Manual
Front panel resistance

ET-xx7
MT-xx7
IT-xx7

Series 400 Panel PC
Series 500 Thin Clients
Series 600 KVM

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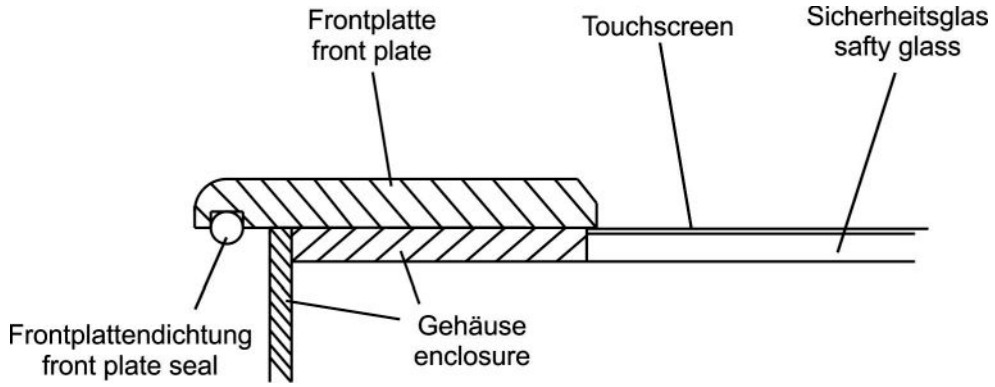
1 Front panel resistance

This manual contains information on the resistance of the HMI devices to various environmental factors. These have an impact on the mechanical, thermal and chemical stability of the HMI devices.

The resistance to chemicals was tested according to DIN 42115 Part 2, i.e. the stability over 24 hours without visible changes to the HMI devices.

2 Mechanical structure



3 Materials

Application	Material
Front plate *	Aluminium
Touch screen	Polyester or glass
Display window	Safety glass
Enclosure	Steel, galvanised **
Front panel seal	Polyurethane

* The RM (rear mount module) devices did not have a front plate.
** The enclosures of the IT devices are made of Aluminium.

3.1 Material properties

☞ The selection of chemicals listed here is not exhaustive.

3.1.1 Touch foil (Polyester)

Property	Chemical material class / group	Chemical substances	Test method
Chemical • Chemical resistance	Alcohols	1,3 Butanediol 1,4 Butanediol Cyclohexanol Diacetone alcohol Ethanol Glycol Glycerol Isopropyl alcohol Methanol Neopentyl glycol Octanol 1,2 Propylene glycol	DIN 42115 DIN 53 461 or ASTM-F-1598-95

		Triacetin Dowandol DRM/PM
	Aldehydes	Acetaldehyde Formaldehyde 37 - 42 %
	Amines	Ammonia < 2 %
	Esters	Amyl acetate Ethylacetate N-Butyl acetate
	Ethers	1.1.1. Trichloroethane Ether Dioxane Diethyl ether 2-Methyltetrahydrofuran (2-ME-THF)
	Aromatic hydrocarbons	Benzene Toluene Xylene Paint thinner (white spirit)
	Ketones	Acetone Methyl ethyl ketone Cyclohexanone Methyl isobutyl ketone (MIBK) Isophorone
	Diluted acids	Formic acid <50 % Acetic acid < 5 % Phosphoric acid <30 % Hydrochloric acid <10 % Nitric acid <10 % Trichloroacetic acid <50 % Sulfuric acid <30 %
	Diluted alkaloids (bases)	Caustic soda <40 %
	Household chemicals	Ajax Ariel Domestos Downey Fantastic Formula 409 Gumption Jet Dry Lenor Persil Tenside Top Jop Vim Vortex Washing powder Fabric conditioner Whis Windex

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	Oils	Petrol Drilling muds Braking fluid Decon foam Diesel oil Varnish Keroflux Paraffin oil Castor oil Silicone oil Solvent naphta Mineral turpentine Kerosene
	No specific material class	Acetonitrile Alkali carbonate Dichromates Potassium dichromate Caustic soda <20 % Dibutyl phthalate Dioctyl phthalate Iron II chloride ($FeCl_2$) Iron II chloride ($FeCl_3$) Haloalkanes Potassium soap Potassium hydroxide <30 % Sodium bisulfate Tetrachloroethylene Salt water Trichloroethylene Water Hydrogen peroxide >25 %

Property	**Resistance**	**Test method**
Mechanic (touch screen) • point activation	1 million activations at any single point	3M method
Thermal • Dimensional • Dimension stability	Max. 0.2 % at 120° longitudinal Typically 0.1 %	Autotype method

3.1.2 Front panel seal

Property	Chemical material class / group	Chemical substances	Test method
Chemical • Chemical resistance	Alcohols	Glycerol	DIN 53461
	Aldehydes	Formaldehyde	
	Ketones	Acetone	
	Household chemicals	Detergents Soap suds	
	Oils	Petrol Diesel oil Fuel oil Hydraulic oil Linseed oil	
Property	**Resistance**		**Test method**
Mechanical	(No information available at present)		
Thermal • Installation area	-30 °C to 80 °C		DIN 53461

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4 Release notes

The chapter entitled "Release Notes" contains all the changes made in every version of this document.

Version 01.00.00

- First edition of the manual
- Addition of the information from the operating instructions
- Revision of graphic and text

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