Operating and Monitoring Systems
Operator Interface SERIES 200
Device platform RAPTOR
OS ET-208-TX

STAHL

- Operator Interface Operator Station, 7" display, 800 x 480 pixels, projected-capacitive glass touch screen
- Flexible stainless-steel enclosure configuration possible with up to 32 individual buttons
- Robust HMI systems with degree of protection IP66
- Data is transmitted via Ethernet as 10/100Base-TX via CAT5 as well as via two serial interfaces

MY R. STAHL **RAPTOROSA**   ⟨Ex⟩

R. STAHL's OS ET-208-TX operator stations with the RAPTOR device platform are explosion-protected Operator Interfaces for Zones 1, 2, 21 and 22, developed for installation in harsh environments indoors as well as outdoors. Their brilliant 7" widescreen displays with a resolution of 800 x 480 pixels (format 15:9) have a projected-capacitive touch screen. The SS304 or SS316L stainless-steel enclosure is suitable for wall-mounting and can be fitted with up to 4 x 8 individual buttons, according to your requirements. For all versions, RFID readers and barcode scanners expand functionality. The Operator Interfaces run with Windows Embedded Compact 7 (WEC 7), and for visualisation you can choose either Movicon CE or SPSPlus RT. For data transmission, Ethernet as 10/100Base-TX via CAT5 and two serial interfaces are available.

Technical Data

General

Series	RAPTOR Operator Interfaces Operator Stations
Product description	7" Operator Interface
Technology	Operator Interface
HMI type	Operator Station

Explosion Protection

Application range (zones)	1 2 21 22
Application range (divisions)	Class I, Zone 1 Class I, Division 2 Zone 21
Scope	EU (CE / ATEX) International (IECEx) USA (NEC) Canada (CEC) China (CCC / CNEx) Korea (KCC) Korea (KCS) India (PESO / BIS) Japan (JPNEx) Marine / ship certification DNV only AC decives
IECEx certification	IECEx BVS 15.0039X
ATEX certification	BVS 15 ATEX E 042 X
NEC certification	UL E202379

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Explosion Protection

CEC certification	UL E202379
PESO certification	A/P/HQ/TN/104/6230 P541910/1
BIS certification	R-41201782
KCC certification	R-R-RS3-ET208AC R-R-RS3-ET208DC
KCS certification	19-KA4BO-0206X 19-KA4BO-0207X
CCC certification	2020312309000287
CNEX certification	CNEx18.3155X
JPNEx certification	CML 19JPN5469X
DNV certification	TAA00002SK
Notice certification	The certificates and explosion protection markings apply to a standard device combination with display, keyboard and enclosure. These may vary with further installations and extensions.
IECEx gas explosion protection	Ex e ib q [ib] IIC T4 Gb
IECEx dust explosion protection	Ex tb ib [ib] IIIA T115°C Db
ATEX gas explosion protection	II 2 G Ex e ib q [ib] IIC T4 Gb
ATEX dust explosion protection	II 2 D Ex tb ib [ib] IIIA T115°C Db
NEC gas explosion protection	Class I, Zone 1, AEx e ib q [ib] IIC T4 Gb
NEC dust explosion protection	Zone 21, AEx tb ib [ib] IIIA/IIIC T115°C Db
CEC gas explosion protection	Class I, Zone 1, AEx e ib q [ib] IIC T4 Gb
CEC dust explosion protection	Zone 21, AEx tb ib [ib] IIIA/IIIC T115°C Db
PESO explosion protection	Ex eb ib q [ib] IIC T4 Gb
KCS gas explosion protection	Ex e ib q [ib] IIC T4
KCS dust explosion protection	Ex tb ib q [ib] IIIA T115°C
CNEX gas explosion protection	Ex e ib q [ib] IIC T4 Gb
CNEX dust explosion protection	Ex tb ib [ib] IIIA T115°C Db

Electrical Data

Power supply	24 VDC or 230 VAC
Rated operational voltage DC	24 V
Voltage range DC	20.4 ... 28.8 V
Rated operational voltage AC	230 V
Voltage range AC	85 – 253 V
Frequency range	48 – 62 Hz
Power consumption DC	475 during normal operation (890 mA with heater)
Power consumption AC 1	84 mA during normal operation (162 mA with heater)
Rated operational power	12.5 W during normal operation AC 11.4 W during normal operation DC (26 W with heater AC) (21.4 W with heater DC)
Processor type	Cortex A8
Processor details	800 MHz
RAM	512 MB
Data memory	1 GB + 512 MB SSD

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Electrical Data

Memory technology	Flash drive (SSD solid state drive)
Operating system	Windows Embedded Compact 7
Language support	global, multilingual language support
Image	via - SPSPlusWIN project file (SPSPlus RT) - Movicon project file (Movicon CE 4096 I/O)
Additional software	SPSPlusWIN V 6 Progea Movicon11
Ethernet / Data	10/100Base-TX (Ex e)
Data cable	CAT5 installation cable AWG22
Data cable length	max. 100 m
Interface medium	CAT5 Data transmission
Interface USB	1 x USB (Ex ib) 1 x USB (Ex e)
Interface note	The two USB Ex i interfaces (terminals X7 and X8) must not be used at the same time!
Interface serial	2 x RS-422 / 485 (Ex e)
Interface reader	via COM2 RS-422
Interface reader note	RFID reader, support of the following standards: MIFARE Classic, DESFire, DESFire EV1, LEGIC prime and advant, NFC, INSIDE Secure, Sony FeliCa, ISO 14443A & 15693
Connection compartment	Power supply direct in integrated Ex e terminal box
Connections	via screw terminals, green, 2.5 mm² (AWG14) (Ex e)
Further connections	- for the connection of up to 32 potential-free contacts (switches / buttons) - connection for barcode scanner, RFID reader (via ReaderBox)
Wiring	Flexible conductors 0.2 to 2.5 mm² (AWG24 to AWG14) Rigid conductors 0.2 to 2.5 mm² (AWG24 to AWG14)
Plug version USB	1x USB connector type A
Max. input voltage U_m	253 VAC
Real-time clock	yes
Real-time clock data buffer	Capacitor-buffered, maintenance-free
Capacitor buffered	at least 4 days
Status LED	LED´s for: - Ethernet link and activity (green) - Ethernet speed (yellow)

Display

Display version	TFT Colour display (Sunlight viewable)
Display version 2	16.2 million colours
Display size inch	7
Display size centimetres	18
Display resolution	800 x 480
Total pixels	800 x 480
Display dimensions	16:10
Display brightness	500 cd/m²
Display contrast	600:1
Touchscreen	projected capacitive (PCAP)
Touchscreen technology	projected capacitive (PCAP), protected under glass

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Touchscreen activation	capacitive, no activation pressure required
Touchscreen input method	Finger, thin gloved finger or special gloves, conductive stylus
Touchscreen durability	Very good
Touch screen scratch hardness MoHS	7
Touchscreen scratch hardness pencil test ISO15184	9H
Touchscreen transmissivity / optic	very good
Touchscreen surface contaminants	unaffected (may however be affected by conductive fluids such as saltwater)
Touchscreen abrasive resistance	no abrasion by finger or rubber
Backlight	LED Technology
Backlight service life	50000 h at +25 °C
Front plate (display)	Hardened glass front on aluminium
Function keys	optional, via keypad, freely configurable up to 4 x 8 keys
Softkeys	optional, via keypad, freely configurable up to 4 x 8 keys
Cursor keys	optional, via keypad, freely configurable up to 4 x 8 keys
Alphanumeric keys	optional, via keypad, freely configurable up to 4 x 8 keys
System keys	optional, via keypad, freely configurable up to 4 x 8 keys

Software

Number of protocol drivers	a maximum of 4 simultaneously
Number of process images	>1000 dynamic
Number of text messages	dynamically limited by main memory
Number of variables	255 per image
Number of messages	4096 fault messages 4096 operation messages
Font sets	4 independent Windows unicondensed fonts

Ambient Conditions

Heater operation	Automatic
Ambient temperature operation	-40 °C … +60 °C
Storage temperature	-40 °C … +70 °C
Cold start temperature	-20 °C
Temperature note 3	Cold start temperature: If the HMI device is switched on at a temperature below -20 °C the display will need a certain amount of time to warm up until everything is clearly visible. Depending on how low the temperature is, this process may last up to 30 minutes.
Temperature note general	The temperature details apply to a standard device combination with display and enclosure. They may change accordingly with any additional built-in or added components.
Heat dissipation	Cooling via front plate
Relative humidity	90% at +40 °C [+104 °F], without condensation

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Ambient Conditions

Vibration sinus	5 to 500 Hz ±1 mm to 15.76 Hz 1 gn from 15.76 Hz 1 Okt./min. 20 cycles in all 3 axes Axis X, Y, Z
Shock	18 Schocks 15 g / 11 ms 18 Schocks 25 g / 6 ms Axis X, Y, Z
Positive pressure operation	< = 20 mbar

Mechanical Data

Dimensions (WxHxD)	400 mm x 400 mm x 180 mm
Weight	25 kg
Material front	Glass on aluminium / stainless steel
Material back	Stainless steel
Ingress protection	IP69 / IP66
Breather	optional
Mechanical data note	The mechanical data apply to an FR enclosure with built-in display. They may change accordingly with other enclosure types as well as any additional built-in or added components.
Weight	-

Mounting / Installation

Enclosure type	Stainless steel enclosure (FR)
Mounting option	Wall

Components

Keyboard	optional, up to 32 individual keys

We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.

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