

# **MIKRODEV**<sup>®</sup>

Innovation in Automation

## **PRODUCT CATALOG**

## **INDUSTRIAL AUTOMATION AND COMMUNICATION**

- PROGRAMMABLE LOGIC CONTROLLER (PLC)
- DISTRIBUTED CONTROL SYSTEMS (DCS)
- IOT GATEWAYS
- OPERATOR CONTROL & MONITORING SYSTEMS

[www.mikrodev.com](http://www.mikrodev.com)





# ABOUT US

MIKRODEV has been developing and producing industrial control and communication products since 2006.

MIKRODEV provides services to system integrators in the public and private sectors, OEMs and end users. Our products are manufactured in accordance with the quality standards required by the industrial automation sector and our products have been proved by the quality of our products for many years without problems.

MIKRODEV is one of the few companies in the world with its own designed IEC 61131-3 compliant library in its programmable logic controllers. In addition, an open, flexible, programmable SCADA solution has been developed by MIKRODEV and is available to the customers.

The performance, wide range of applications with MIKRODEV products and the company's technological know-how, helps customers achieve faster, easier and lower cost results.

**MIKRODEV**<sup>®</sup>







# MIKRODEV AUTOMATION PRODUCTS

## PROGRAMMABLE LOGIC CONTROLLER (PLC)

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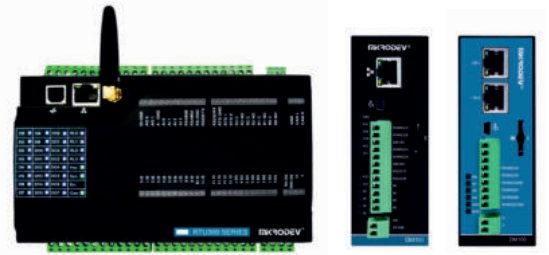
- Micro Level Control Systems (MP110 Series)
- Medium and Large Level Control Systems (MP211 Series)
- XIO110 Expansion Modules
- XIO211 Expansion Modules
- Mikrodiagram



## DISTRIBUTED CONTROL SYSTEMS (DCS)

12 / 22

- Remote Terminal Unit (RTU300 Series)
- Remote Terminal Unit (DM100 Series)



## IOT SOLUTIONS

23 / 38

- MODBUS Gateway (MBS100 Series)
- Serial Device Server (SC100 Series)
- M-BUS MODBUS Gateway (MMS100 Series)
- DLMS MODBUS Gateway (MDC100 Series)
- Assistant Configuration Software

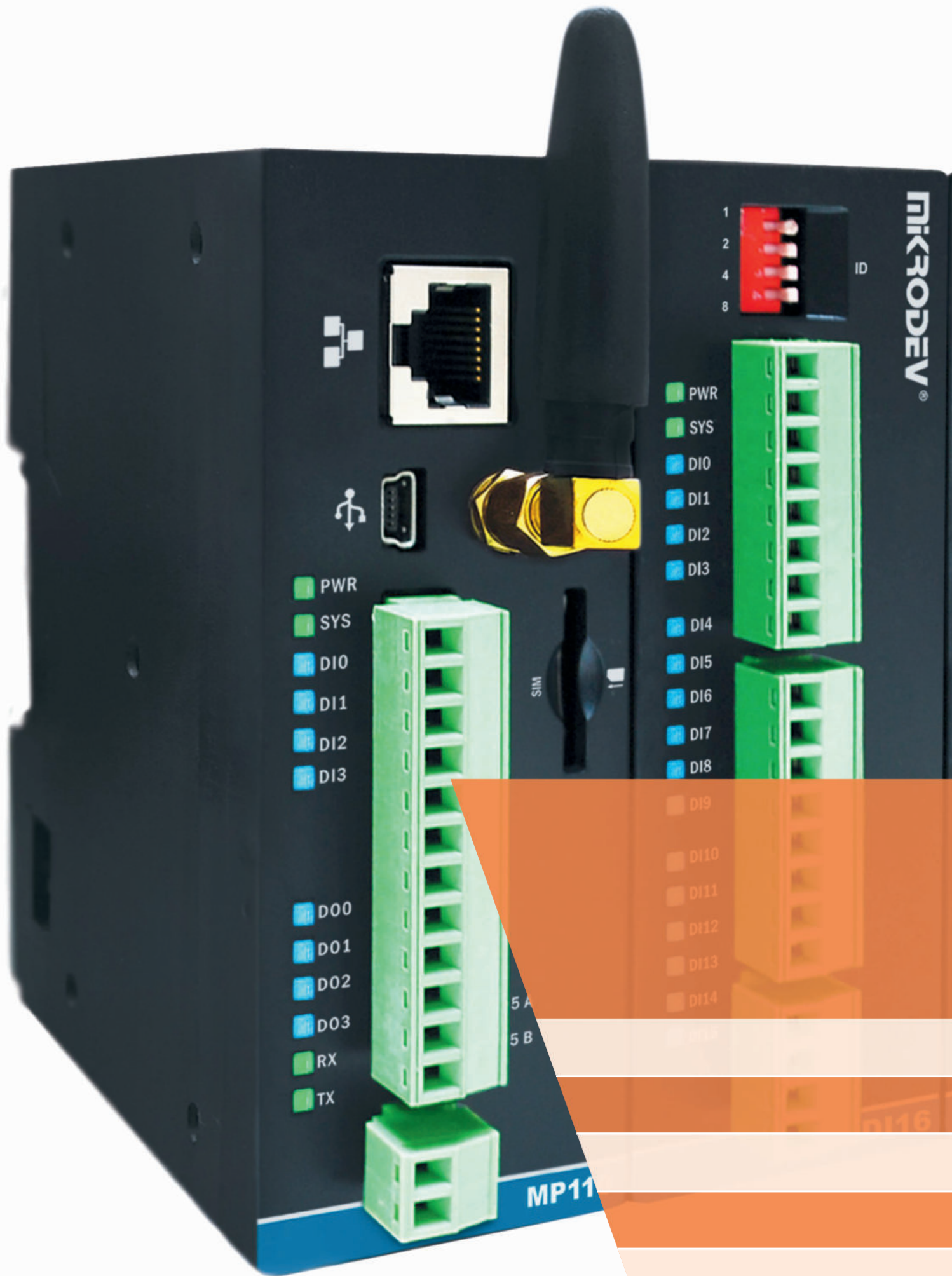


## OPERATOR CONTROL AND MONITORING SYSTEMS

39 / 44

- HMI (ViewSMART Series)
- SCADA (ViewPLUS)





MIKRODEV®

1  
2  
4  
8 ID

PWR  
SYS  
DI0  
DI1  
DI2  
DI3  
D00  
D01  
D02  
D03  
RX  
TX

PWR  
SYS  
DI0  
DI1  
DI2  
DI3  
DI4  
DI5  
DI6  
DI8

MP11





# PROGRAMMABLE LOGIC CONTROLLER (PLC)

Micro Level Control Systems (MP110 Series)

Medium and Large Level Control Systems (MP211 Series)

XIO110 Expansion Modules

XIO211 Expansion Modules

Mikrodiagram

# MP110 SERIES

Low cost and Compact Programmable Logic Controller for entry level automation applications



## TECHNICAL SPECIFICATION

### Fast and Easy Programming

- ▶ IEC 61131-3 standard instructions
- ▶ Function block diagram (FBD) and Ladder programming
- ▶ Programming with standard USB cable
- ▶ Remote project download / upload and software update
- ▶ PID and ON-OFF control function library
- ▶ Access to address values via web interface.
- ▶ Data Logger feature (Log record access support via FTP)
- ▶ Hot Swap (change under energy) feature
- ▶ SMS, GPRS, DTMF calling feature.

### Integrated Communication Ports

- ▶ ETHERNET; 1 port, 10/100 Mbps
- ▶ RS485; 1 port, ESD protection
- ▶ USB; 1 port, type B mini USB

### Input / Output

- ▶ Internal inputs and outputs; GB0, GB1 (Board Type)
- ▶ Expansion up to 512 points

### Optional

- ▶ GSM/GPRS, Class 12, Quad Band or GSM/LTE
- ▶ Serial port selection and isolation

### Communication Protocols

- ▶ Master communication protocols; MODBUS TCP, MODBUS RTU
- ▶ Slave communication protocols; MODBUS TCP, MODBUS RTU
- ▶ IoT protocols; MQTT

### Position Control Functions

- ▶ Fast counter input; Max 200 kHz
- ▶ Pulse width modulation (PWM); Max 65 kHz
- ▶ Pulse train exit (PTO); Max 50 kHz

### Real Time Clock and Calendar

- ▶ Real time clock; Built-in Watch Dog Timer
- ▶ Calendar; Weekly and annual timer

### Supply

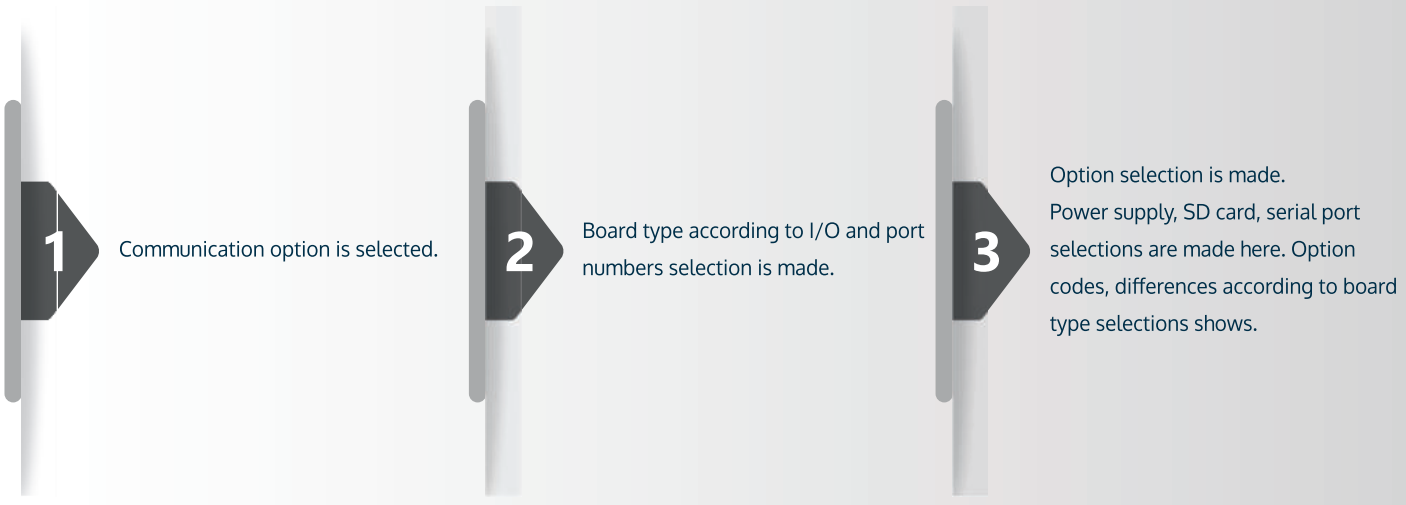
- ▶ Supply voltage; 12-36VDC
- ▶ Supply current; 50 mA @ 24VDC

## ACCESSORIES

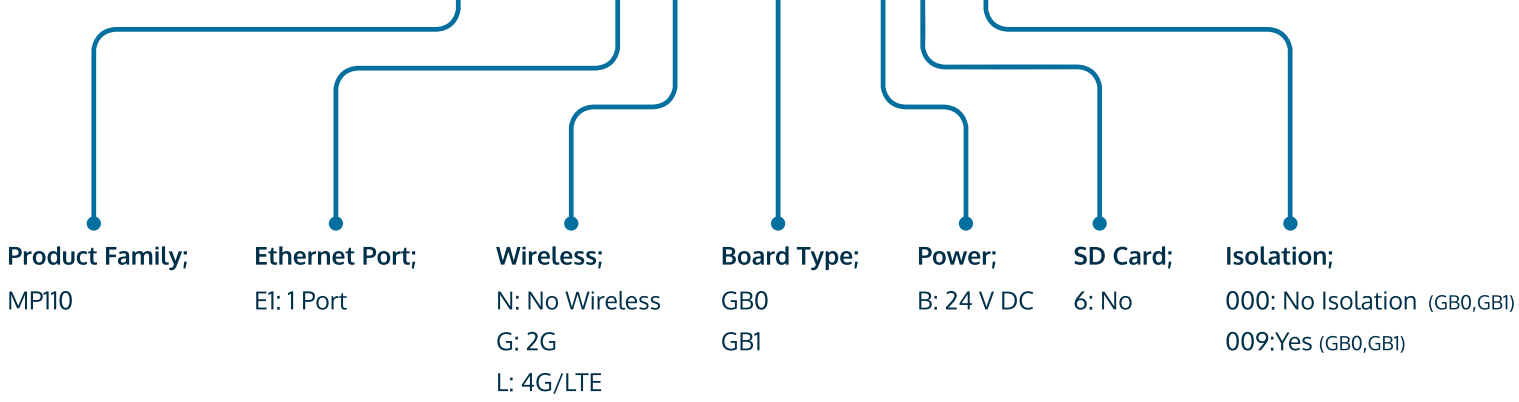
PRODUCT	
Wired Antenna	3 dbi antenna gain, 3 m cable length, magnetic (For all products)
Wired Antenna	9 dbi antenna gain, 7 m cable length, magnetic (For all products)
Wired Antenna	9 dbi antenna gain, 12 m cable length, magnetic (For all products)
USB Cable	Type B USB, 50 cm (For MP211 and RTU300 Series)
USB Cable	Type B Mini USB, 50 cm (For MP110, DM100, ViewSMART and IOT Gateway Series)



# MP110 ORDER CODE



## MP110-E1G-GB0-B6000



# MP110 ORDER CODE

MODEL-COM-BOARD-OPTIONS			
COM	ETHERNET	WIRELESS	MINIMUM ORDER QUANTITY
E1N	1		8
E1G	1	2G	8
E1L	1	LTE/4G	8

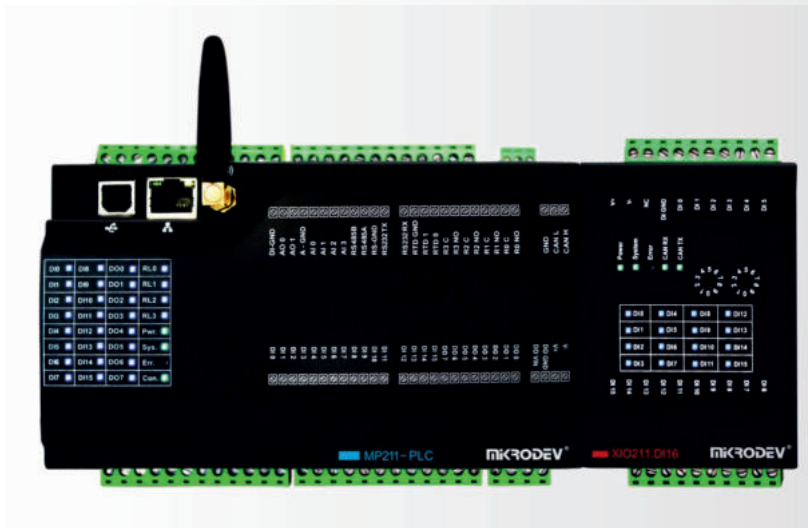
MODEL-COM-BOARD-OPTIONS					
BOARD	DIN	DOUT	AIN	RS485 (ESD Protection 18 kV Contact Direct/ 25 kV Air)	MINIMUM ORDER QUANTITY
	Channel Number	Channel Number	Channel Number		
GB0	4	4	2	1	8
GB1	8	2		1	24

MODEL-COM-BOARD-OPTIONS						
OPTIONS	SUPPORTED BOARD TYPE	POWER	AIN		RS485 ISOLATION	MINIMUM ORDER QUANTITY
			Resolution	Signal Type		
B6000	GB1	24V DC	0-20ma	12 Bit		8
B6009	GB0	24V DC	0-20ma	12 Bit	✓	16

• When determining the minimum order quantity, the highest selection is taken as reference.



# MP211 SERIES



Reliable and high performance Programmable Logic Controller for medium and high level automation applications



## TECHNICAL SPECIFICATION

### Fast and Easy Programming

- ▶ IEC 61131-3 standard instructions
- ▶ Function block diagram (FBD) and Ladder programming
- ▶ Motion control function library
- ▶ PID and ON-OFF control function library
- ▶ Remote project upload / download and software update
- ▶ HVAC systems function library
- ▶ Programmable data recording (Logging)
- ▶ Maximum number of blocks
- ▶ Hot Swap (change under energy) feature

### Integrated Communication Ports

- ▶ Ethernet; 1 port, 10/100 Mbps
- ▶ 1 port RS485, 3 kV ESD protection, 1 port RS232 or 2 port RS485 (Optional)
- ▶ USB; 1 port, type B USB

### Input / Output

- ▶ Internal inputs and outputs; GA0, GA1, GA3, GA4 (Board Type)
- ▶ Expansion up to 1024 points

### Optional

- ▶ GSM/GPRS, Class 12, Quad Band or GSM/LTE
- ▶ Wi-Fi; (IEEE 802.11 b/g/n)
- ▶ Serial port selection and isolation
- ▶ SD Card support; Micro SD card

### Real Time Clock and Calendar

- ▶ Built in real-time clock

### Communication Protocols

- ▶ Supported Master protocols; MODBUS TCP, MODBUS RTU, MODBUS RTU over TCP
- ▶ Supported Slave protocols; MODBUS TCP, MODBUS RTU, MODBUS RTU over TCP
- ▶ Ability to work as MODBUS Gateway
- ▶ Mikrodev Special; DEVNET (UDP based data communication protocol)
- ▶ IoT Protocols; MQTT
- ▶ IP Protocols; TCP, UDP, NTP, SNTP, HTTP, TFTP, DHCP, DNS

### Motor Control Capabilities

- ▶ Fast counter input; Max 200 kHz
- ▶ Pulse width modulation (PWM); Max 65 kHz
- ▶ Pulse Train output (PTO); Max 50 kHz

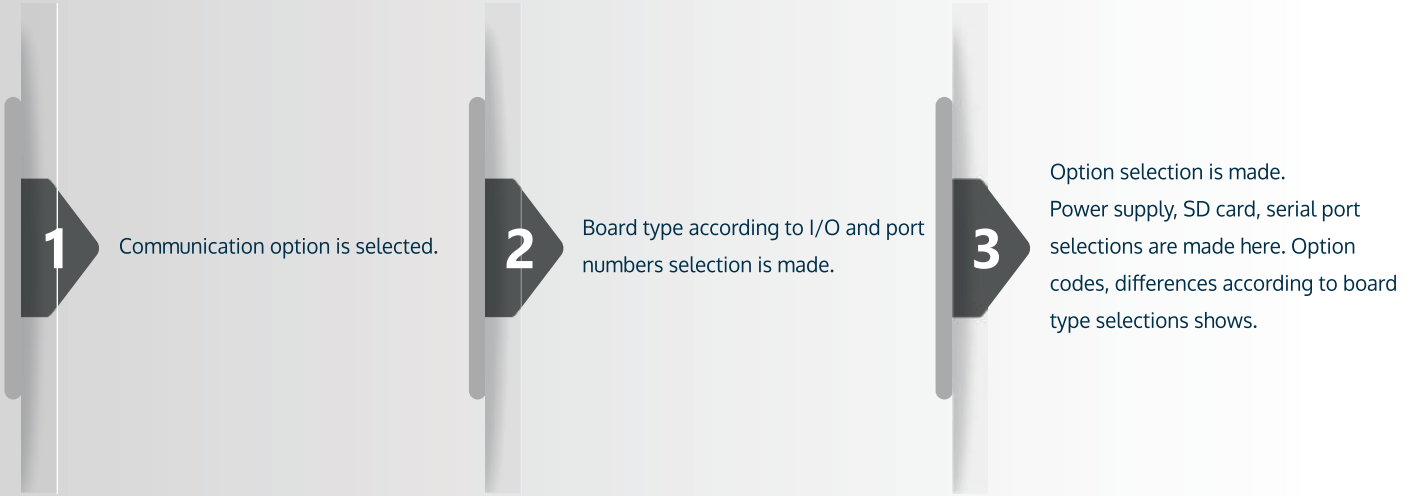
### Data Logger Functionality

- ▶ Programmable data logging trigger blocks
- ▶ Memory capacity; 256 blocks / register

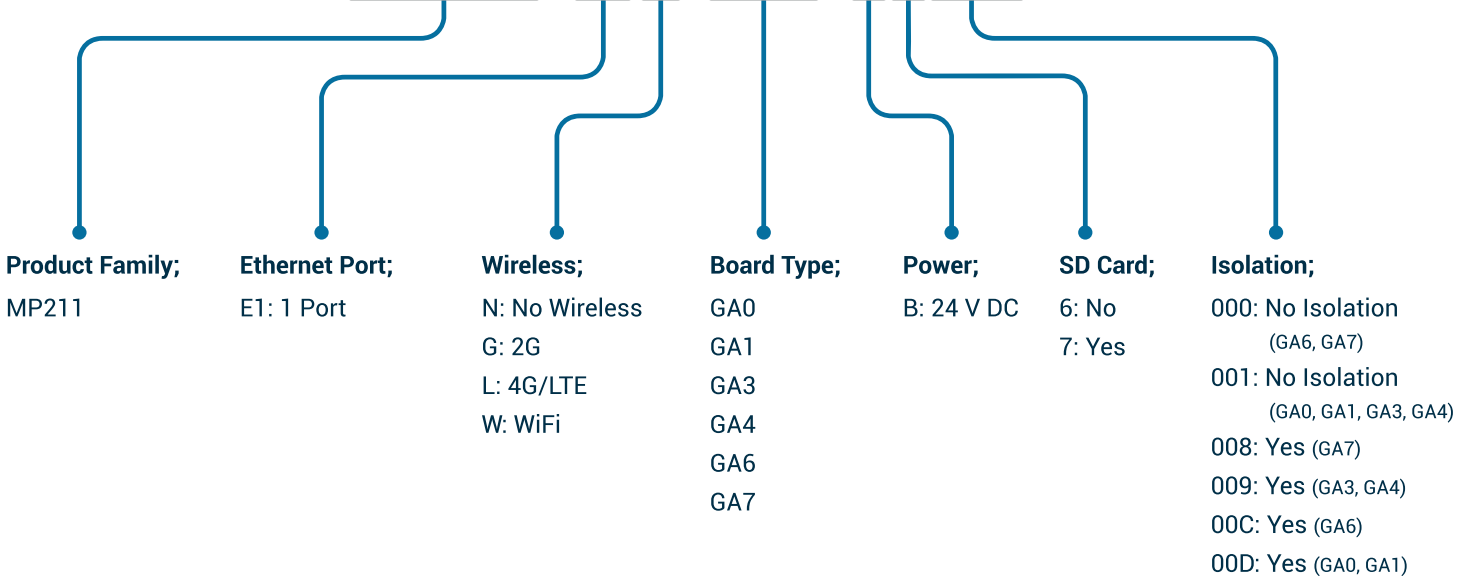
### Special GSM Functions

- ▶ SMS reception and analysis functions
- ▶ Numerous different SMS creation and sending functions
- ▶ Call / DTMF call acceptance and DTMF decoding functions
- ▶ Call / DTMF call initiation and DTMF code sending functions

# MP211 ORDER CODE



## MP211-E1W-GA1-B6001



# MP211 ORDER CODE

## MODEL-COM-BOARD-OPTIONS

COM	ETHERNET	WIRELESS	MINIMUM ORDER QUANTITY
E1N	1		8
E1G	1	2G	8
E1L	1	LTE/4G	8
E1W	1	WiFi	8

## MODEL-COM-BOARD-OPTIONS

BOARD	DIN	DOUT	RÖLE	AIN	AOUT	RTD	RS232 (ESD Protection 8kV Contact Direct/ 15 kV Air)	RS485 (ESD Protection 18 kV Contact Direct/ 25 kV Air)	MINIMUM ORDER QUANTITY
	Channel Number	Channel Number	Channel Number	Channel Number	Channel Number	Channel Number			
GA0	16	8	4	4	2	2	1	1	16
GA1	16	8	4	4	2		1	1	8
GA3	16	8	4	4	2	2		2	16
GA4	16	8	4	4	2			2	8
GA6	16	8		4			1	1	8
GA7	16	8		4				2	8

## MODEL-COM-BOARD-OPTIONS

OPTIONS	SUPPORTED BOARD TYPE	POWER	AIN		AOUT		RTD	SD CARD	RS232 ISOLATION	RS485 ISOLATION	MINIMUM ORDER QUANTITY
			Resolution	Signal Type	Resolution	Signal Type	Signal Type				
B6000	GA6, GA7	24V DC	12 Bit	0-20ma							8
B6001	GA0, GA1, GA3, GA4	24V DC	16 Bit	0-20ma	12 Bit	0-20ma	PT1000 (GA0, GA3)				8
B6008	GA7	24V DC	12 Bit	0-20ma						✓	16
B6009	GA3, GA4	24V DC	16 Bit	0-20ma	12 Bit	0-20ma	PT1000 (GA3)			✓	16
B600C	GA6	24V DC	12 Bit	0-20ma					✓	✓	16
B600D	GA0, GA1	24V DC	16 Bit	0-20ma	12 Bit	0-20ma	PT1000 (GA0)		✓	✓	16
B7000	GA6, GA7	24V DC	12 Bit	0-20ma				✓			8
B7001	GA0, GA1, GA3, GA4	24V DC	16 Bit	0-20ma	12 Bit	0-20ma	PT1000 (GA0, GA3)	✓			8
B7008	GA7	24V DC	12 Bit	0-20ma				✓		✓	16
B7009	GA3, GA4	24V DC	16 Bit	0-20ma	12 Bit	0-20ma	PT1000 (GA3)	✓		✓	16
B700C	GA6	24V DC	12 Bit	0-20ma				✓	✓	✓	16
B700D	GA0, GA1	24V DC	16 Bit	0-20ma	12 Bit	0-20ma	PT1000 (GA0)	✓	✓	✓	16

• When determining the minimum order quantity, the highest selection is taken as reference.



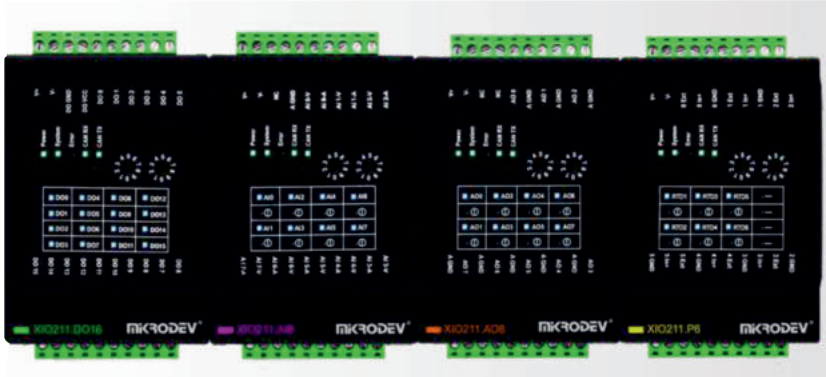
# XIO110 ORDER CODE

XIO110 Series expansion modules offer the possibility to expand for MP110 Series PLCs and DM100 Series Remote Terminal Units



PRODUCT CODE	BOARD	POWER	DIN	DOUT	AIN			AOUT			RTD		DALI	MINIMUM ORDER QUANTITY
			Channel Number	Channel Number	Channel Number	Resolution	Signal Type	Channel Number	Resolution	Signal Type	Channel Number	Signal Type	Channel Number	
XIO110-E0N-GD0-B2000	GD0	24V DC	16											8
XIO110-E0N-GD1-B4000	GD1	24V DC		16										8
XIO110-E0N-GD2-B0401	GD2	24V DC			8	16 Bit	0-20ma/ 0-10V							8
XIO110-E0N-GD3-B0000	GD3	24V DC						8	12 Bit	0-20ma				8
XIO110-E0N-GD3-B0800	GD3	24V DC						8	12 Bit	0-10V				8
XIO110-E0N-GD4-B0000	GD4	24V DC									6	PT1000		8
XIO110-E0N-GD4-B0010	GD4	24V DC									6	PT100		8
XIO110-E0N-GD6-B2000	GD6	24V DC	8											8
XIO110-E0N-GD7-B4000	GD7	24V DC		8										8
XIO110-E0N-GD8-B6000	GD8	24V DC	8	8										8
XIO110-E0N-GD9-B0000	GD9	24V DC			4	12 Bit	0-20ma	4	12 Bit	0-20ma				16
XIO110-E0N-GD9-B0900	GD9	24V DC			4	12 Bit	0-10V	4	12 Bit	0-10V				16
XIO110-E0N-GDA-B0000	GDA	24V DC											1	8

# XIO211 ORDER CODE



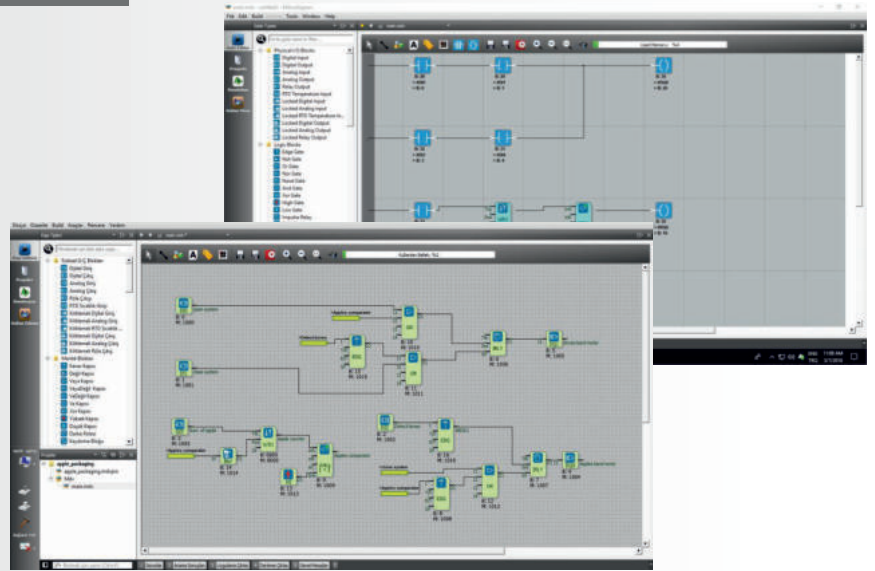
XIO211 Series expansion modules offer the possibility to expand for MP211 Series PLCs and RTU300 Series Remote Terminal Units

PRODUCT CODE	BOARD	POWER	DIN	DOUT	AIN			AOUT			RTD		DALI	MINIMUM ORDER QUANTITY
			Channel Number	Channel Number	Channel Number	Resolution	Signal Type	Channel Number	Resolution	Signal Type	Channel Number	Signal Type	Channel Number	
XIO211-E0N-GD0-B2000	GD0	24V DC	16											8
XIO211-E0N-GD1-B4000	GD1	24V DC		16										8
XIO211-E0N-GD2-B0401	GD2	24V DC			8	16 Bit	0-20ma/ 0-10V							8
XIO211-E0N-GD3-B0000	GD3	24V DC						8	12 Bit	0-20ma				8
XIO211-E0N-GD3-B0800	GD3	24V DC						8	12 Bit	0-10V				8
XIO211-E0N-GD4-B0000	GD4	24V DC									6	PT1000		8
XIO211-E0N-GD4-B0010	GD4	24V DC									6	PT100		8
XIO211-E0N-GD5-B0000	GD5	24V DC											8	8
XIO211-E0N-GD7-B4000	GD7	24V DC		8										16
XIO211-E0N-GD8-B6000	GD8	24V DC	8	8										16
XIO211-E0N-GD9-B0000	GD9	24V DC			4	12 Bit	0-20ma	4	12 Bit	0-20ma				16
XIO211-E0N-GD9-B0900	GD9	24V DC			4	12 Bit	0-10V	4	12 Bit	0-10V				16

# MIKRODIAGRAM

Free of Charge

Mikrodev PLC  
programming editor with  
FBD and LADDER support



## TECHNICAL SPECIFICATION

### PLC Project Development Facilities

- ▶ PLC Selection
- ▶ Adding / Removing Expansion Modules
- ▶ Generating Project Main Editor Page and Adding New
- ▶ Ones Generating Special Blocks
- ▶ Line Label Definition and Assigning Label
- ▶ Reporting project design errors during compilation
- ▶ Firmware and program update via TCP
- ▶ Upload / download project in PLC
- ▶ Project encryption feature
- ▶ FTP logging feature

### Programming Languages

- ▶ In accordance with IEC 61131-3 directives
- ▶ Functional Block Diagram and Ladder Programming

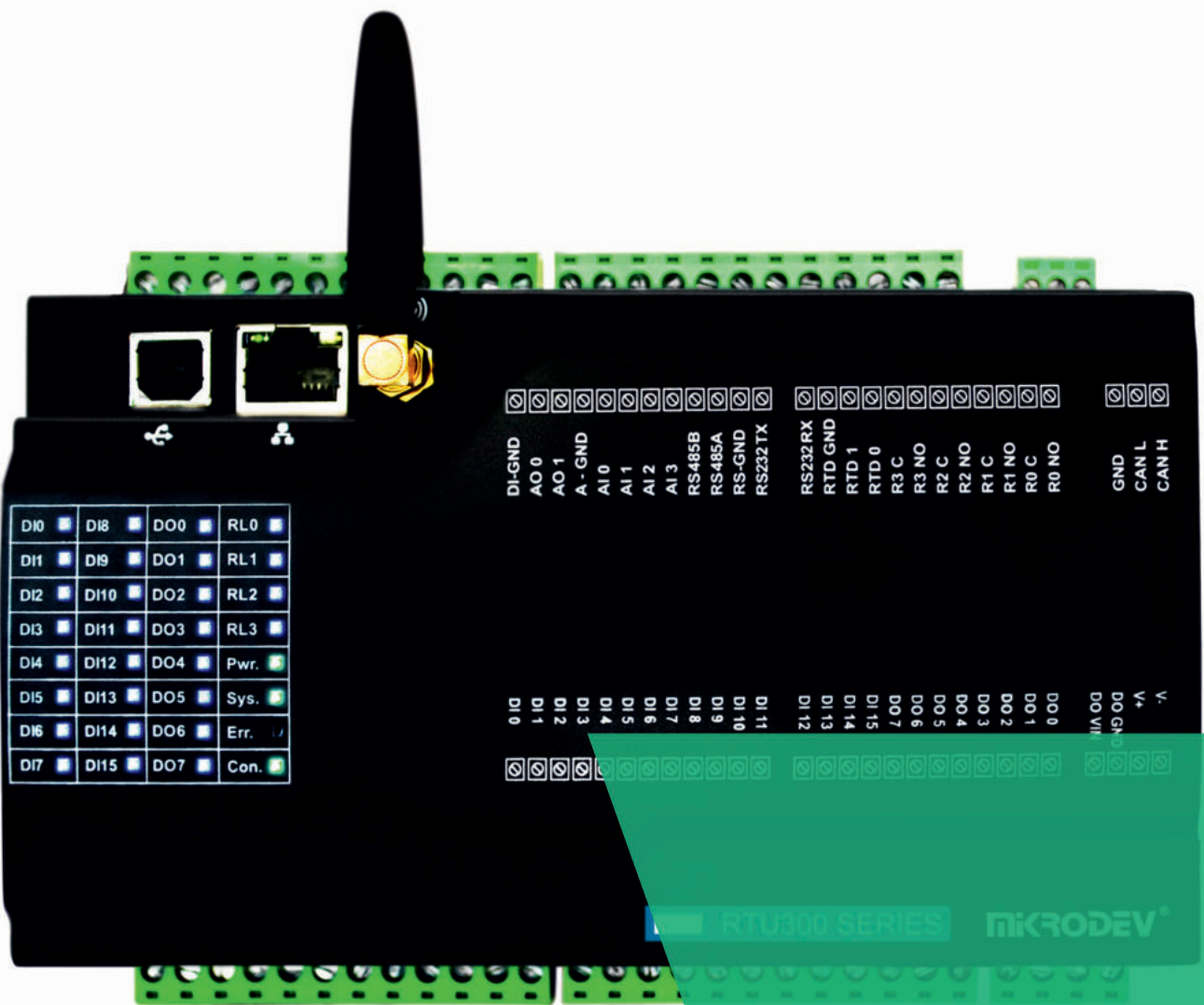
### Operating Modes

- ▶ Project development mode
- ▶ Simulation mode: test the project, without PLC connection allows you to
- ▶ Online monitoring mode: PLC over TCP or serial connection connection, the block values are displayed instantly

## Some of Function Blocks

<a href="#">Motion Control Blocks</a>	<a href="#">Table Blocks</a>	<a href="#">Calibration Blocks</a>	<a href="#">Mathematical Operations Blocks</a>
Fast Counter Input	Word Table	Slope Calibrator	Word Comparator
Pulse Width Modulation	Analog Table	Point Calibrator	Analog Comparator
Pulse Train Output	Word Table Operation	<a href="#">Delay / Pulse Timers</a>	Analog Math
Axis Definiton	Analog Table Operation	On Delay	Word Math
Axis Control	Long Table	Off Delay	Long Math
<a href="#">Controller Blocks</a>	Bit Table	On/Off Delay	Long Comparator
Hysteresis	Long Table Operation	Retentive On Delay	<a href="#">Number of Blocks</a>
PID Controller	<a href="#">Calendar Blocks</a>	Timer Output Relay	Up / Down Counter
Analog Ramp	Weekly Timer	Symmetric Pulse Generator	Run Time
On / Off Controller	Yearly Timer	Real Time Pulse Generator	
	Astronomical Timer		

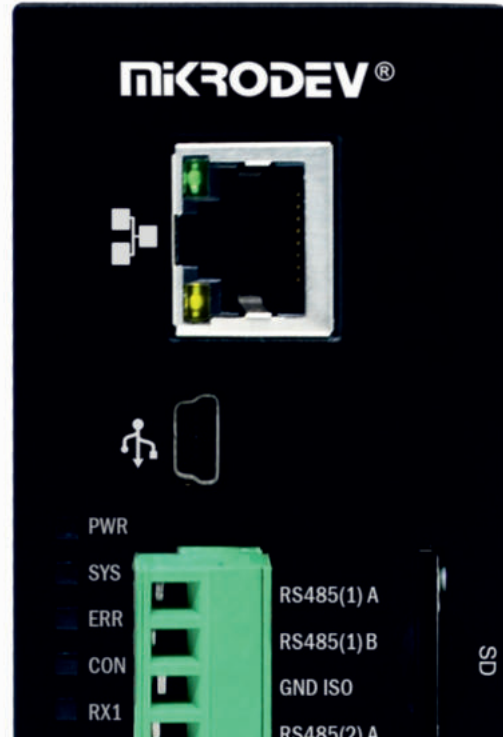
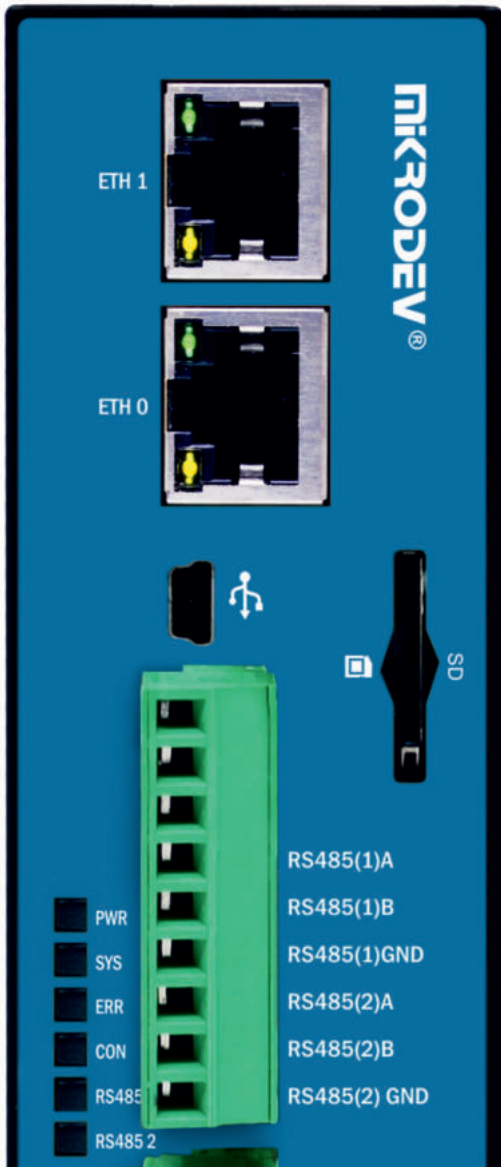




D10	D18	DO0	RL0
D11	D19	DO1	RL1
D12	D110	DO2	RL2
D13	D111	DO3	RL3
D14	D112	DO4	Pwr.
D15	D113	DO5	Sys.
D16	D114	DO6	Err.
D17	D115	DO7	Con.

DI-GND AO 0 AO 1 A - GND AI 0 AI 1 AI 2 AI 3 RS485B RS485A RS-GND RS232TX  
 RS232RX RTD GND RTD 1 RTD 0 R3 C R3 NO R2 C R2 NO R1 C R1 NO R0 C R0 NO  
 GND CAN L CAN H  
 V- V+ DO GND DO VIL DO 0 DO 1 DO 2 DO 3 DO 4 DO 5 DO 6 DO 7 DO 8 DO 9 DO 10 DO 11 DO 12 DO 13 DO 14 DO 15  
 DI 0 DI 1 DI 2 DI 3 DI 4 DI 5 DI 6 DI 7 DI 8 DI 9 DI 10 DI 11 DI 12 DI 13 DI 14 DI 15

RTU300 SERIES MIKRODEV®



# DISTRIBUTED CONTROL SYSTEMS (DCS)

Remote Terminal Unit (RTU300 Series)

Remote Terminal Unit (DM100 Series)

DM100

## RTU300 SERIES

Mikrodev RTU allows control, data collection and communication even in the most harsh environments. Supports industrial protocols.



### TECHNICAL SPECIFICATION

#### Programming

- ▶ IEC 61131-3 Compatible Programming
- ▶ Programming editor; Telediagram
- ▶ Telediagram editor protocol support; IEC 61850, IEC 60870, DNP3, MQTT and MODBUS
- ▶ Live monitoring / intervention of process data with online monitoring
- ▶ Remote programming over TCP / IP
- ▶ Remote project upload / download and firmware update
- ▶ Live monitoring of process data with Web Server feature
- ▶ PID and ON-OFF control function library
- ▶ NTP time synchronization
- ▶ Redundant communication ports (Ethernet, GSM)
- ▶ Ability to work as gateway

#### General Features

- ▶ Panel mounting; DIN-rail
- ▶ Box; Plastic, IP20
- ▶ Power protection and IO isolation

#### Input / Output\*

- ▶ Digital input; 16 (Optical isolation, 9-50VDC)
- ▶ Digital output; 8 (Optical isolation, max 2A @ 30VDC)
- ▶ Relay output; 4 (3A @ 30VDC - 5A @ 250VAC)
- ▶ Analog input; 4 (0-20mA, 4-20mA, 0-10V)
- ▶ Analog output; 2 (0-20mA, 4-20mA, 0-10V)
- ▶ Expandable up to 1024 points

\*The number of IOs on the device differs according to the model. Please refer to the BOARD TYPE table to see the IO numbers for each model.

#### Communication Ports

- ▶ Ethernet; 1 port, 10/100 Mbps
- ▶ 1 port RS485, 3 kV ESD protection, 1 port RS232 or 2 port RS485 (Optional)
- ▶ USB ; 1 port, B type USB

#### Optional

- ▶ GSM/LTE
- ▶ Serial port selection and isolation
- ▶ SD Card support; Micro SD card

#### Communication Protocols

- ▶ DNP3
- ▶ IEC 61850
- ▶ IEC 60870-5-101/103/104
- ▶ MODBUS
- ▶ IoT protocols; MQTT
- ▶ IP protocols; TCP, UDP, NTP, SNTP, HTTP, TFTP, DHCP, DNS

#### Data Logger – Data Recording Feature

- ▶ Programmable data recording trigger blocks

#### Event Recording

- ▶ Time-tagged event recording
- ▶ Event recording time resolution; 1 ms
- ▶ Max event recording; 20000

#### Environmental Conditions

- ▶ Operating temperature; -25 / +75° C
- ▶ Storage temperature; -30 / +80° C

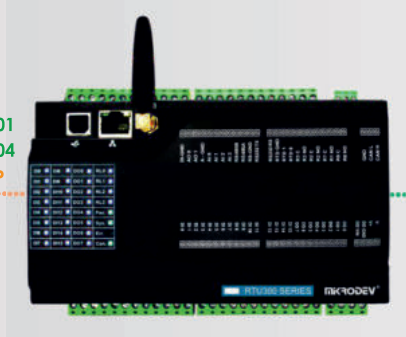


# RTU300 SERIES

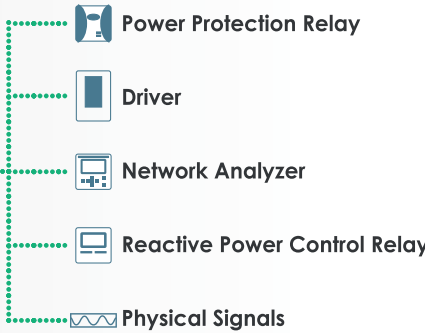
ViewPLUS SCADA



- IEC IEC60870-5-101
- IEC IEC60870-5-104
- MODBUS TCP
- MQTT
- DNP3
- SNMP



- IEC IEC62056-21
- IEC IEC61850
- IEC IEC60870-5-103
- MODBUS TCP / RTU
- DNP3



## TECHNICAL SPECIFICATION

**Real Time Clock and Calendar**

- ▶ Built-in real-time clock, Watch Dog Timer
- ▶ RTC battery; CR2032 Lithium, battery life; 4 years
- ▶ Battery status level reading function
- ▶ NTP Client support
- ▶ NTP time synchronization
- ▶ Time synchronization via MODBUS

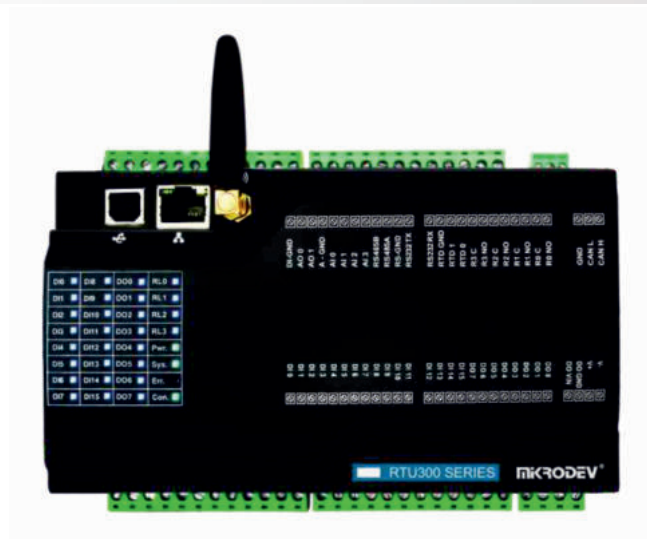
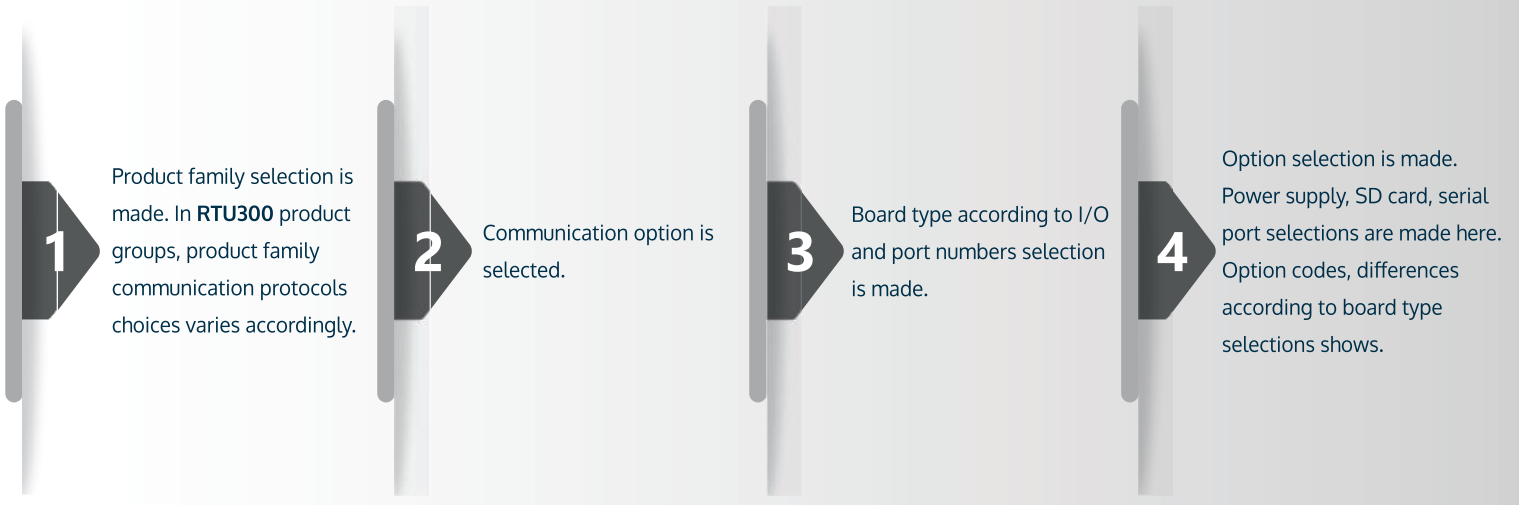
**Supply**

- ▶ Supply voltage; 12-50 VDC
- ▶ Supply current; 100 mA @ 24 VDC

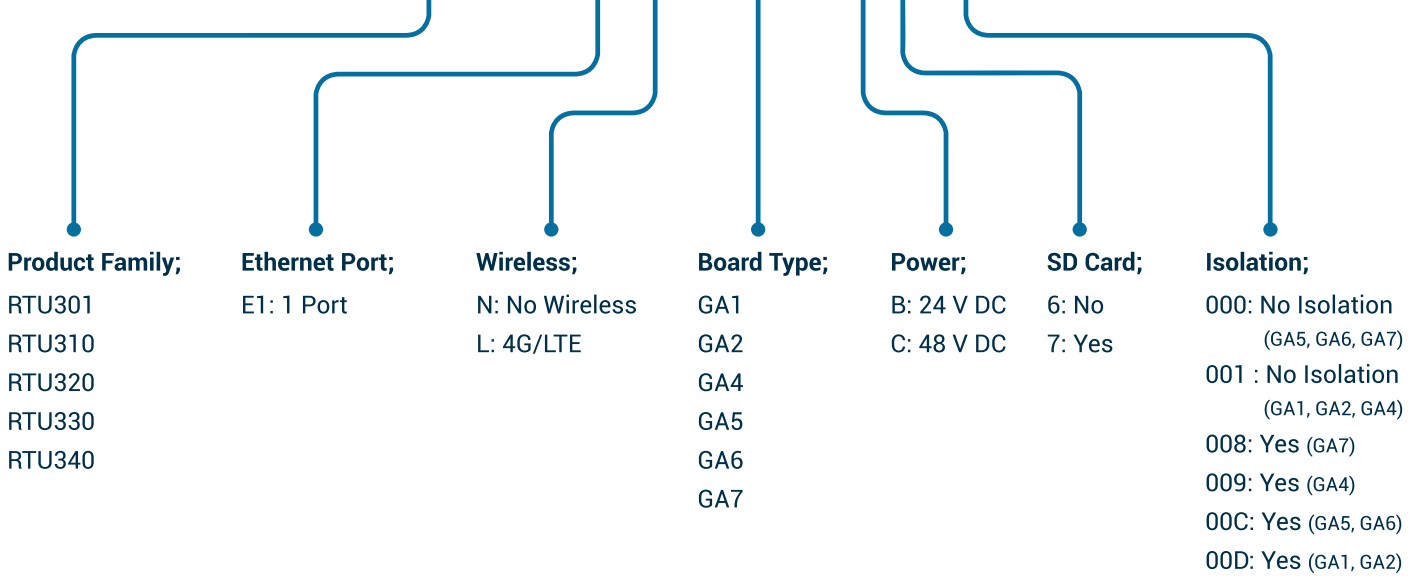
**Standards**

- ▶ IEC 60255-5; 2.5 kV insulation
- ▶ IEC 61000-4-2; 6 kV direct, 8 kV air discharge
- ▶ IEC 61000-4-6; RF field effected by 10 Vrms (150kHz - 80MHz)
- ▶ IEC 61000-4-18; 2.5 kV (1 Mhz with electromagnetic wave 400 / s repeat)

# RTU300 ORDER CODE



## RTU301-E1L-GA1-B6001



# RTU300 ORDER CODE

## MODEL-COM-BOARD-OPTIONS

MODEL	MODBUS	MQTT	DNP3	IEC60870-5-101	IEC60870-5-103	IEC60870-5-104	IEC61850
RTU301	✓	✓				✓	
RTU310	✓	✓					
RTU320	✓	✓	✓				
RTU330	✓	✓		✓	✓	✓	
RTU340	✓	✓		✓		✓	✓

## MODEL-COM-BOARD-OPTIONS

COM	ETHERNET	WIRELESS	MINIMUM ORDER QUANTITY
E1N	1		8
E1L	1	LTE/4G	8

## MODEL-COM-BOARD-OPTIONS

BOARD	DIN	DOUT	RÖLE	AIN	AOUT	R23S2 (ESD Protection 8 kV Contact Direct / 15 kV Air)	RS485 (ESD Protection 18 kV Contact Direct/ 25 kV Air)	MINIMUM ORDER QUANTITY
	Channel Number	Channel Number	Channel Number	Channel Number	Channel Number			
GA1	16	8	4	4	2	1	1	16
GA2	16	8		8		1	2	24
GA4	16	8	4	4	2	0	2	16
GA5	16	8	4			1	1	32
GA6	16	8		4		1	1	8
GA7	16	8		4		0	2	8

## MODEL-COM-BOARD-OPTIONS

OPTIONS	SUPPORTED BOARD TYPE	POWER	AIN		AOUT		SD CART	RS232 ISOLATION	RS485 ISOLATION	MINIMUM ORDER QUANTITY
			Resolution	Signal Type	Resolution	Signal Type				
B6000	GA5, GA6, GA7	24V DC	12 Bit	0-20ma (GA6, GA7)						8
B6001	GA1, GA2, GA4	24V DC	16 Bit	0-20ma	12 Bit	0-20ma (GA1, GA4)				8
B6008	GA7	24V DC	12 Bit	0-20ma				✓		24
B6009	GA4	24V DC	16 Bit	0-20ma	12 Bit	0-20ma		✓		24
B600C	GA5, GA6	24V DC	12 Bit	0-20ma (GA6)			✓	✓		24
B600D	GA1, GA2	24V DC	16 Bit	0-20ma	12 Bit	0-20ma (GA1)	✓	✓		24
B7000	GA5, GA6, GA7	24V DC	12 Bit	0-20ma (GA6, GA7)			✓			8
B7001	GA1, GA2, GA4	24V DC	16 Bit	0-20ma	12 Bit	0-20ma (GA1, GA4)	✓			8
B7008	GA7	24V DC	12 Bit	0-20ma			✓	✓		24
B7009	GA4	24V DC	16 Bit	0-20ma	12 Bit	0-20ma	✓	✓		24
B700C	GA5, GA6	24V DC	12 Bit	0-20ma (GA6)			✓	✓		24
B700D	GA1, GA2	24V DC	16 Bit	0-20ma	12 Bit	0-20ma (GA1)	✓	✓		24
C6000	GA5, GA6, GA7	48V DC	12 Bit	0-20ma (GA6, GA7)						24
C6001	GA1, GA2, GA4	48V DC	16 Bit	0-20ma	12 Bit	0-20ma (GA1, GA4)				24
C6008	GA7	48V DC	12 Bit	0-20ma				✓		32
C6009	GA4	48V DC	16 Bit	0-20ma	12 Bit	0-20ma		✓		32
C600C	GA5, GA6	48V DC	12 Bit	0-20ma (GA6)			✓	✓		32
C600D	GA1, GA2	48V DC	16 Bit	0-20ma	12 Bit	0-20ma (GA1)	✓	✓		32
C7000	GA5, GA6, GA7	48V DC	12 Bit	0-20ma (GA6, GA7)			✓			24
C7001	GA1, GA2, GA4	48V DC	16 Bit	0-20ma	12 Bit	0-20ma (GA1, GA4)	✓			24
C7008	GA7	48V DC	12 Bit	0-20ma			✓	✓		32
C7009	GA4	48V DC	16 Bit	0-20ma	12 Bit	0-20ma	✓	✓		32
C700C	GA5, GA6	48V DC	12 Bit	0-20ma (GA6)			✓	✓		32
C700D	GA1, GA2	48V DC	16 Bit	0-20ma	12 Bit	0-20ma (GA1)	✓	✓		32



# DM100 SERIES

Mikrodev RTU allows control, data collection and communication even in the most harsh environments. Supports industrial protocols.



## TECHNICAL SPECIFICATION

### Programming

- ▶ IEC 61131-3 Compatible Programming
- ▶ Programming editor; Telediagram
- ▶ Telediagram editor protocol support; IEC 61850, IEC 60870, DNP3, MQTT and MODBUS
- ▶ Live monitoring / intervention of process data with online monitoring
- ▶ Remote programming over TCP / IP
- ▶ Remote project upload / download and firmware update
- ▶ Live monitoring of process data with Web Server feature
- ▶ PID and ON-OFF control function library
- ▶ NTP time synchronization
- ▶ Hot Stand - by Redundant (Yedekli çalışabilme)
- ▶ Redundant communication ports (Ethernet)
- ▶ Ability to work as gateway
- ▶ RTC (Real Time Clock) / Watchdog Timer

### General Features

- ▶ Panel mounting; DIN-rail
- ▶ Box; Plastic, IP20
- ▶ Power protection and IO isolation

### Communication Ports

- ▶ Ethernet; 1 port, 10/100 Mbps
- ▶ 2 port RS485, 3 kV ESD protection, 1 port RS232 or 2 port RS485
- ▶ USB ; 1 port, B type USB

### Input / Output

- ▶ Internal inputs and outputs; ; GC0, GC3 (Board Type)
- ▶ Expansion up to 512 points

### Optional

- ▶ Ethernet port selection
- ▶ Serial port selection and isolation

### Communication Protocols

- ▶ DNP3
- ▶ IEC 61850
- ▶ IEC 60870-5-101/103/104
- ▶ MODBUS
- ▶ IEC 62056-21
- ▶ IoT protocols; MQTT (v 3.1.1 OASIS)
- ▶ IP protocols; TCP, UDP, NTP, SNMP, HTTP, TFTP, DHCP, DNS, SNMP
- ▶ TLS (Transport Layer Security) 1.2

### Data Logger – Data Recording Feature

- ▶ SD Card support; Micro SD card
- ▶ Programmable data recording trigger blocks

### Event Recording

- ▶ Time-tagged event recording
- ▶ Event recording time resolution; 1 ms
- ▶ Max event recording; 100.000

### Environmental Conditions

- ▶ Operating temperature; -25 / +75° C
- ▶ Storage temperature; -30 / +80° C

# DM100 SERIES

## ViewPLUS SCADA



- MODBUS TCP
- MQTT
- IEC60870-5-104
- IEC60870-5-101
- DNP3



- IEC61850
- IEC60870-5-103
- MODBUS TCP / RTU

- Power Protection Relay
- Driver
- Network Analyzer
- Reactive Power Control Relay
- Physical Signals

## TECHNICAL SPECIFICATION

### Real Time Clock

- ▶ Built-in real-time clock, Watch Dog Timer
- ▶ NTP time synchronization

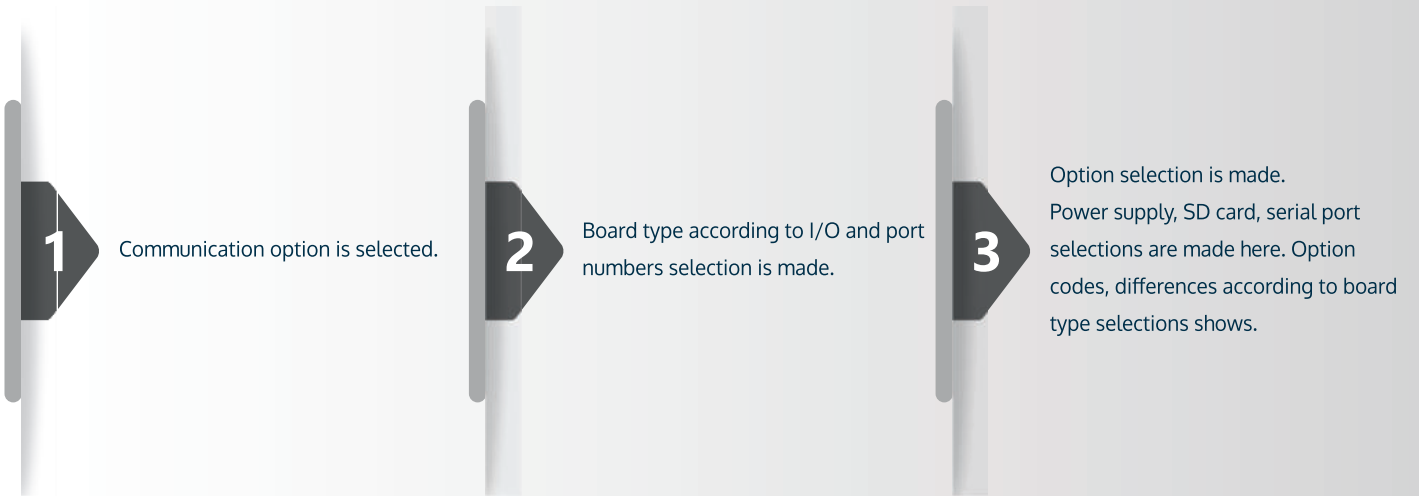
### Supply

- ▶ Supply voltage; 12-48VDC
- ▶ Supply current; 300mA @ 24VDC

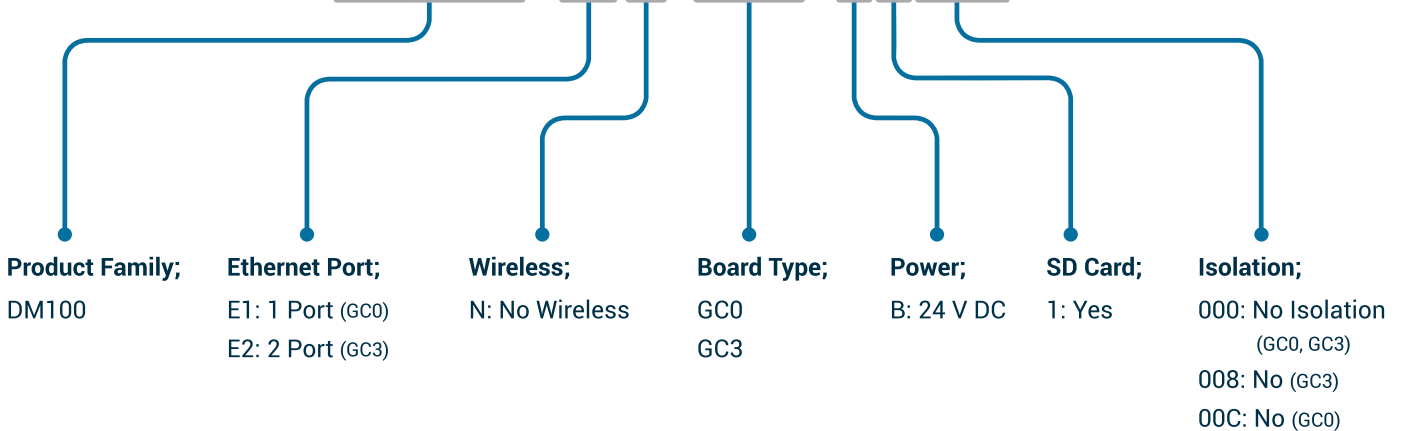
### Standards

- ▶ IEC 60255-5; 2.5 kV insulation
- ▶ IEC 61000-4-2; 6 kV direct, 8 kV air discharge
- ▶ IEC 61000-4-5 Surge Immunity (1 kV Line-Line, 2 kV Line-Earth (1,2/50μs))
- ▶ IEC 61000-4-6; RF field effected by 10 Vrms (150kHz - 80MHz)
- ▶ IEC 61000-4-18; 2.5 kV (1 Mhz with electromagnetic wave 400/s repeat)

# DM100 ORDER CODE



## DM100-E2N-GC3-B1000



# DM100 ORDER CODE

MODEL-COM-BOARD-OPTIONS				
COM	ETHERNET	WIRELESS	SUPPORTED BOARD TYPE	MINIMUM ORDER QUANTITY
E1N	1		GC0	8
E2N	2		GC3	16

MODEL-COM-BOARD-OPTIONS			
BOARD	RS232 (ESD Protection 8kV Contact Direct/ 15 kV Air)	RS485 (ESD Protection 18kV Contact Direct / 25 kV Air)	MINIMUM ORDER QUANTITY
GC0	1	2	8
GC3		2	8

MODEL-COM-BOARD-OPTIONS						
OPTIONS	SUPPORTED BOARD TYPE	POWER	SD CARD	RS232 ISOLATION	RS485 ISOLATION	MINIMUM ORDER QUANTITY
B1000	GC0, GC3	24V DC	✓			8
B1008	GC3	24V DC	✓		✓	16
B100C	GC0	24V DC	✓	✓	✓	16

• When determining the minimum order quantity, the highest selection is taken as reference.



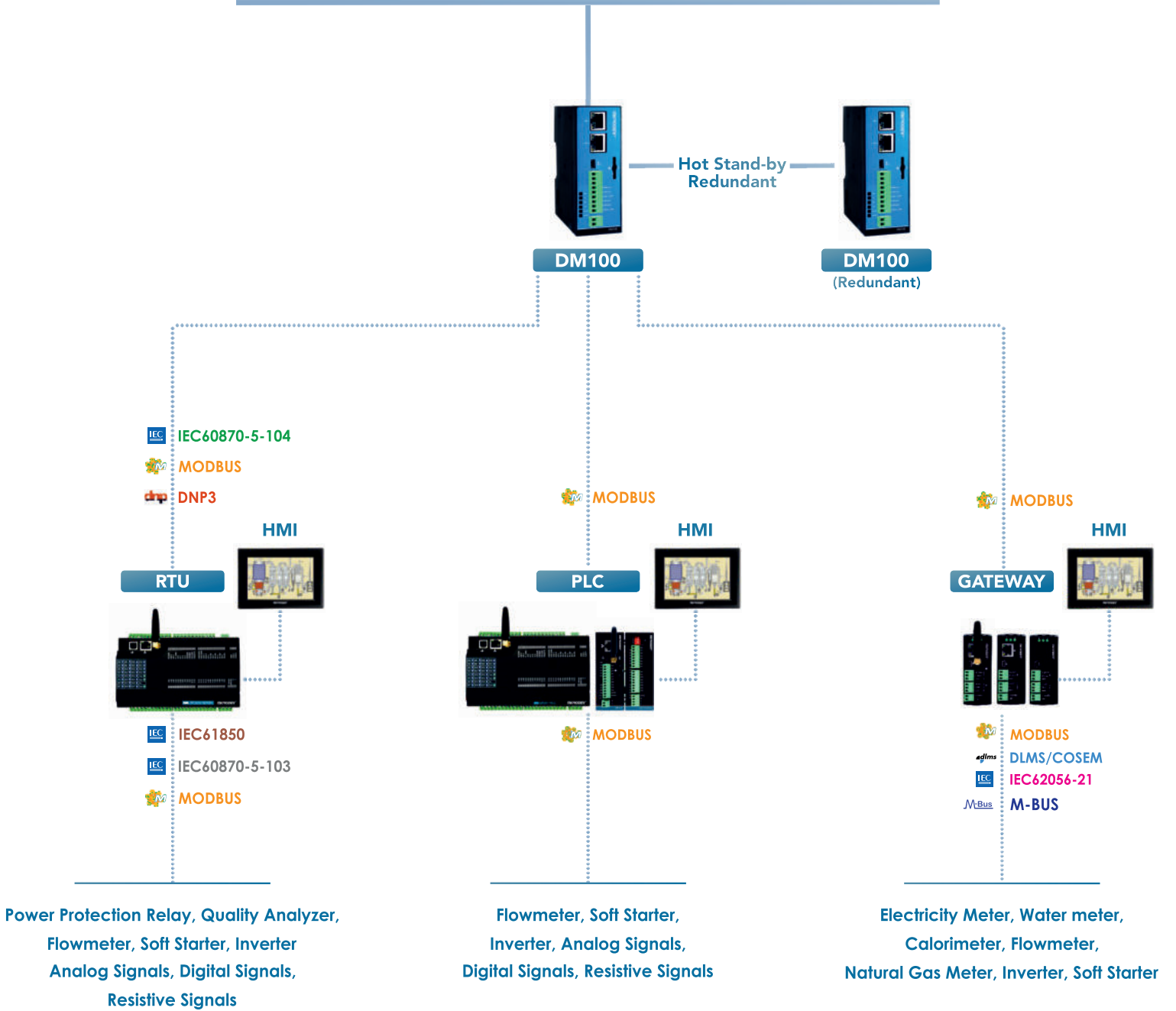
# DISTRIBUTED CONTROL SYSTEMS (DCS)

## ViewPLUS SCADA



1. Workstation ..... n. Workstation

IEC IEC60870-5-101 IEC IEC60870-5-104 MODBUS MQTT DNP3 adlms DLMS/COSEM





ACT

MIKRODEV®

USB

(+)/RX/M+ PORT 1  
(-)/TX/M-  
GND

(+)/RX PORT 2  
(-)/TX  
GND  
+ (24V DC)  
ND



# IOT SOLUTIONS

**MODBUS Gateway** (MBS100 Series)

**Serial Device Server** (SC100 Series)

**M-BUS Modbus Gateway** (MMS100 Series)

**DLMS Modbus Gateway** (MDC100 Series)

# MODBUS GATEWAY

Can communicate with MODBUS RTU, MODBUS TCP or remote products Via MODBUS TUNNEL protocols provides access.



## TECHNICAL SPECIFICATION

### Configuration and Management

- ▶ User-friendly configuration software (Assistant)
- ▶ Configuration via TCP / IP
- ▶ Configuration via USB
- ▶ Device search feature on the network
- ▶ Remote firmware update
- ▶ Monitoring settings with the Web Server feature

### Integrated Communication Ports

- ▶ 1 port RS485, 3 kV ESD protection, 1 port RS232 or 2 port RS485
- ▶ 1 port B type mini USB

### Optional Communication Ports

- ▶ GSM/GPRS, Class 12, Quad Band or GSM/LTE
- ▶ Ethernet; 10/100 Mbps
- ▶ Wi-Fi; 802.11b/g/n

### Communication Protocols

- ▶ Master communication protocols; MODBUS RTU, MODBUS TCP
- ▶ Slave communication protocols; MODBUS RTU, MODBUS TCP

### Protocols and Cross-Networking

- ▶ MODBUS TCP Master with RS485 / RS232 MODBUS RTU Slave
- ▶ MODBUS TCP Slave with RS485 / RS232 MODBUS RTU Master
- ▶ MODBUS RTU over TCP (MODBUS TUNNEL)

### TCP Socket Extra Features

- ▶ MODBUS TCP Slave TCP socket type on the side; Server or client
- ▶ Connection control and automatic reconnection

### Maximum Number of Connections

- ▶ Number of server sockets; 2
- ▶ Number of client sockets per server; 16
- ▶ RS485 line device number; Limited by hardware

### LED Signals

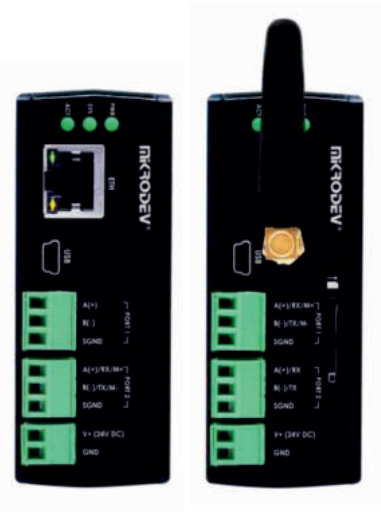
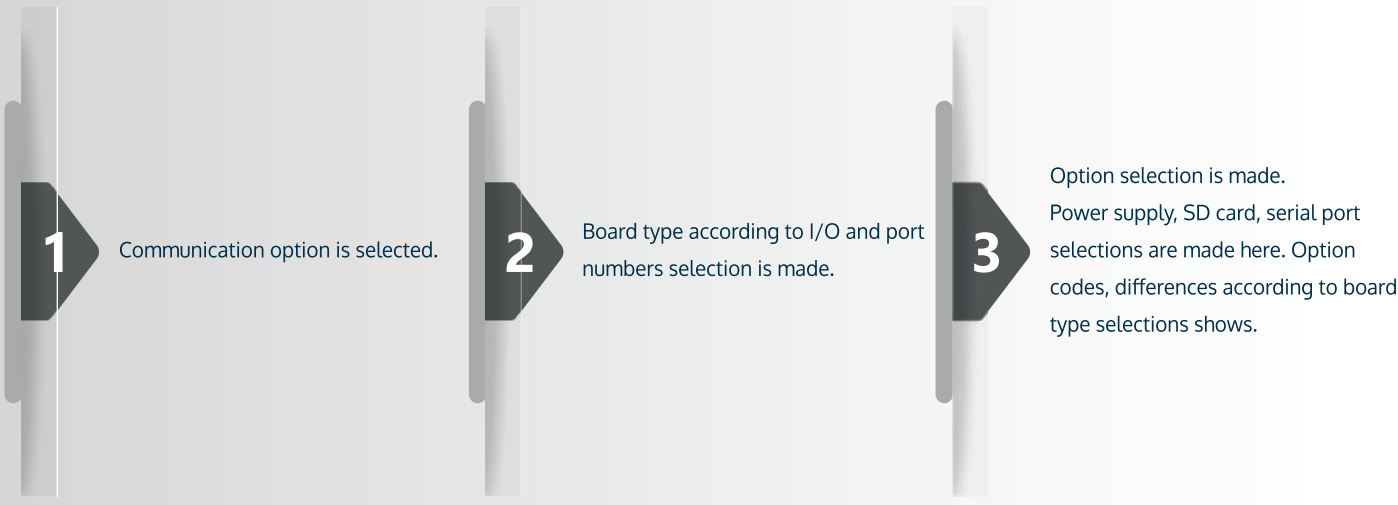
- ▶ Power; 1 LED Steady Green
- ▶ System; 1 LED 1Hz Green
- ▶ Connection; 1 LED 2Hz Green

### Supply

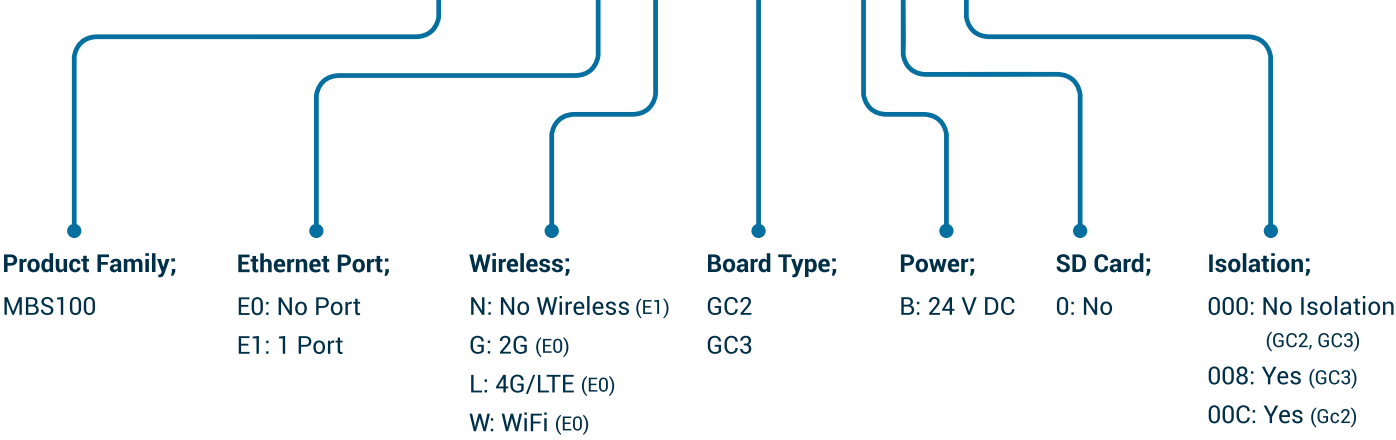
- ▶ Supply Voltage ; 9-36VDC
- ▶ Supply Current; 50mA @ 24VDC



# MBS100 ORDER CODE



## MBS100-E0L-GC3-B0000



# MBS100 ORDER CODE

MODEL- <b>COM</b> -BOARD-OPTIONS			
<b>COM</b>	ETHERNET	WIRELESS	MINIMUM ORDER QUANTITY
E1N	1		8
E0G		2G	8
E0L		LTE/4G	8
E0W		WiFi	8

MODEL-COM- <b>BOARD</b> -OPTIONS			
<b>BOARD</b>	RS232 (ESD Protection 8kV Contact Direct/ 15 kV Air)	RS485 (ESD Protection 18kV Contact Direct / 25 kV Air)	MINIMUM ORDER QUANTITY
GC2	1	1	8
GC3		2	8

MODEL-COM-BOARD- <b>OPTIONS</b>					
<b>OPTIONS</b>	SUPPORTED BOARD TYPE	POWER	RS232 ISOLATION	RS485 ISOLATION	MINIMUM ORDER QUANTITY
B0000	GC2, GC3	24V DC			8
B0008	GC3	24V DC		✓	16
B000C	GC2	24V DC	✓	✓	16

•When determining the minimum order quantity, the highest selection is taken as reference.

## SERIAL DEVICE SERVER



Connect the serial devices  
to Internet World

## TECHNICAL SPECIFICATION

**Configuration and Management**

- ▶ Configuration via TCP / IP
- ▶ Configuration via USB
- ▶ Device search feature on the network
- ▶ Remote firmware update
- ▶ Monitoring settings with the Web Server feature
- ▶ Transparent Communication
- ▶ Multiple Connectivity
  - Bidirectional access via serial port and TCP/IP

**Integrated Communication Ports**

- ▶ 1 port RS485, 3 kV ESD protection, 1 RS232
- ▶ 1 port B type mini USB

**Optional Communication Ports**

- ▶ GSM/GPRS, Class 12, Quad Band or GSM/LTE
- ▶ Ethernet; 10/100 Mbps
- ▶ Wi-Fi; 802.11b/g/n
- ▶ RF; 868 MHz free frequency bands, Tx power up to 0.5W

**TCP Socket Extra Features**

- ▶ TCP socket type; Server or client
- ▶ Connection control and automatic reconnection

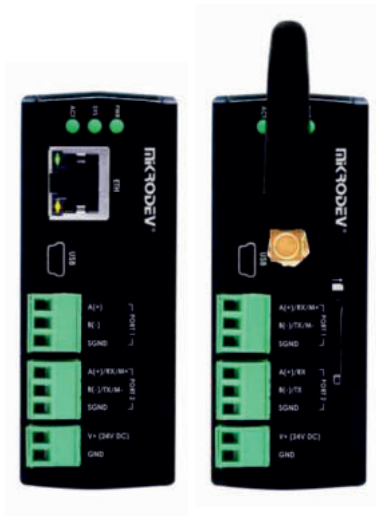
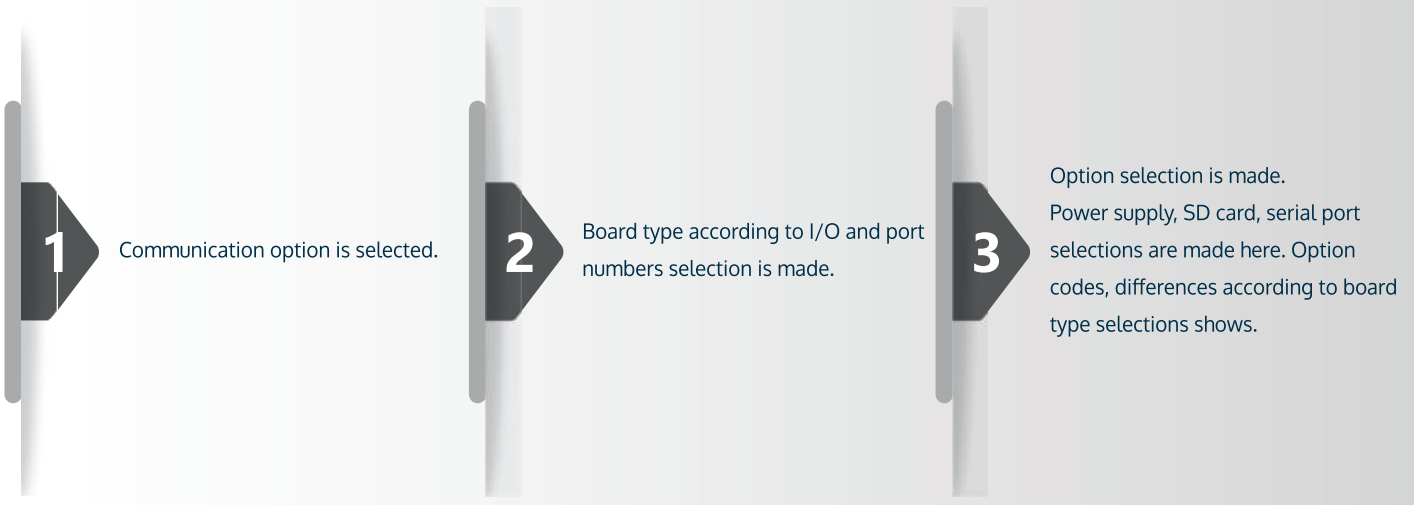
**LED Signals**

- ▶ Power; 1 LED steady green
- ▶ System; 1 LED 1Hz green
- ▶ Connection; 1 LED 2Hz green

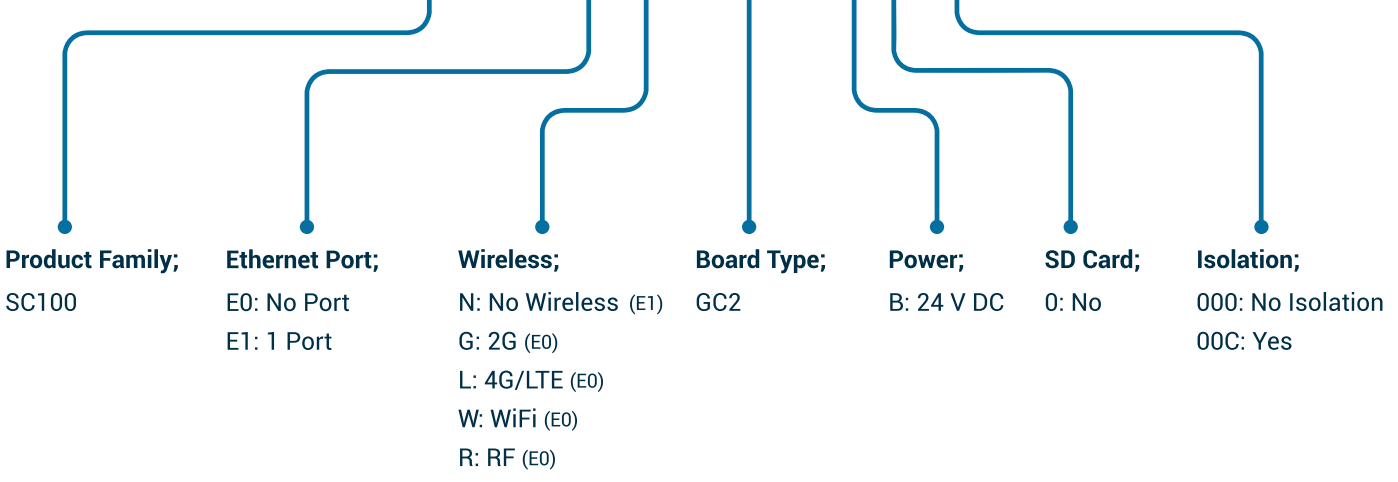
**Supply**

- ▶ Supply Voltage ; 9-36VDC
- ▶ Supply Current; 50mA @ 24VDC

# SC100 ORDER CODE



## SC100-E0R-GC2-B0000





# SC100 ORDER CODE

MODEL- <b>COM</b> -BOARD-OPTIONS			
COM	ETHERNET	WIRELESS	MINIMUM ORDER QUANTITY
E1N	1		8
E0G		2G	8
E0L		LTE/4G	8
E0W		WiFi	8
E0R		RF	16

MODEL-COM- <b>BOARD</b> -OPTIONS			
BOARD	RS232 (ESD Protection 8kV Contact Direct/ 15 kV Air)	RS485 (ESD Protection 18kV Contact Direct / 25 kV Air)	MINIMUM ORDER QUANTITY
GC2	1	1	8

MODEL-COM-BOARD- <b>OPTIONS</b>					
OPTIONS	SUPPORTED BOARD TYPE	POWER	RS232 ISOLATION	RS485 ISOLATION	MINIMUM ORDER QUANTITY
B0000	GC2	24V DC			8
B000C	GC2	24V DC	✓	✓	16

• When determining the minimum order quantity, the highest selection is taken as reference.

# M-BUS MODBUS GATEWAY

M-BUS communicable water meters,  
Like Calorimeters or Heat Share Gauges  
devices via MODBUS protocol  
provides access



## TECHNICAL SPECIFICATION

### Configuration and Management

- ▶ User-friendly configuration software
- ▶ Configuration via TCP / IP
- ▶ Configuration via USB
- ▶ Device search feature on the network
- ▶ Remote firmware update
- ▶ Monitoring settings with the Web Server feature
- ▶ M-BUS device identification via configuration software
- ▶ Primary addressing
- ▶ Secondary addressing
- ▶ Set a reading period
- ▶ M-BUS address map and MODBUS table mapping

### Integrated Communication Ports

- ▶ 1 port M-BUS
- ▶ 1 port RS485; 3 kV ESD protection
- ▶ 1 port B type mini USB

### Optional Communication Ports

- ▶ GSM/GPRS, Class 12, Quad Band or GSM/LTE
- ▶ Ethernet; 10/100 Mbps
- ▶ Wi-Fi; 802.11b/g/n

### Communication Protocols

- ▶ Master communication protocols; M-BUS EN1434-3, MODBUS TCP
- ▶ Slave communication protocols; MODBUS RTU, MODBUS TCP

### TCP Socket Extra Features

- ▶ Modbus TCP The TCP socket type on the slave side; Server or Client (selectable)
- ▶ Connection control and automatic reconnection

### Maximum Number of Connections

- ▶ Number of Server Sockets; 2
- ▶ Client connections per server; 1
- ▶ M-BUS line max. number of meters; 16

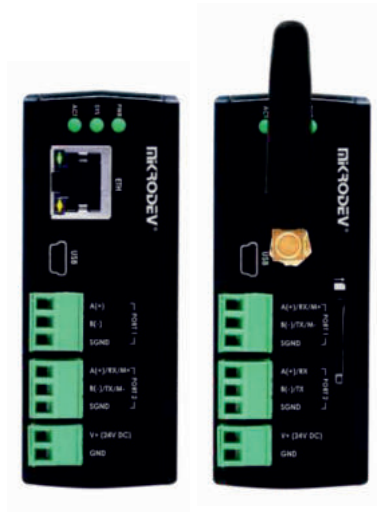
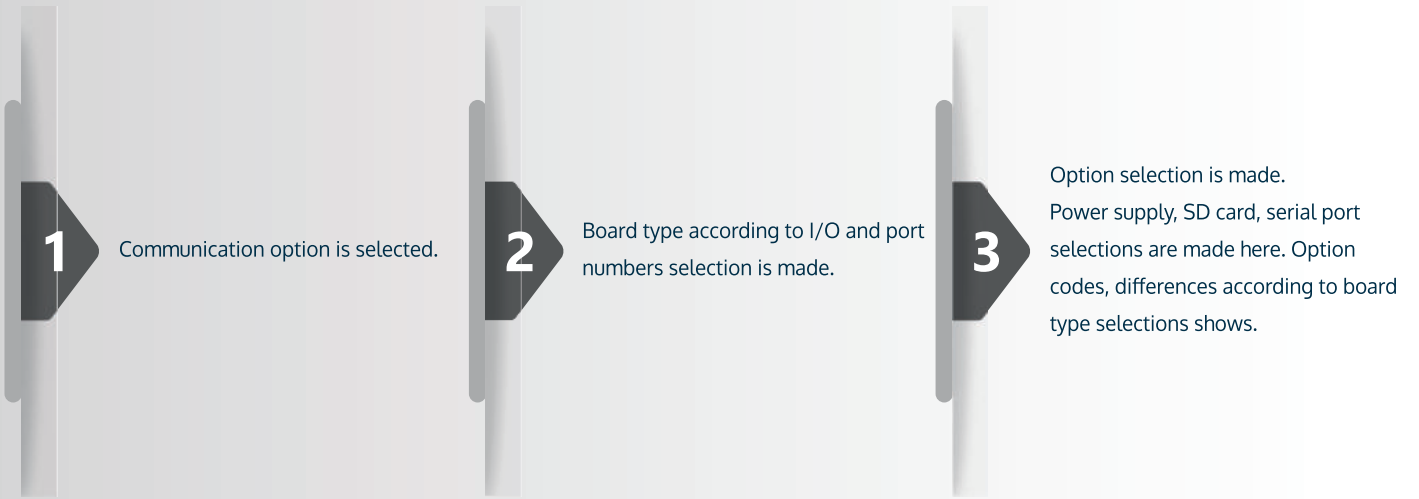
### LED Signals

- ▶ Power; 1 LED steady green
- ▶ System; 1 LED 1Hz green
- ▶ Connection; 1 LED 2Hz green

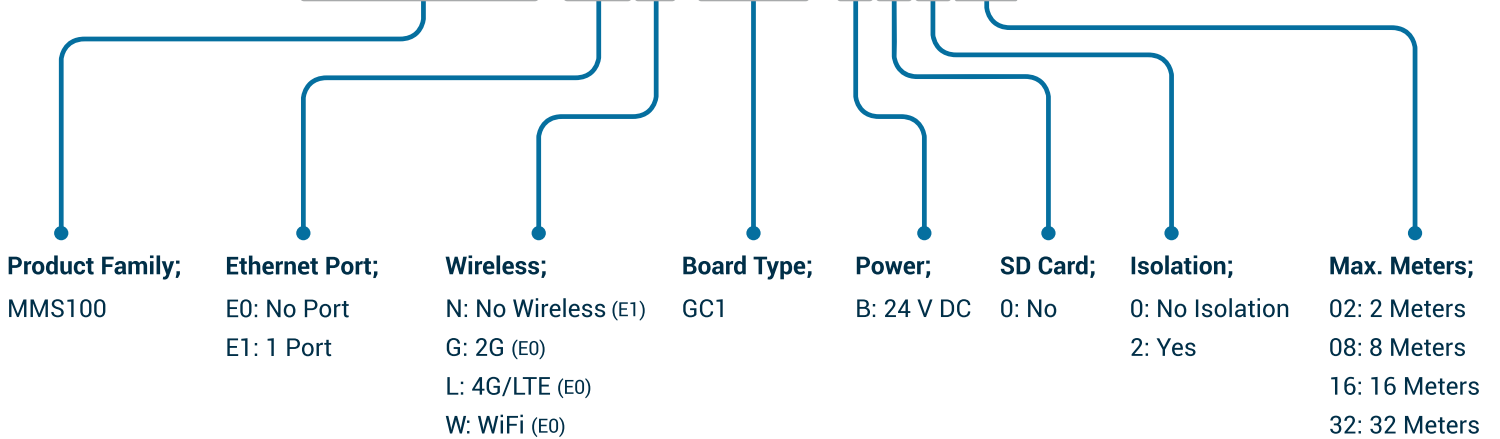
### Supply

- ▶ Supply Voltage; 9-36VDC
- ▶ Supply Current; 50 mA @ 24VDC

# MMS100 ORDER CODE



## MMS100-E1N-GC1-B0002



# MMS100 ORDER CODE

MODEL- <b>COM</b> -BOARD-OPTIONS			
COM	ETHERNET	WIRELESS	MINIMUM ORDER QUANTITY
E1N	1		8
E0G		2G	8
E0L		LTE/4G	8
E0W		WiFi	8

MODEL-COM- <b>BOARD</b> -OPTIONS			
BOARD	M-BUS (M-BUS EN1434-3)	RS485 (ESD Protection 18kV Contact Direct / 25 kV Air)	MINIMUM ORDER QUANTITY
GC1	1	1	8

MODEL-COM-BOARD- <b>OPTIONS</b>					
OPTIONS	SUPPORTED BOARD TYPE	POWER	RS485 ISOLATION	METERS NUMBER	MINIMUM ORDER QUANTITY
B0002	GC1	24V DC		2	8
B0008	GC1	24V DC		8	8
B0016	GC1	24V DC		16	8
B0032	GC1	24V DC		32	8
B0202	GC1	24V DC	✓	2	16
B0208	GC1	24V DC	✓	8	16
B0216	GC1	24V DC	✓	16	16
B0232	GC1	24V DC	✓	32	16

• When determining the minimum order quantity, the highest selection is taken as reference.



# DLMS MODBUS GATEWAY



Reading the data of electricity meters  
MODBUS according to OBIS codes  
writes to the map



## TECHNICAL SPECIFICATION

### Configuration and Management

- ▶ User-friendly configuration software
- ▶ Configuration via TCP / IP
- ▶ Configuration via USB
- ▶ Device search feature on the network
- ▶ Remote firmware update
- ▶ Monitoring settings with the Web Server feature
- ▶ Easy meter addition and adjustment with configuration software
- ▶ Select OBIS codes to be read from the meter
- ▶ Setting the counter to programming mode and custom command submission
- ▶ Matching MODBUS addresses with OBIS codes
- ▶ Ability to work as MODBUS Gateway

### Integrated Communication Ports

- ▶ 1 port RS485, 3 kV ESD protection, 1 port RS232 or 2 port RS485
- ▶ 1 port B type mini USB

### Optional Communication Ports

- ▶ GSM/GPRS, Class 12, Quad Band or GSM/LTE
- ▶ Ethernet; 10/100 Mbps
- ▶ Wi-Fi; 802.11b/g/n

### Communication Protocols

- ▶ Master communication protocols; IEC 62056-21, DLMS/COSEM, MODBUS TCP
- ▶ Slave communication protocols; MODBUS RTU, MODBUS TCP

### TCP Socket Extra Features

- ▶ Modbus TCP The TCP socket type on the slave side; Server or client
- ▶ Connection control and automatic reconnection

### Maximum Number of Connections

- ▶ Client connections per server; 1
- ▶ Number of client sockets per server; 16
- ▶ RS485 Line max. meters; 32
- ▶ RS232 Line max. meters; 1

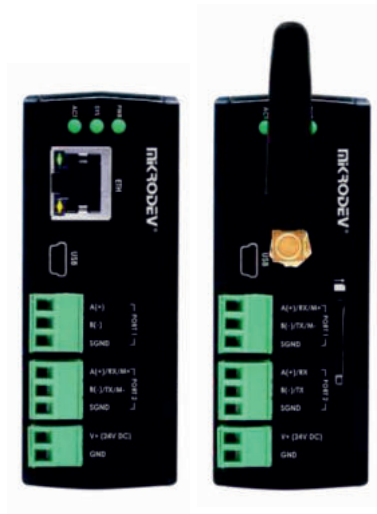
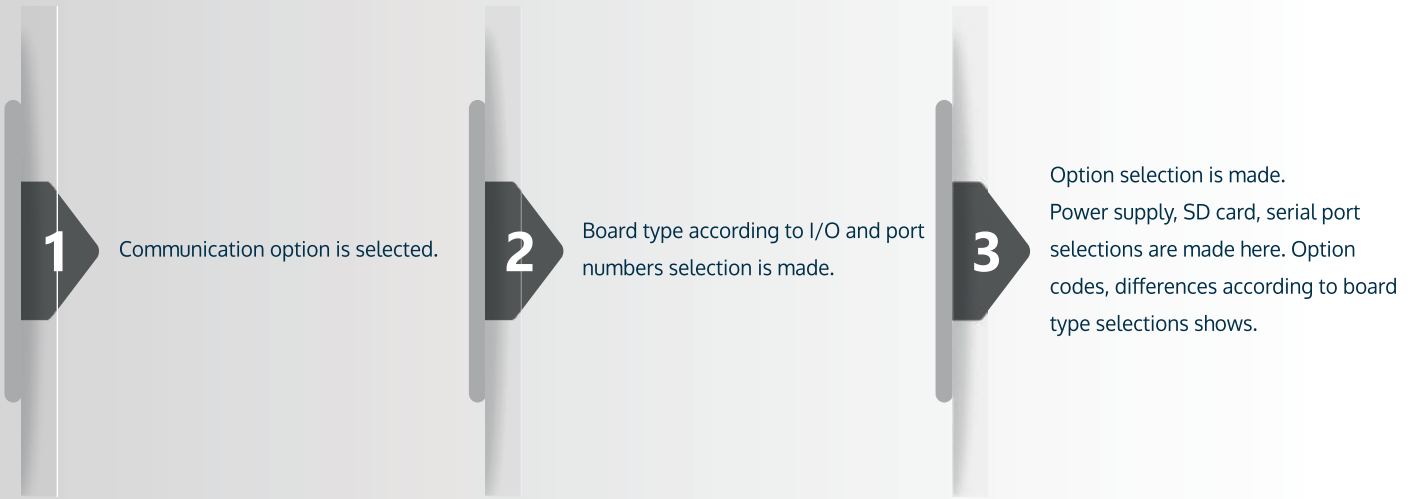
### LED Signals

- ▶ Power; 1 LED steady green
- ▶ System; 1 LED 1Hz green
- ▶ Connection; 1 LED 2Hz green

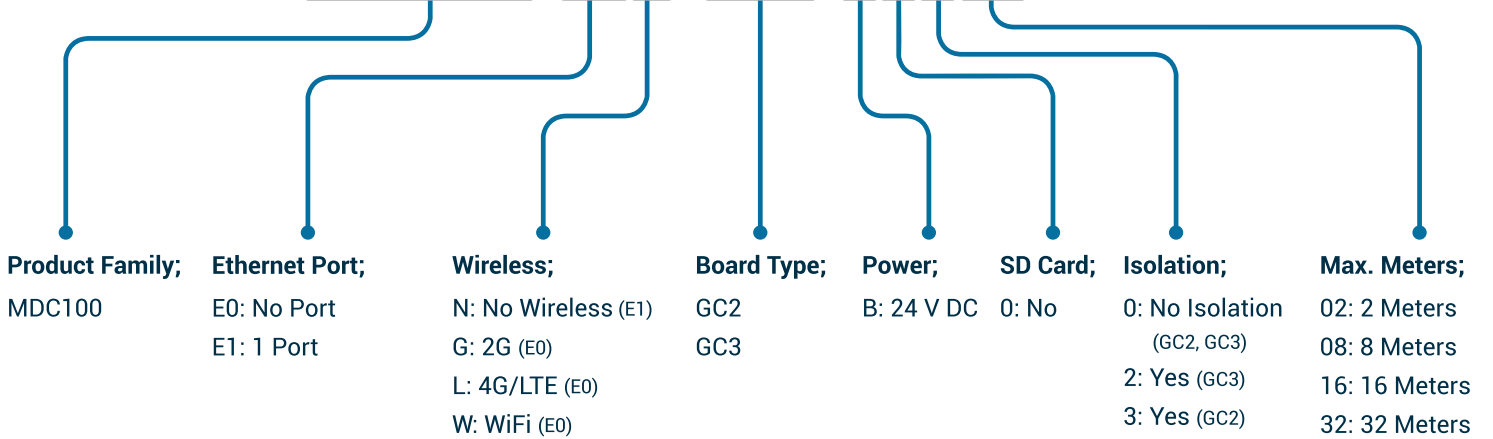
### Supply

- ▶ Supply Voltage; 9-36VDC
- ▶ Supply Current; 50 mA @ 24VDC

# MDC100 ORDER CODE



## MDC100-E1N-GC2-B0002



# MDC100 ORDER CODE

MODEL- <b>COM</b> -BOARD-OPTIONS			
COM	ETHERNET	WIRELESS	MINIMUM ORDER QUANTITY
E1N	1		8
E0G		2G	8
E0L		LTE/4G	8
E0W		WiFi	8

MODEL-COM- <b>BOARD</b> -OPTIONS			
BOARD	RS232 (ESD Protection 8kV Contact Direct / 15 kV Air)	RS485 (ESD Protection 18kV Contact Direct / 25 kV Air)	MINIMUM ORDER QUANTITY
GC2	1	1	8
GC3		2	8

MODEL-COM-BOARD- <b>OPTIONS</b>					
OPTIONS	SUPPORTED BOARD TYPE	POWER	RS232 ISOLATION	RS485 ISOLATION	MINIMUM ORDER QUANTITY
B0002	GC2, GC3	24V DC		2	8
B0008	GC2, GC3	24V DC		8	8
B0016	GC2, GC3	24V DC		16	8
B0032	GC2, GC3	24V DC		32	8
B0202	GC3	24V DC	✓	2	16
B0208	GC3	24V DC	✓	8	16
B0216	GC3	24V DC	✓	16	16
B0232	GC3	24V DC	✓	32	16
B0302	GC2	24V DC	✓	2	16
B0308	GC2	24V DC	✓	8	16
B0316	GC2	24V DC	✓	16	16
B0332	GC2	24V DC	✓	32	16

• When determining the minimum order quantity, the highest selection is taken as reference.

# ASSISTANT

Free of Charge

Mikrodev IOT Converters  
Configuration of product  
family settings



## TECHNICAL SPECIFICATION

### General Features

- ▶ Automatic detection of Mikrodev devices within the network
- ▶ Remote access to Internet products via TCP possibility
- ▶ You can save the list of settings and possibility to send
- ▶ Easy and practical access to products with standard USB cables
- ▶ Ability to define and save offline configuration
- ▶ Configuration export / import feature
- ▶ English or Turkish language options
- ▶ Quickly define operating modes for each product family interfaces

### MODBUS RTU/TCP GATEWAY

- ▶ Operating mode selection screens
- ▶ MOD-1; MODBUS TCP SLAVE - MODBUS RTU MASTER
- ▶ MOD-2; MODBUS RTU over TCP (TUNNEL)- MODBUS RTU MASTER
- ▶ MOD-3; MODBUS TCP MASTER - MODBUS RTU SLAVE

### M-BUS / MODBUS GATEWAY

- ▶ Multiple water, natural gas, calorimeter meter configuration screens
- ▶ Configure query mode based on serial numbers Possibility (Secondary addressing)
- ▶ Configure query mode based on slave ID information Possibility (Primary addressing)
- ▶ Automatic matching of MODBUS addresses with counter information
- ▶ Counter query period definition interfaces

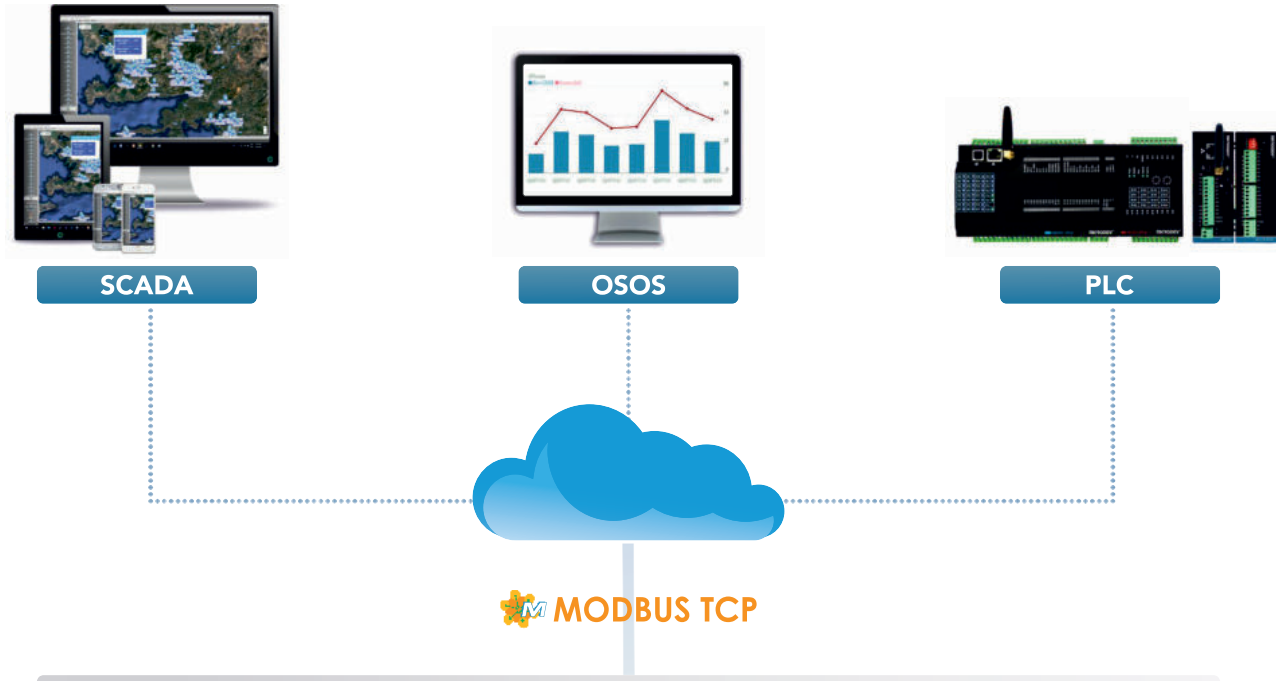
### DLMS / MODBUS GATEWAY

- ▶ Multiple electricity meter read configuration
- ▶ Identification interfaces for OBIS codes to be read remotely
- ▶ Mapping of selected OBIS codes and MODBUS addresses
- ▶ Possibility to define custom query commands
- ▶ Data acquisition / query period definition interfaces
- ▶ Ability to work as MODBUS Gateway

### SC100 / SERIAL DEVICE SERVER

- ▶ Transparent Communication
- ▶ Multiple Connectivity
- ▶ Bidirectional access via serial port and TCP/IP

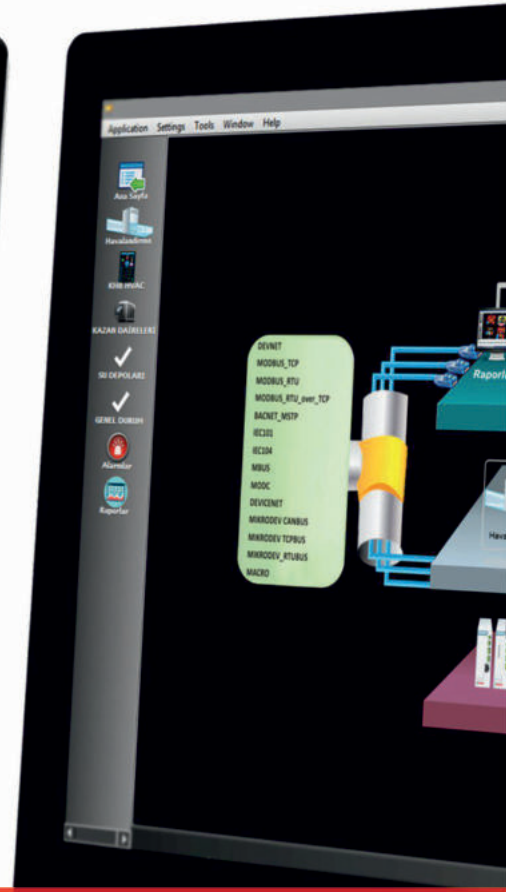
# IOT DÖNÜŞTÜRÜCÜLERİ



• n: There is no limit on the number of devices to be connected to the RS485 port. Limited by hardware.







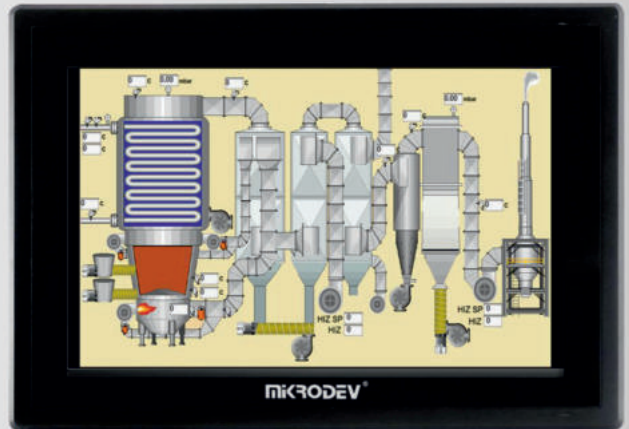
# OPERATOR CONTROL & MONITORING SYSTEMS

**HMI** (ViewSMART Series)

**SCADA** (ViewPLUS)

## HMI

Mikrodev Operator Panel products 7" High CPU power, precise touch programmable, such as display, PLC and thanks to high IO capabilities operator with your automation systems provides full communication between



### TECHNICAL SPECIFICATION

#### General Features

- ▶ Connection with many different devices
- ▶ Remote monitoring with mobile devices
- ▶ Multiple connections over Ethernet
- ▶ Download and update programs via USB and Ethernet
- ▶ FTP server feature
- ▶ With Mikrodev expansion I / O cards via CANBUS integration
- ▶ Quick and easy transfer of ViewPLUS SCADA projects
- ▶ Connect with ViewPLUS Operator Client
- ▶ Programmable with micro diagrams
- ▶ MDScript support
- ▶ Data recording with USB Host
- ▶ Log recording via SD card
- ▶ Alarm monitoring and analysis
- ▶ Easy setup; Panel mounting
- ▶ Power isolation
- ▶ Low energy consumption
- ▶ Can be used in high vibration environments
- ▶ Full sealing property
- ▶ CE certified

#### Screen

- ▶ Screen Type; 7" TFT LCD
- ▶ Color; 65536
- ▶ Multi touch - Capacitive LCD display
- ▶ Resolution; 800x480
- ▶ Touch panel type; 4 wire capacitive
- ▶ Large and bright display
- ▶ Quick start
- ▶ High strength
- ▶ Data visualization with animation and graphics
- ▶ Large symbol library
- ▶ Horizontal / vertical display support
- ▶ Video format support; MPEG1, MPEG2, WMV

#### Communication Ports

- ▶ 2 ports Ethernet; 1 Gbit speed
- ▶ 1 port USB port
- ▶ 2 port RS485 3 Kv ESD protection galvanic isolation
- ▶ 1 port RS232
- ▶ 2 port CANBUS

#### System Information

- ▶ Processor; ARM Cortex-A8 with 1GHz 3D graphics core
- ▶ SD card slot
- ▶ 1Ghz high CPU and Graphics capabilities
- ▶ The amount of memory; 96 MB Flash Disk
- ▶ 512 MB RAM
- ▶ 256 MB ROM

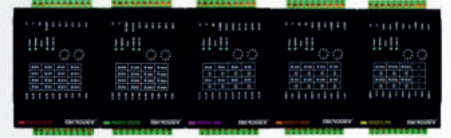
# HMI



CANBUS



XIO110



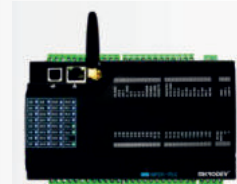
XIO211

ETHERNET / RS485-RS232

MODBUS TCP/RTU



MP110



MP211

## TECHNICAL SPECIFICATION

### Size Information

- ▶ 7"
- External dimensions (GxYxD); 8,2" x 5,5" x 1,3"
- Cutting dimensions (GxY); 7,5" x 4,8"
- Case: Plastic, smoked
- Weight; 250.5 g (without processor)

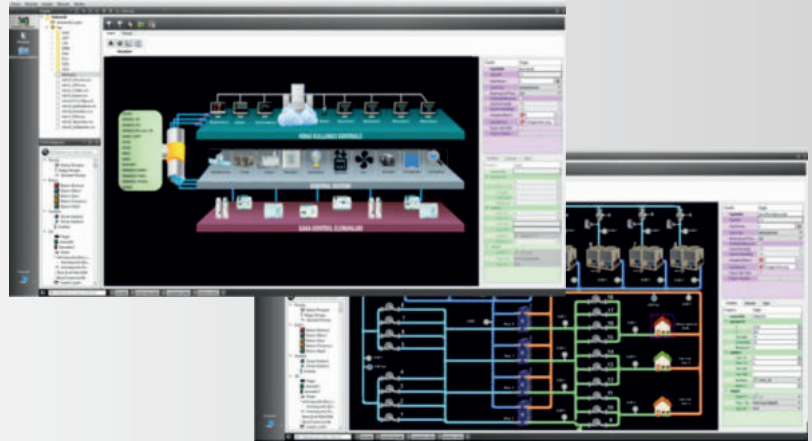
### Environmental Specifications

- ▶ Front protection; IP66
- ▶ Rear protection; IP20
- ▶ Operating temperature; 0 / 50 C
- ▶ Storage temperature; -20 / 60 C
- ▶ Moisture; 5 / 95 RH

PRODUCT	SIZE	ETHERNET	RS232	RS485	PLC FEATURE
ViewSMART700	7"	2	1	2	.
ViewSMART710	7"	2	1	2	Yes

## VIEWPLUS SCADA

Clear, Flexible, Scalable...



### TECHNICAL SPECIFICATION

#### SCADA Server

- ▶ Compatible with Windows, Linux and MacOS platforms
- ▶ Oracle and PostgreSQL support
- ▶ Secure SSL connection support with OperatorClients
- ▶ Unlimited Client Connection (Limited with server hardware)
- ▶ Wide range industrial and distributed network communication protocol support (MODBUS, IEC 104, DNP3 etc)

#### Component Management

- ▶ PNG, JPG, etc. component creation from popular formats
- ▶ Designing animation
- ▶ Create project-specific object libraries

#### SCADA Development Editor

- ▶ Integrated graphic object library
- ▶ Ability to create custom graphic library object
- ▶ Size, position, color, and captions of objects, associate with tags
- ▶ Smart and customized object with cript support
- ▶ Layered object architecture
- ▶ Different layer views for different zoom levels
- ▶ Multi-user development infrastructure
- ▶ Real-time graphics and trend plots
- ▶ Advanced tag and communication channel management infrastructure
- ▶ Database with instant query definition and results objects relating
- ▶ Page and object-based user right
- ▶ GIS integration with Google Maps

#### Operator Client

- ▶ Windows, Linux, MacOS, Android and iOS support
- ▶ Real-time charts
- ▶ Event and alarm monitoring
- ▶ Dynamic adaptation for different screen resolutions
- ▶ Multi-touch support for mobile platforms
- ▶ Multiple monitor support
- ▶ Web based reporting services
- ▶ Advanced reporting options

#### Alarm Management

- ▶ Unlimited alarms for any tag
- ▶ Alarm acknowledge and add note
- ▶ Alarm history and real-time alarm monitoring
- ▶ Show alarm notifications on components
- ▶ Direct link to the relates station from "alarms page"
- ▶ User alarm subscriptions
- ▶ Audio-visual alarm notifications
- ▶ Alarm e-mail notifications
- ▶ Coloring alarms according to the acknowledge state
- ▶ Adding alarm panels on OperatorClient main screen

#### User Management

- ▶ 256 different user authorization levels
- ▶ User groups with different authorization levels
- ▶ Alarm subscription for users
- ▶ E-mail notifications
- ▶ Guest, administrator and standard user configurations



## OPERATOR CONTROL & MONITORING SYSTEMS

		MDS-Lite	MDS-10C-150T	MDS-20C-500T	MDS-50C-2000T	MDS-100C-10000T	MDS Enterprise
Panel	Multi Platform Support (Windows, Linux, MacOS, Android, IOS)	Yes	Yes	Yes	Yes	Yes	Yes
	Integrated Symbol Object Count	100	100	100	100	100	100
	User Symbol Addition Interface	Yes	Yes	Yes	Yes	Yes	Yes
ViewPLUS SCADA Server	I/O Label Count	20	150	500	2000	10000	Unlimited*
	Virtual Label Count	20	150	500	2000	10000	Unlimited*
	Maximum Client Count	1	10	20	50	100	Unlimited*
	Maximum Alarm Count	20	150	500	2000	10000	Unlimited*
	JSON Message Support	Yes	Yes	Yes	Yes	Yes	Yes
	MSCADA Message Support	Yes	Yes	Yes	Yes	Yes	Yes
	SQLite Database	Yes	Yes	Yes	Yes	Yes	Yes
	PGSQL Database	Yes	Yes	Yes	Yes	Yes	Yes
	ODBC / MS SQL Database	-	-	-	Yes	Yes	Yes
	ODBC / MS SQL Database	Yes	Yes	Yes	Yes	Yes	Yes
	E-Mail Support	Yes	Yes	Yes	Yes	Yes	Yes
	Redundant SCADA	Double License Use					
Graphics	Page Count Addable	5	Unlimited*	Unlimited*	Unlimited*	Unlimited*	Unlimited*
	Number of Symbols Addable per Page	40	4000	4000	4000	4000	Unlimited*
Reporting	Server Side Reporting	40	4000	4000	4000	4000	Unlimited*
	Client Side Reporting	Yes	Yes	Yes	Yes	Yes	Yes
	Trend History	Yes	Yes	Yes	Yes	Yes	Yes
	Alarm Logs	Yes	Yes	Yes	Yes	Yes	Yes
	Event Logs	Yes	Yes	Yes	Yes	Yes	Yes
Development	Version Control Integration	Yes	Yes	Yes	Yes	Yes	Yes
	Script Support	MDVScript	MDVScript	MDVScript	MDVScript	MDVScript	MDVScript
	Recipes	-	-	-	-	-	Yes
Protocol Support	MikrodevBUS	Yes	Yes	Yes	Yes	Yes	Yes
	MODBUS	Yes	Yes	Yes	Yes	Yes	Yes
	OPC Server	***	***	***	***	***	***
	Web Server	***	***	***	***	***	***
	IEC 60870-5-101**	***	***	***	***	***	***
	IEC 60870-5-104**	***	***	***	***	***	***
	DNP 3**	***	***	***	***	***	***
	SNMP**	***	***	***	***	***	***

\*Processor Constraints might apply depending on available hardware elements such as power, memory.

\*\* MODBUS protocol support is delivered free of charge for all SCADA packages. Other protocols are provided separately than corresponding SCADA packages.

\*\*\*Please contact with our sales channels for price information.







**HEAD OFFICE**

Cumhuriyet Mh. Turgut Özal Cd. No:26 41420  
Çayırova - KOCAELI

E-Mail: [info@mikrodev.com](mailto:info@mikrodev.com)  
Phone: +90 850 217 34 28

**BRANCH**

TÜBİTAK Mam. Gebze Yerleşkesi Teknoloji  
Geliştirme Bölgesi 41700 D Blok No: 37  
GEBZE - KOCAELI

E-Mail: [info@mikrodev.com](mailto:info@mikrodev.com)  
Phone: +90 850 217 34 28

**UNITED KINGDOM BRANCH**

Mikrodev UK  
338a Regents Park Road,  
Office 3 And 4, London, England  
N3 2LN

E-Mail : [sales@mikrodev.com](mailto:sales@mikrodev.com)  
Phone : +44 7502259465

**MIKRODEV SOUTHERN AFRICA**

Marigold Cres, Rialto Mews,  
Unit 25, Marlboro Gardens,  
Sandton, Po:2063  
Johannesburg Gauteng  
South Africa

Web : [www.mikrodev.co.za](http://www.mikrodev.co.za)  
Phone : +27 76 717 4475  
+27 62 981 6096  
E-Mail: [info@mikrodev.co.za](mailto:info@mikrodev.co.za)



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