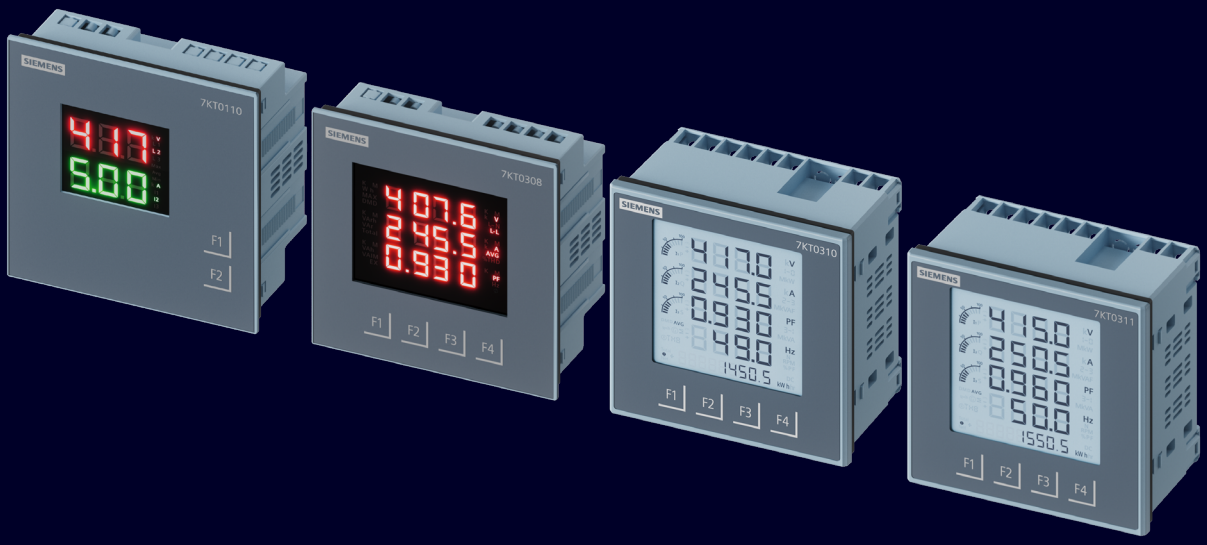
SIEMENS

SMART 7KT power monitoring devices

SINOVA The Power of **Simplicity**

Discover The Power of **Simplicity** with SINOVA

Backed by Siemens quality standards, SINOVA introduces exceptional ease of operation and cost-efficiency to electrical installations in buildings, utilities, industries, and infrastructure applications. Our low-voltage electrical products offer protection, control, switching, and metering capabilities that help promote efficiency across the value chain, optimizing OPEX, CAPEX, and reducing environmental impact. We are continuously driven to innovate and provide simple and reliable solutions. Inspired by efficiency and simplicity, we strive to empower industry professionals to streamline processes and complete projects quicker every time.



SMART 7KT power monitoring devices

Product **highlights**

Easy to use

Our devices feature tool-free setup with ClickFit installation, easy-to-read displays, and intuitive interfaces, ensuring a seamless user experience.

Comprehensive

Our multifunction and discrete panel meters are designed to meet all your energy monitoring needs, enabling informed decisions to optimize energy usage across diverse industries and applications.

Reliable

Our RoHs compliant power monitoring devices provide precise measurement and accurate data, meeting IEC 61557-12 and IEC 62053 standards.

SINOVA The Power of **Simplicity**

Overview

Multifunction meters

7KT0307
Single line LED display Class 1

7KT0308
Multi line LED display Class 1

7KT0310
LCD display Class 1

7KT0311
LCD display Class 0.5

Discrete panel meters

7KT0110
VA meter

7KT0120
VAF meter

7KT0210
3-phase energy meter

Simplifying energy monitoring

Our power monitoring devices make installation easy, offer accurate data for measurement and monitoring, and enable predictive maintenance scheduling to enhance electrical system performance.

1 Measure

- **Accurate as per IEC 61557-12 and IEC 62053 standards**

Measure with confidence

Our devices, with best-in-class accuracy, offer key energy measurement parameters and essential power quality indicators that meet industry standards, both locally and internationally.

2 Monitor

- **Large displays with high brightness**
- **Integrated communication ports**

Monitor with ease

Our devices feature bright, clear digital displays and integrated communication ports, simplifying the monitoring and assessment of vital energy parameters and power quality indicators, such as the Total Harmonics Distortion (THD) value of a load.

3 Improve

- **System efficiency**
- **CAPEX & OPEX**

Improve efficiency

Our devices enable continuous monitoring of electrical systems, helping you assess and implement effective predictive maintenance strategies to enhance power quality. This reduces supply interruptions and equipment failures, leading to improved efficiency, less downtime, and increased productivity.

Key applications

Our power monitoring devices are essential components used across diverse industries and applications to monitor and display crucial electrical parameters.

These devices play a pivotal role in energy management by supporting the power quality of electrical systems. The real-time data provided by our devices not only enables you to evaluate the quality of power consumed by your equipment, but also identify issues and schedule preventive maintenance that reduce power disruptions and prevent equipment failure.

Infrastructure

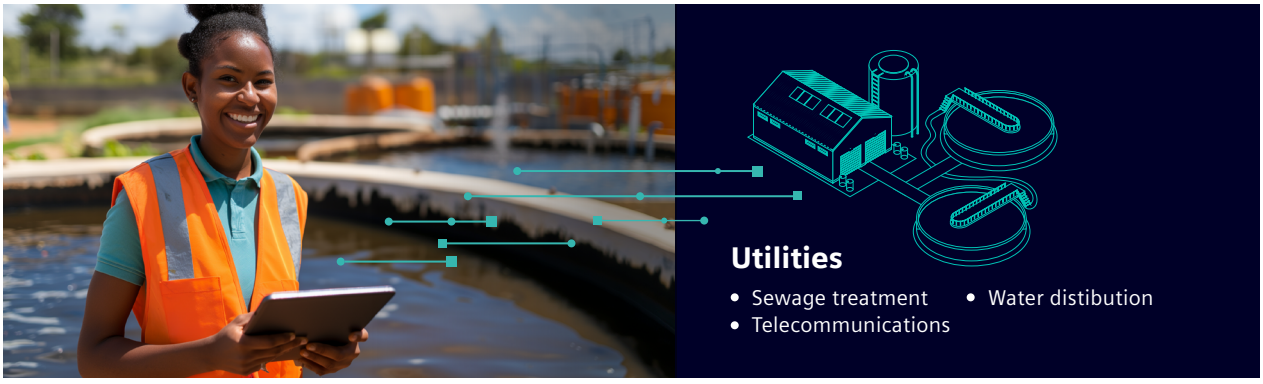
- Train stations
- Bus stations
- Roads
- Street lighting

Building management systems

- Shopping malls
- Office buildings
- Hospitals
- Residential (high-rise)

Industrial

- Process industries
- OEM machinaries
- Power plants



Utilities

- Sewage treatment
- Telecommunications
- Water distibution

Multifunction meters

Our range of multifunction meters ensures accurate measurement of all electrical parameters required for ISO 50001 compliant energy management systems.

They also offer additional power quality indicators, such as the THD value, which help assess a load's impact on the electrical system.

Accessible via integrated communication ports, this data enables predictive maintenance planning that prevents equipment downtime and reduces maintenance costs.

Features

Site-settable CT and PT ratios to reduce inventory

Measurement of

30x

electrical parameters

Four-quadrant measurement for **comprehensive energy management**

Tool-free ClickFit arrangement for easy installation

Modern aesthetics with soft touch keys

RoHS compliant

Integrated Modbus RTU communication

IEC

Tested accuracy as per IEC standards:
IEC 61557-12 / IEC 62053-21 / IEC 62053-22 / IEC 62053-23

Overview

Multifunction meters

				
Parameters	**7KT0307**	**7KT0308**	**7KT0310**	**7KT0311**
Description	Single line LED Class 1	Multi line LED Class 1	LCD Class 1	LCD Class 0.5s
Accuracy	Class 1 (active energy)			Class 0.5s (active energy)
Measured parameters	All parameters			
Power quality indicators measured	-	THD, individual harmonics*		
Display	Single line LED	Multi line LED	LCD with graphic display	
Digital Input (DI) / Digital Output (DO)	-	1 DI		1 DI (dual source) + 1 DO
Communication protocol	Modbus RTU			
Import / Export	Yes			

Accurate measurement of electrical parameters for ISO 50001 compliant energy management.

Note: * = via communication

Technical specifications

7KT0307 (Single line LED Class 1)

Measurements	
Measuring procedure for • Voltage measurement • Current measurement	 True RMS True RMS
Type of measured value detection	Complete
Voltage curve	Sinusoidal or distorted
Measurable line frequency • Initial value • Full-scale value	 45Hz 65Hz
Operating mode for measured value detection • Automatic line frequency detection	 Yes
Supply voltage	
Design of the power supply	SMPS power supply
Type of voltage of the supply voltage	AC
Degree of protection class	
Protection class IP on the front	IP54
Protection class IP of the terminal	IP20
Product functions	
• Voltage measurement • Current measurement • Active power measurement • Reactive power measurement • Apparent power measurement • Power factor measurement • Frequency measurement • Apparent energy/active energy/reactive energy	Yes
Display and operation	
Display design	LED
Display height	22mm
Display width	69mm
Display background color	Black
Display supported screen language	EN
Number of keys	2

Technical specifications

7KT0307 (Single line LED Class 1)

Fault limits	
Reference condition for metering accuracy	In accordance with IEC 61557-12, IEC 62053-21, IEC62053-23
Formula for relative total measurement inaccuracy for • Measured variable voltage • Measured variable current • Measured variable apparent power • Measured variable active power • Measured variable reactive power • Measured variable power factor • Measured variable active energy • Measured variable reactive energy	 Class 0.5 as per IEC 61557-12 Class 0.5 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 2 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 1 as per IEC 62053-21 and IEC 61557-12 Class 2 as per IEC 61557-12 and IEC 62053-23
Measuring inputs	
Measurable supply voltage between L and N at AC maximum rated value	240V
Measurable supply voltage between L and N at AC • Minimum • Maximum	 11V 300V
Measurable supply voltage between the line conductors at AC maximum rated value	415V
Measurable supply voltage between the line conductors at AC • Minimum • Maximum	 19V 519V
Voltage measuring range extension with external voltage transformers	Up to 500kV
Line conductors and neutral conductors internal resistance for voltage measurement	1.12 MΩ
Measurable current	1A/5A
Relative measurable current at AC • Minimum • Maximum	 1% 120%
Current measuring range extension with external current transformers	Up to 10kA
Measuring category for current measurement	CAT III
Connections	
Type of electrical connection at the: • Measurement inputs for voltage • Measurement inputs for current	 Screw-type terminals
Communication	
Protocol	Modbus RTU

Technical specifications

7KT0307 (Single line LED Class 1)

Mechanical design	
Mounting	Flush panel-door mounted
Size of power monitoring device	Size 96
Height	99mm
Width	99mm
Cut-out	91.5mm x 91.5mm
Depth	52mm
Installation depth	49mm
Net weight	228g
Mounting position	Vertical
Environmental conditions	
Ambient temperature during operation • Minimum • Maximum	 -10°C 55°C
Ambient temperature during storage • Minimum • Maximum	 -20°C 75°C
Relative humidity at 25°C without condensation during operation maximum	85%
Installation altitude at height above sea level maximum	2000m
Degree of pollution	2

IEC standards		
Description	Standard	Certifications
Accuracy	IEC 61557-12; IEC 62053-21 | Active energy	SMART 7KT multifunction meter conforms to IEC standards, IPC electronics assembly standards, and RoHS
EMC requirements	IEC 61326-1	
Degree of protection test (IP)	IEC 60529	
Safety requirements	IEC 61010-1 and IEC 61010-2-030	

Technical specifications

7KT0308 (Multi line LED Class 1)

Measurements	
Measuring procedure for • Voltage measurement • Current measurement	 True RMS True RMS
Type of measured value detection	Complete
Voltage curve	Sinusoidal or distorted
Measurable line frequency • Initial value • Full-scale value	 45Hz 65Hz
Operating mode for measured value detection • Automatic line frequency detection	Yes
Supply voltage	
Design of the power supply	SMPS power supply
Type of voltage	AC
Degree of protection class	
Protection class IP on the front	IP54
Protection class IP of the terminal	IP20
Product functions	
• Voltage measurement • Current measurement • Active power measurement • Reactive power measurement • Apparent power measurement • Power factor measurement • Frequency measurement • Apparent energy/active energy/reactive energy • % Total Harmonics Distortion (THD) • Individual harmonics measurement via communication • Power demand measurement	Yes
Display and operation	
Display design	LED
Display height	48mm
Display width	62mm
Display background color	Black
Display supported screen language	EN
Number of keys	4

Technical specifications

7KT0308 (Multi line LED Class 1)

Fault limits	
Reference condition for metering accuracy	In accordance with IEC 61557-12, IEC 62053-21, IEC 62053-23
Formula for relative total measurement inaccuracy for: • Measured variable voltage • Measured variable current • Measured variable apparent power • Measured variable active power • Measured variable reactive power • Measured variable power factor • Measured variable active energy • Measured variable reactive energy	 Class 0.5 as per IEC 61557-12 Class 0.5 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 2 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 1 as per IEC 61557-12 and IEC 62053-21 Class 2 as per IEC 61557-12 and IEC 62053-23
Inputs/Outputs	
Number of digital inputs	1
Type of electrical connection at the digital inputs	Screw-type terminals
Operating conditions for digital inputs external voltage supply	Yes
Input voltage at digital input at DC maximum	30V
Input current at digital input initial value for signal<1>recognition	10mA
Measuring inputs	
Measurable supply voltage between L and N at AC maximum rated value	240V
Measurable supply voltage between L and N at AC • Minimum • Maximum	 11V 300V
Measurable supply voltage between the line conductors at AC maximum rated value	415V
Measurable supply voltage between the line conductors at AC • Minimum • Maximum	 19V 519V
Voltage measuring range extension with external voltage transformers	Up to 500kV
Line conductors and neutral conductors internal resistance for voltage measurement	1.12 MΩ
Measurable current	1A/5A
Relative measurable current at AC • Minimum • Maximum	 1% 120%
Current measuring range extension with external current transformers	Up to 10kA
Measuring category for current measurement	CAT III

Technical specifications

7KT0308 (Multi line LED Class 1)

Connections	
Type of electrical connection at the • Measurement inputs for voltage • Measurement inputs for current	Screw-type terminals
Communication	
Protocol	Modbus RTU
Mechanical design	
Mounting	Flush panel-door mounted
Size of power monitoring device	Size 96
Height	99mm
Width	99mm
Cut-out	91.5mm x 91.5mm
Depth	52mm
Installation depth	49mm
Net weight	247g
Mounting position	Vertical
Environmental conditions	
Ambient temperature during operation • Minimum • Maximum	 -10°C 55°C
Ambient temperature during storage • Minimum • Maximum	 -20°C 75°C
Relative humidity at 25°C without condensation during operation maximum	85%
Installation altitude at height above sea level maximum	2000m
Degree of pollution	2

IEC standards		
Description	Standard	Certifications
Accuracy	IEC 61557-12; IEC 62053-21 | Active energy	SMART 7KT multifunction meter conforms to IEC standards, IPC electronics assembly standards, and RoHS
EMC requirements	IEC 61326-1	
Degree of protection test (IP)	IEC 60529	
Safety requirements	IEC 61010-1 and IEC 61010-2-030	

Technical specifications

7KT0310 (LCD Class 1)

Measurements	
Measuring procedure for • Voltage measurement • Current measurement	 True RMS True RMS
Type of measured value detection	Complete
Voltage curve	Sinusoidal or distorted
Measurable line frequency • Initial value • Full-scale value	 45Hz 65Hz
Operating mode for measured value detection • Automatic line frequency detectiont	Yes
Supply voltage	
Design of the power supply	SMPS power supply
Type of voltage of the supply voltage	AC
Degree of protection class	
Protection class IP on the front	IP65
Protection class IP of the terminal	IP20
Suitability	
For operation	Installation in stationary panels in closed rooms
Product functions	
• Voltage measurement • Current measurement • Active power measurement • Reactive power measurement • Apparent power measurement • Power factor measurement • Frequency measurement • Apparent energy/active energy/reactive energy • % Total Harmonics Distortion (THD) measurement for voltage and current • Individual harmonics measurement via communication • Power demand measurement	Yes
Display and operation	
Display design	LCD with graphical display of current loading
Display height	60mm
Display width	60mm
Display background color	White
Time-controlled reduction of the illuminance of display backlight possible	Yes, up to 2 hrs. (7200 sec)

Technical specifications

7KT0310 (LCD Class 1)

Display and operation	
Display supported screen language	EN
Number of keys	4
Accuracy	
Reference condition for metering accuracy	In accordance with IEC62053-21, IEC 62053-23
Formula for relative total measurement inaccuracy for • Measured variable voltage • Measured variable current • Measured variable frequency • Measured variable power factor • Measured variable active energy • Measured variable reactive energy	 ± 0.5% of full scale ± 0.5% of full scale ± 0.1% ± 0.01% digit Class 1 as per IEC 62053-21 Class 2 as per IEC 62053-23
Inputs	
Number of digital inputs	1
Type of electrical connection at the digital inputs	Screw-type terminals
Operating conditions for digital inputs external voltage supply	Yes
Input voltage at digital input at DC maximum	30V
Input current at digital input initial value for signal<1>recognition	10mA
Measuring inputs	
Measurable supply voltage between L and N at AC maximum rated value	240V
Measurable supply voltage between L and N at AC • Minimum • Maximum	 11V 300V
Measurable supply voltage between the line conductors at AC maximum rated value	415V
Measurable supply voltage between the line conductors at AC • Minimum • Maximum	 19V 519V
Voltage measuring range extension with external voltage transformers	Up to 500kV
Line conductors and neutral conductors internal resistance for voltage measurement	1.12 MΩ
Measuring category for voltage measurement	CAT III
Measurable current	1A/5A
Relative measurable current at AC • Minimum • Maximum	 1% 120%
Current measuring range extension with external current transformers	Up to 10kA
Measuring category for current measurement	CAT III

Technical specifications

7KT0310 (LCD Class 1)

Connections	
Type of electrical connection at the • Measurement inputs for voltage • Measurement inputs for current	Screw-type terminals
Communication	
Protocol	Modbus RTU
Mechanical design	
Mounting	Flush panel-door mounted
Size of power monitoring device	Size 96
Height	96mm
Width	96mm
Cut-out	91.5mm x 91.5mm
Depth	55mm
Installation depth	51mm
Net weight	325g
Environmental conditions	
Ambient temperature during operation • Minimum • Maximum	 -10°C 55°C
Ambient temperature during storage • Minimum • Maximum	 -20°C 75°C
Relative humidity at 25°C without condensation during operation maximum	85%
Installation altitude at height above sea level maximum	2000m
Degree of pollution	2

IEC standards

Description	Standard	Certifications
Accuracy	IEC 62053-21 | Active energy	SMART 7KT multifunction meter conforms to IEC standards, IPC electronics assembly standards, and RoHS
EMC requirements	IEC 61326-1	
Degree of protection test (IP)	IEC 60529	
Safety requirements	IEC 61010-1 and IEC 61010-2-030	
Vibration and mechanical shock	IEC 62052-11	

Technical specifications

7KT0311 (LCD Class 0.5s)

Measurements	
Measuring procedure for • Voltage measurement • Current measurement	 True RMS True RMS
Type of measured value detection	Complete
Voltage curve	Sinusoidal or distorted
Measurable line frequency • Initial value • Full-scale value	 45Hz 65Hz
Operating mode for measured value detection • Automatic line frequency detectiont	Yes
Supply voltage	
Design of the power supply	SMPS power supply
Type of voltage of the supply voltage	AC
Degree of protection class	
Protection class IP on the front	IP65
Protection class IP of the terminal	IP20
Suitability	
For operation	Installation in stationary panels in closed rooms
Product functions	
• Voltage measurement • Current measurement • Active power measurement • Reactive power measurement • Apparent power measurement • Power factor measurement • Frequency measurement • Apparent energy/active energy/reactive energy • Individual harmonics via communication • Power demand measurement	Yes

Technical specifications

7KT0311 (LCD Class 0.5s)

Display and operation	
Display design	LCD with graphical display of current loading
Display height	60mm
Display width	60mm
Display background color	White
Time-controlled reduction of the illuminance of display backlight possible	Yes, up to 2 hrs. (7200 sec)
Display supported screen language	EN
Number of keys	4
Accuracy	
Reference condition for metering accuracy	In accordance with IEC 61557-12, IEC 62053-22, IEC 62053-23
Formula for relative total measurement inaccuracy for • Measured variable voltage • Measured variable current • Measured variable apparent power • Measured variable active power • Measured variable reactive power • Measured variable power factor • Measured variable active energy • Measured variable reactive energy	 Class 0.5 as per IEC 61557-12 Class 0.5 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 2 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 0.5 as per IEC 61557-12 and Class 0.5s as per IEC 62053-22 Class 2 as per IEC 61557-12 and IEC 62053-23
Inputs/Outputs	
Number of digital inputs	1
Type of electrical connection at the digital inputs	Screw-type terminals
Operating conditions for digital inputs extermal voltage supply	Yes
Input voltage at digital input at DC maximum	30V
Input current at digital input initial value for signal<1>recognition	10mA
Number of digital outputs	1
Type of switching output	Unidirectional
Digital output version	Switching or pulse output function
Operating voltage as output voltage at DC maximum permissible	30V
Type of electrical connection at the digital outputs	Screw-type terminals
Output current at the digital outputs at DC limited to 100 mc maximum	130mA
Internal resistance at the digital outputs	55Ω
Standard for pulse emitter	According to IEC 62053-31

Technical specifications

7KT0311 (LCD Class 0.5s)

Inputs/Outputs	
Pulse duration • Initial value • Full-scale value	 100ms 2s
Adjustable time period minimum	100ms
Switching frequency at digital output maximum	17Hz
Measuring inputs	
Measurable supply voltage between L and N at AC maximum rated value	240V
Measurable supply voltage between L and N at AC • Minimum • Maximum	 11V 300V
Measurable supply voltage between the line conductors at AC maximum rated value	415V
Measurable supply voltage between the line conductors at AC • Minimum • Maximum	 19V 519V
Voltage measuring range extension with external voltage transformers	Up to 500kV
Line conductors and neutral conductors internal resistance for voltage measurement	1.12 MΩ
Measuring category for voltage measurement	CAT III
Measurable current	1A/5A
Relative measurable current at AC • Minimum • Maximum	 1% 120%
Current measuring range extension with external current transformers	Up to 10kA
Measuring category for current measurement	CAT III
Connections	
Type of electrical connection at the • Measurement inputs for voltage • Measurement inputs for current	 Screw-type terminals
Communication	
Protocol	Modbus RTU

Technical specifications

7KT0311 (LCD Class 0.5s)

Mechanical design	
Mounting	Flush panel-door mounted
Size of power monitoring device	Size 96
Height	96mm
Width	96mm
Cut-out	91.5mm x 91.5mm
Depth	55mm
Installation depth	51mm
Net weight	325g
Environmental conditions	
Ambient temperature during operation • Minimum • Maximum	 -10°C 55°C
Ambient temperature during storage • Minimum • Maximum	 -20°C 75°C
Relative humidity at 25°C without condensation during operation maximum	85%
Installation altitude at height above sea level maximum	2000m
Degree of pollution	2

IEC standards		
Description	Standard	Certifications
Energy accuracy	IEC 61557-12, IEC 62053-21 | Active energy	SMART 7KT multifunction meter conforms to IEC standards, IPC electronics assembly standards, and RoHS
EMC requirements	IEC 61326-1	
Degree of protection test (IP)	IEC 60529	
Safety requirements	IEC 61010-1 and IEC 610102-030	
Vibration and mechanical shock	IEC 62052-11	

Selection & ordering data

SMART 7KT multifunction meters

Product image	Description	Features	Article no.	List price per PU (Per Unit)	Status
	Single line LED Class 1 accuracy Modbus RTU	• Bright single-line LED display for easy visualization of essential energy parameters. • An integrated communication port to communicate with energy management software.	7KT0307		
	Multi line LED Class 1 accuracy Modbus RTU	• Large multi-line LED display for easy visualization of essential energy parameters. • An integrated communication port to communicate with energy management software.	7KT0308		
	Multi line LCD Class 1 accuracy Modbus RTU	• Large backlit LCD display for easy visualization of power quality indicators. • Integrated Digital Input (DI) to communicate field signals without additional hardware.	7KT0310		
	Multi line LCD Class 0.5s accuracy Modbus RTU	• Large backlit LCD display for easy visualization of power quality indicators. • Configurable Digital Input (DI) and Digital Output (DO) ports for simplified load management.	7KT0311		

Discrete panel meters

Our discrete panel meters are excellent for displaying vital energy parameters such as voltage, current, and frequency.

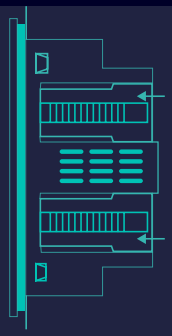
The large, multi-colored LEDs and LCD screens with bright backlit displays ensure outstanding visibility.

Additionally, our 3-phase energy meters provide reliable monitoring in dual-source energy scenarios with integrated communication ports that simplify on-site energy monitoring.

Features

Dual source
energy management

Multiline LED and bright backlit LCD displays
for clear data visualization



Tool-free ClickFit arrangement
for easy installation

Modern aesthetics with soft touch keys

RoHS compliant

Integrated Modbus RTU communication

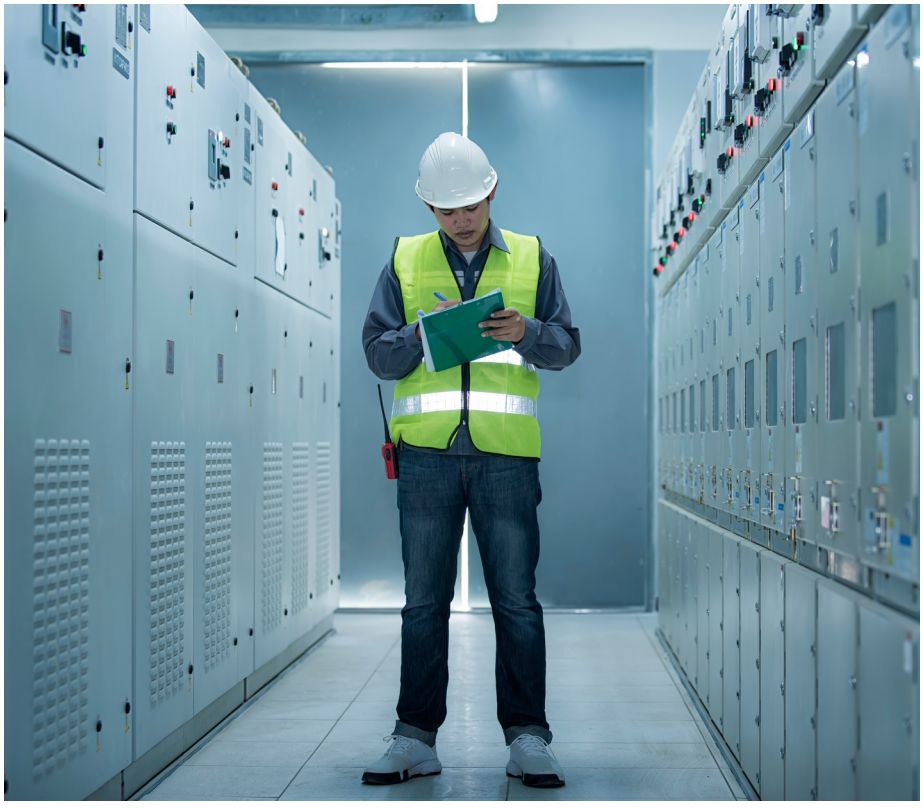
IEC

Tested accuracy as per IEC standards:
IEC 61557-12 / IEC 62053-21

Overview

Discrete panel meters

			
Parameters	**7KT0110**	**7KT0120**	**7KT0210**
Description	VA meter	VAF meter	3-phase energy meter
Accuracy	Class 1 (voltage & current)		Class 1 (active energy)
Measured parameters	Voltage, current	Voltage, current, frequency	Energy (dual source), power, power factor
Display	Multi line LED with two distinct colors	Multi line LED	Single line LCD
Digital Input (DI) / Digital Output (DO)	-		1 DI (dual source)
Communication protocol	-		Modbus RTU



Precise energy recording in dual-source energy scenarios.

Technical specifications

7KT0110 (VA meter)

Measurements	
Measuring procedure for • Voltage measurement • Current measurement	 True RMS True RMS
Type of measured value detection	Complete
Voltage curve	Sinusoidal or distorted
Measurable line frequency • Initial value • Full-scale value	 45Hz 65Hz
Operating mode for measured value detection • Automatic line frequency detectiont	-
Supply voltage	
Design of the power supply	SMPS power supply
Type of voltage of the supply voltage	AC
Degree of protection class	
Protection class IP on the front	IP54
Protection class IP of the terminal	IP20
Suitability	
For operation	Installation in stationary panels in closed rooms
Product functions	
• Voltage measurement • Current measurement	Yes Yes
Display and operation	
Display design	LED
Display height	39mm
Display width	40.5mm
Display background color	Black
Display supported screen language	EN
Number of keys	2

Technical specifications

7KT0110 (VA meter)

Accuracy	
Reference condition for metering accuracy	In accordance with IEC 61557-12
Formula for relative total measurement inaccuracy for • Measured variable voltage • Measured variable current	 Class 1 as per IEC 61557-12 Class 1 as per IEC 61557-12
Measuring inputs	
Measurable supply voltage between L and N at AC maximum rated value	240V
Measurable supply voltage between L and N at AC • Minimum • Maximum	 11V 300V
Measurable supply voltage between the line conductors at AC maximum rated value	415V
Measurable supply voltage between the line conductors at AC • Minimum • Maximum	 19V 519V
Voltage measuring range extension with external voltage transformers	Up to 500kV
Line conductors and neutral conductors internal resistance for voltage measurement	1.12 MΩ
Measurable current	1A/5A
Relative measurable current at AC • Minimum • Maximum	 1% 120%
Current measuring range extension with external current transformers	Up to 10kA
Measuring category for current measurement	CAT III
Connections	
Type of electrical connection at the • Measurement inputs for voltage • Measurement inputs for current	 Screw-type terminals

Technical specifications

7KT0110 (VA meter)

Mechanical design	
Mounting	Flush panel-door mounted
Size of power monitoring device	Size 96
Height	99mm
Width	99mm
Cut-out	91.5mm x 91.5mm
Depth	52mm
Installation depth	49mm
Net weight	207g
Mounting position	Vertical
Environmental conditions	
Ambient temperature during operation • Minimum • Maximum	 -10°C 55°C
Ambient temperature during storage • Minimum • Maximum	 -20°C 75°C
Relative humidity at 25°C without condensation during operation maximum	85%
Installation altitude at height above sea level maximum	2000m
Degree of pollution	2

IEC standards		
Description	Standard	Certifications
Accuracy	IEC 61557-12	SMART 7KT discrete panel meter conforms to IEC standards, IPC electronics assembly standards, and RoHS
EMC requirements	IEC 61326-1	
Degree of protection test (IP)	IEC 60529	
Safety requirements	IEC 61010-1 and IEC 61010-2-030	

Technical specifications

7KT0120 (VAF meter)

Measurements	
Measuring procedure for • Voltage measurement • Current measurement	 True RMS True RMS
Type of measured value detection	Complete
Voltage curve	Sinusoidal or distorted
Measurable line frequency • Initial value • Full-scale value	 45Hz 65Hz
Operating mode for measured value detection • Automatic line frequency detectiont	Yes
Supply voltage	
Design of the power supply	SMPS power supply
Type of voltage of the supply voltage	AC
Degree of protection class	
Protection class IP on the front	IP54
Protection class IP of the terminal	IP20
Suitability	
For operation	Installation in stationary panels in closed rooms
Product functions	
• Voltage measurement • Current measurement • Frequency measurement	Yes Yes Yes
Display and operation	
Display design	LED
Display height	50mm
Display width	45.4mm
Display background color	Black
Display supported screen language	EN
Number of keys	2

Technical specifications

7KT0120 (VAF meter)

Accuracy	
Reference condition for metering accuracy	In accordance with IEC 61557-12
Formula for relative total measurement inaccuracy for • Measured variable voltage • Measured variable current • Measured variable frequency	 Class 1 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 0.1 as per IEC 61557-12
Measuring inputs	
Measurable supply voltage between L and N at AC maximum rated value	240V
Measurable supply voltage between L and N at AC • Minimum • Maximum	 11V 300V
Measurable supply voltage between the line conductors at AC maximum rated value	415V
Measurable supply voltage between the line conductors at AC • Minimum • Maximum	 19V 519V
Voltage measuring range extension with external voltage transformers	Up to 500kV
Line conductors and neutral conductors internal resistance for voltage measurement	1.12 MΩ
Measuring category for voltage measurement	CAT II
Measurable current	1A/5A
Relative measurable current at AC • Minimum • Maximum	 1% 120%
Current measuring range extension with external current transformers	Up to 10kA
Measuring category for current measurement	CAT III
Measurable line frequency	45 - 65 Hz
Connections	
Type of electrical connection at the • Measurement inputs for voltage • Measurement inputs for current	 Screw-type terminals

Technical specifications

7KT0120 (VAF meter)

Mechanical design	
Mounting	Flush panel-door mounted
Size of power monitoring device	Size 96
Height	99mm
Width	99mm
Cut-out	91.5mm x 91.5mm
Depth	52mm
Installation depth	49mm
Net weight	223g
Mounting position	Vertical
Environmental conditions	
Ambient temperature during operation • Minimum • Maximum	 -10°C 55°C
Ambient temperature during storage • Minimum • Maximum	 -20°C 75°C
Relative humidity at 25°C without condensation during operation maximum	85%
Installation altitude at height above sea level maximum	2000m
Degree of pollution	2

IEC standards		
Description	Standard	Certifications
Accuracy	IEC 61557-12	SMART 7KT discrete panel meter conforms to IEC standards, IPC electronics assembly standards, and RoHS
EMC requirements	IEC 61326-1	
Degree of protection test (IP)	IEC 60529	
Safety requirements	IEC 61010-1 and IEC 61010-2-030	

Technical specifications

7KT0210 (3-phase energy meter)

Measurements	
Measuring procedure for • Voltage measurement • Current measurement	 True RMS True RMS
Type of measured value detection	Complete
Voltage curve	Sinusoidal or distorted
Measurable line frequency • Initial value • Full-scale value	 45Hz 65Hz
Operating mode for measured value detection • Automatic line frequency detectiont	Yes
Supply voltage	
Design of the power supply	SMPS power supply
Type of voltage of the supply voltage	AC
Degree of protection class	
Protection class IP on the front	IP54
Protection class IP of the terminal	IP20
Suitability	
For operation	Installation in stationary panels in closed rooms
Product functions	
• Voltage measurement • Current measurement • Active power measurement • Reactive power measurement • Apparent power measurement • Power factor measurement • Frequency measurement • Apparent energy/active energy/reactive energy	Yes
Display and operation	
Display design	LCD
Display height	19mm
Display width	75mm
Display background color	White
Display supported screen language	EN
Number of keys	2

Technical specifications

7KT0210 (3-phase energy meter)

Fault limits	
Reference condition for metering accuracy	In accordance with IEC 61557-12, IEC 62053-21, IEC 62053-23
Formula for relative total measurement inaccuracy for • Measured variable voltage • Measured variable current • Measured variable apparent power • Measured variable active power • Measured variable reactive power • Measured variable power factor • Measured variable active energy • Measured variable reactive energy	 Class 0.5 as per IEC 61557-12 Class 0.5 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 2 as per IEC 61557-12 Class 1 as per IEC 61557-12 Class 1 as per IEC 62053-21 and IEC 61557-12 Class 2 as per IEC 61557-12 and IEC 62053-23
Inputs/Outputs	
Number of digital inputs	1
Type of electrical connection at the digital inputs	Screw-type terminals
Operating conditions for digital inputs external voltage supply	Yes
Input voltage at digital input at DC maximum	30V
Input current at digital input initial value for signal<1>recognition	10mA
Measuring inputs	
Measurable supply voltage between L and N at AC maximum rated value	240V
Measurable supply voltage between L and N at AC • Minimum • Maximum	 11V 300V
Measurable supply voltage between the line conductors at AC maximum rated value	415V
Measurable supply voltage between the line conductors at AC • Minimum • Maximum	 19V 519V
Voltage measuring range extension with external voltage transformers	Up to 500kV
Line conductors and neutral conductors internal resistance for voltage measurement	1.12 MΩ
Measuring category for voltage measurement	CAT III
Measurable current	1A/5A
Relative measurable current at AC • Minimum • Maximum	 1% 120%
Current measuring range extension with external current transformers	Up to 10kA
Measuring category for current measurement	CAT III

Technical specifications

7KT0210 (3-phase energy meter)

Connections	
Type of electrical connection at the • Measurement inputs for voltage • Measurement inputs for current	Screw-type terminals
Communication	
Protocol	Modbus RTU
Mechanical design	
Mounting	Flush panel-door mounted
Size of power monitoring device	Size 96
Height	99mm
Width	99mm
Cut-out	91.5mm x 91.5mm
Depth	56.9mm
Installation depth	51.6mm
Net weight	234g
Mounting position	Vertical
Environmental conditions	
Ambient temperature during operation • Minimum • Maximum	 -10°C 55°C
Ambient temperature during storage • Minimum • Maximum	 -20°C 75°C
Relative humidity at 25°C without condensation during operation maximum	85%
Installation altitude at height above sea level maximum	2000m
Degree of pollution	2

IEC standards

Description	Standard	Certifications
Accuracy	IEC 61557-12; IEC 62053-21 | Active energy	SMART 7KT discrete panel meter conforms to IEC standards, IPC electronics assembly standards, and RoHS
EMC requirements	IEC 61326-1	
Degree of protection test (IP)	IEC 60529	
Safety requirements	IEC 61010-1 and IEC 61010-2-030	

Selection & ordering data

SMART 7KT discrete panel meters

Product image	Description	Features	Article no.	List price per PU (Per Unit)	Status
	VA meter	• Bright multi-colored LED display for easy identification of voltage and current parameters.	7KT0110		
	VAF meter	• Large multi-line LED display for easy visualization of voltage, current and frequency parameters.	7KT0120		
	3-phase energy meter Modbus RTU	• Dual source energy measurement. • An integrated communication port to communicate with energy management software. • Single line LCD display for clear visualization of essential energy parameters.	7KT0210		

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