.1A
Efficiency	90%
PFC Harmonics	EN 61000-3-2
Parallel Operation	Possible
MTBF	500,000 hrs.

Touch Screen	
Series	FDK172/242-834-R-DC
Processor	Intel® Celeron® processor J1900 2.0 GHz (Bay Trail-D)
Size	17" – 24"
Screen Type	Colour Active Matrix
Touch Type	Resistive
Resolution	1280x1024
Viewing Angle (H/V)	170°/160°
Ports	4 x RS-232/422/485 (default RS-232) 1 x LAN 2 x USB 3.0, 2 x USB 2.0 1 x Audio (Line-out), 1 x VGA
Brightness (cd/m^2)	250nits
Number of Colours	24bit
Supply Voltage	12 to 36 VDC with over-current protection fuse
Operating System	Windows 10
Expansion system	Dual PCIe mini slots
Storage	1 x Integrated HDD plus 1 x compact flash

Logic Controller	
Series	MicroLogix 1200
Model	1762-L40BWAR (Twin Port Model)
Onboard Inputs (0 … 1kHz)	20 Digital Inputs (24VDC)
Onboard Fast Count Inputs (0 … 20kHz)	4 Fast Count Digital Inputs (24VDC)
Onboard Outputs	16 Relay Outputs (Volt Free)
EMC Immunity	EN 50082-2
EMC Emission	EN 50081-2
Comms. Protocols – Channel 0	DH-485 / DF1 Full Duplex / DF1 Half DuplexDF1 Radio Modem / Modbus Master and Slave / ASCII
Comms. Protocols – Channel 1	DF1 Full Duplex Only
Fieldbus – Modbus (Optional)	Yes, with add-on Allen Bradley 1761-NET-AIC
Fieldbus – Modbus	RTU Master or RTU Slave
Fieldbus – DeviceNet (Optional)	Yes, with add-on Allen Bradley 1761-NET-DNI
Programming Software	RS Logix 500 / 5000
Power Supply	85 … 264VAC
Power Supply Frequency	47 … 63 Hz
Power Supply Inrush	120VAC: 25A for 8ms, 240VAC: 40A for 4ms
Heat Dissipation	22.0 W
Power Supply Usage	82VA
Shock Operating / Relay / Non-Op.	30G / 7G / 40G
Connection Type	Finger Safe Screw Terminals
Cross Sections Solid / Stranded	#14 to #22 AWG / #16 to #22 AWG
Screw Terminal Torque	0.791 Nm

Analogue Inputs	
Series	MicroLogix 1200
Model	1762-IF2OF2
Format	Expansion Card
Type	0-10V or 4-20mA Selectable
Voltage Input Protection	±30VDC
Current Input Protection	±32mA
Common Mode Voltage Range	±27V
Input Impedance Voltage/Current	200kΩ / 250Ω
Electrical Isolation	500VAC or 707VDC for 1 minute
Resolution	12 bits
Repeatability	±0.1%
Typical Conversion Time	2.5ms
Recommended Cable	Belden 8761 (Screened)

Analogue Outputs	
Series	MicroLogix 1200
Model	1762-IF2OF2
Format	Expansion Card
Type	0-10V or 4-20mA Selectable
Voltage Input Protection	±30VDC
Current Input Protection	±32mA
Common Mode Voltage Range	±27V
Electrical Isolation (peak)	500VAC (707VDC for 1 minute)
Resolution	12 bits
Repeatability	±0.1%
Typical Conversion Time	4.5ms
Recommended Cable	Belden 8761 (Screened)

Digital Inputs	
Format	Main Unit Integrated / Expansion Available
Signal Voltage (0)	0 … 5V
Signal Voltage (1)	10 … 24V
On State Current	7.3 … 8.9mA @ 24VDC
Off State Leakage Current	1.5mA min.
Input Resistance	2.7 … 3.3kΩ

Digital Outputs	
Format	Main Unit Integrated / Expansion Available
Interface Relays	Omron G2R1 24VDC Plug-In
Output Type	Volt Free Clean Contact
Max. Switching Current	10A AC-1
Turn On / Turn Off Time	10msec min. ScanTD

Buzzer	
Buzzer Message	Acknowledge to mute
Buzzer Sound Level	l 92db
Buzzer Frequency	440Hz/880Hz
Buzzer Repetition	Programmable
Buzzer/Alarm Types	Standard Alarm and Medical Gas Alarm
Maintenance Mute	Available within Panel

Terminal Connections	
Manufacturer	Weidmuller
Series	WDU / WPE
Input Terminals	4.0mm Single
Output Terminals	4.0mm Twin
Analogue Terminals	2.5mm Triple
Power Terminals	6.0mm Single min.

Environmental Requirements	
Operating Temperature	0 … 50°C
Operating Humidity	10 … 90%RH NonCon
Storage Temperature	-40 … +85°C

Product legislation and standards of conformity

EU Ref	EU Title	UK Ref	UK Title
2014/ 35/EU	Low Voltage Directive	2016/ 1101	Electrical Equipment (Safety) Regulations 2016
2014/ 30/EU	Electromagnetic Compatibility Directive	2016/ 1091	Electromagnetic Compatibility Regulations 2016
2011/ 65/EU	Restriction of Hazardous Substances (RoHS) Directive	2012/ 3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Reference	Title	Edition
EN 61439-1	Low voltage switchgear and control gear assemblies Part 1. General rules	2012
EN 61439-2	Low voltage switchgear and control gear assemblies. Part 2: Power switchgear and control gear assemblies	2012
EN 61439-1	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	2012 Annex J