HECM
Modular Input/Output

19”, 1U RACK TYPE COMPACT DESIGN

48 PCS CHANNELS LED TECHNOLOGY

CUSTOMISED INPUT/OUTPUT QUANTITY & CURRENT RATING; FLEXIBLE STRUCTURE

VOLTAGE SUPERVISED OUTPUTS

INTERNAL EVENT MEMORY

STANDARD COMMUNICATION AND EVENT RECORDING FEATURE

RELIABLE PERFORMANCE UNDER ELECTROMAGNETIC INTERFERENCE

WORKING UNDER DIFFERENT VOLTAGE LEVELS. (24/48AND 110/220 VDC)

ISOLATED RS485 PORT AND MODBUSRTU PROTOCOL SUPPORT

IEC61850 PROTOCOL SUPPORT (OPTIONAL)

IRIG-B TIME SYNCHRONISATION WITH IRIG-B OPTIONAL CARD

HIGH QUALITY AND LONG LIFE POWER SUPPLY WITH PROTECTION FOR OVER TEMPERATURE, SHORT CIRCUIT, OVERCURRENT/OVERVOLTAGE.

HECM Modular Input/Output, is a flexible, functional and reliable product used in the protection and control automation systems

Our product, combining low cost with good quality, compact and unique design, is an unrivaled product with standard communication and event recording features.

It has electronic card alternatives for different applications. With the help of 3pcs moduler slots inside the unit, it has flexible structure which quantities of inputs/outputs, current ratings are decided upon customer requirements. Each input is isolated. It is protected by opto-coupler, harmonic suppressors and noise filtering software. Device can be safely used under the environment containing high electromagnetic noise which is continuously met. Outputs could be relay or solidstate type.

Having event recording features with 1 msec resolution and 2.000 event memory.

Response and release time for the environment with electromagnetic noise are to be programmed between 3-250msec.

RS485 communication port supports Modbus RTU and could be easily integrated to the SCADA systems. By installing IRIG-B Optional card, you can time synchronize it with Irig-B format.

By utilising IEC61850 Protocol Management Card (PMC) option, it can be used as a I/O module which is capable to connect to the IEC61850 compatible systems .

It can be used as I/O module of our HEEP3000 event recorder product .

General Data

19" Rack type Modular Structure

HECM Modular Input/Output, having 1U 19" physical structure, provides flexible, smart, functional and reliable solutions for protection and control automation.
It could be easily used in the wide area protection systems, thanks to the parallel working feature on RS485 bus.

Communication

The integrated RS485 serial communication port with galvanic isolation protection, supports Modbus RTU protocol and get easily adapted to the SCADA systems.
Via optional IEC61850 Protocol Management Card, it can connect to the IEC61850 compatible systems.

Internal Event Recorder

It is an ideal device for wide area protection systems with sequential event recording in 1ms resolution timestamps, enhanced storage(2.000 event buffer) and software supported reporting features.
Additionaly by installing optional IRIG-B card, you can time synchronize it with Irig-B format.

LED Indication

It has energy saving LED indication, providing high quality illumination. It provides isolated independent LED for each channel status and supervision and ultra bright illumination which could be seen even in the high lighting environments.

Full Software Configuration

With the help of ISPSİM™ software; just one response and release time valid for all channels as well as ModbusID setting can be programmed. Additionally all I/O channels could be tested in simulator screen and all of time stamped events could be viewed.

Inputs And Outputs

All inputs are isolated with opto-coupler, protected with varistor, having common return terminal and filtered. Fulfill EU Electromagnetic Compatibility (EMC) and Low voltage directive (LVD). False alarm possibility is completely eliminated. Maximum input current is 5mA, input voltage can be ordered as 24/48V, 110/220V DC upon request.
Outputs could be relay or solidstate type upon switching current requirements. Outputs are voltage supervision type, so that supervision LED corresponding this channel will indicate the situation, in case of any fault or wiring break in the channel.

Inputs and Outputs Alternatives

Input card alternatives for each slot ;

- 16 channels input card, 110/220Vdc
- 16 channels input card, 24/48Vdc

Output card alternatives for each slot;

- 8 channels, relay outputs card, breaking rating of 5A@220Vac/ 0,1A@250Vdc,
- 8 channels, relay outputs card, breaking rating of 8A@220Vac/ 0,2A@250Vdc,
- 4 channels, solidstate outputs card, breaking rating of 8A@250Vdc

Programmable Response and Release Time

There are "software programmable" response – release time which provide flexible and safe performance for protection against induced magnetic fields resulted from maneuvers i.e CB opening/closing especially. With the help of ISPSİMTMsoftware; Response and release time valid for all channel are set between 3msec and 250msec. Response time is set to 5msec, release time is set to 20msec by default.

High Quality Power Supply

HECM modular Input/Output, can be supplied with 2 different voltage level in order to meet the different alternatives used in the distribution system automation. It can be freely connected to the voltage levels of 24/48V, 110/220V DC. Power supply with the design of protection against shortcircuit, overcurrent/overvoltage and over temperature, guarantees long life

Case and Mounting

HECM, is provided in 1U, 19" Rack type case configuration. Having Standard dimensions of (340x45x192mm), with user friendly rack mounting system, it can be fast and safely mounted / dismantled.

Easy to Use

Inputs of HECM are activated by connecting contacts outputs of protection relay on the field to device. Whenever signal occurs at the input, LED Corresponding input indicates its channel status. Outputs are decided according to the ratings of the load to be switched. It is understood that relay dry contact is activated, by seeing that corresponding LED is ON. Additionaly it is understood that the wiring or the connected device is faulty, by checking voltage supervision LED.

Wiring and other details are provided in the instruction manual of the device.

Application Alternatives

HECM,

- As I/O module of our HEEP3000 event recorder product.
- By installing IRIG-B optional card, you can time synchronize it with Irig-B format.
- By utilising IEC61850 Protocol Management Card (PMC) option, it can be used as a I/O module which is capable to connect to the IEC61850 compatible systems.

Innovative Aspects

Innovative aspects of HECM are as follows:

- Input and output functions are combined in the same case.
- Quantity of inputs and outputs could be decided upon request.
- The risks of unnecesary maneuvers are decreased by internal fault control utilising voltage supervision.
- It enables operational safety, economical savings by terminating protection relay contact wiring (of 110/220Vdc) in the substation.
- By supporting IEC61850, it can easily communicate with IEDs in the field and with SCADA in the control room.

Order Codes

HECM TYPE CODE	*Input*	*Output*
HEIM-48I-DC110/220	**48**	
HEOM-24O-DC110/220-5A (ops 8A)		24
HECM-16I16O-DC110/220-5A (ops 8A)	**16**	**16**
HECM-32I8O-DC110/220-5A (ops 8A)	32	8
HECM-32I4O-DC110/220-8Adc	**32**	**4**

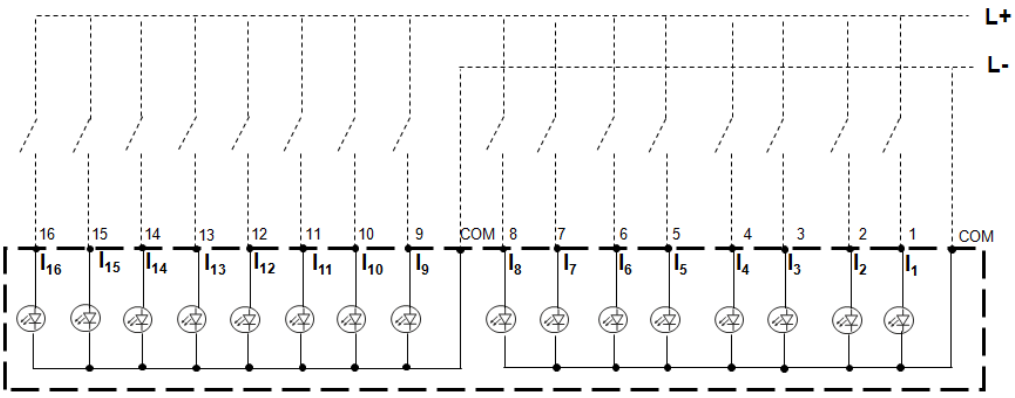
TECHNICAL SPECIFICATIONS

HECM	24/48Vdc	110/220Vdc
Suplly		
Supply Voltage range	18-72Vdc	88-242Vdc
Supply power	10w	
Input Card		
Qty of Inputs	16	
Type of Inputs	Optical Isolated, Varistor Protected, Common return terminal,transient filtered	
Input Curr. (Per channel)	Max. 5 mA	Max. 5 mA
Input Impedance (min)	15kΩ	85 kΩ
Input threshold voltage	12V ± %20	65 V ± %20
Transient Voltage	Common Mode: 1kV – Serial Mode: 2kV	
Response time	Programmable 3-250ms	
Release time	Programmable 3-250ms	
Connection type	Screwed, pluggable type terminals	
Wire size	12 AWG (2.5 mm)	

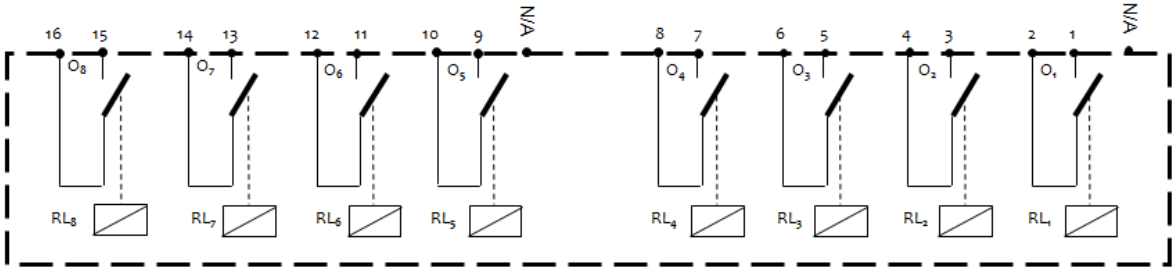
Output Card			
Type of Output Card	Relay 8A	Relay 5A	SolidState
Qty & Type of Outputs	8pcs NO dry contact	8pcs NO dry contact	4pcs SolidState
Qty. of LED for sup.input	8pcs of LEDs for supervised channels	8pcs of LEDs for supervised channels	4pcs of LEDs for supervised channels
Contact breaking current	8A@220Vac, 0,2A@250Vdc,L/R=40ms	5A@220Vac, 0,1A@250Vdc,L/R=40ms	8A@250Vdc,L/R=40ms

Communication	
Comm. Port/Protocol	RS485 / Modbus RTU (19200,8n1); For Scada connection, by default
Comm. Port/Proto. (ops)	RS485; optional for IRIG-B time server
Comm. Port/Proto. (ops)	RJ45 ethernet; optional for IEC61850 connection
Event Recorder	
Event Recorder	Yes for Input Channels
HECM-RTU Integration	Yes for Input Channels
User Interface	
LED indication	48 pcs of LEDs for channels & Supervision/ 4 pcs of LEDs for 2pcs Comm./ 1pcs LED for CONFIG / 1pcs LED for PowerSupply
Case	
Case type	1U, 19" Rack type
Dimensions(WxLXD)	340x45x192mm (dimensions of L shaped part for side mounting;20x45x56mm, thickness;2.2mm)
PanelMounting	Rack mounting type
Protection Class	IP20
Weight	Depens up on card configuration in the slots
Environmental Features	
Operating temperature	-20 C – +50 C
Storage temperature	-25 C – +80 C
Humidity	0-95% RH
Package	
Package type	Carton Box
Package	496x245x83mm
Weight	Depens up on card configuration in the slots

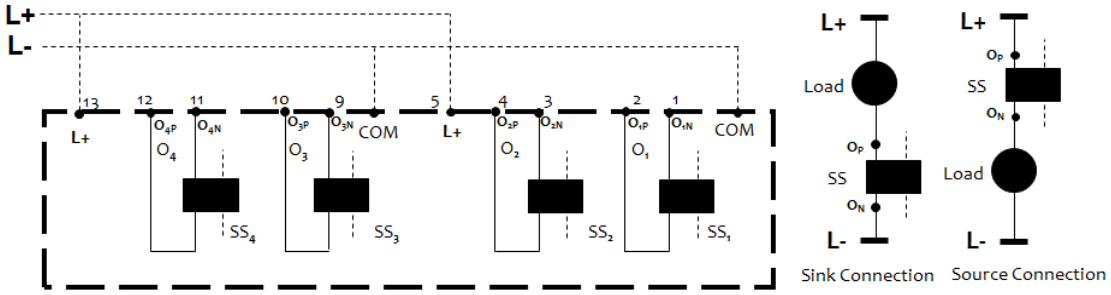
HECM TYPICAL CARD WIRING SCHEMES FOR I/O CARD ALTERNATIVES AND TERMINAL LAYOUTS



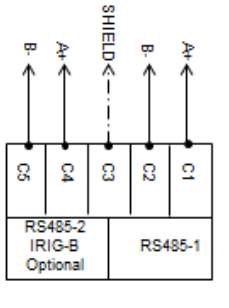
HECM/ 16 CHANNEL INPUT CARD WIRING



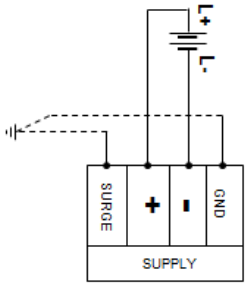
HECM 8 CHANNELS OUTPUT CARD WIRING



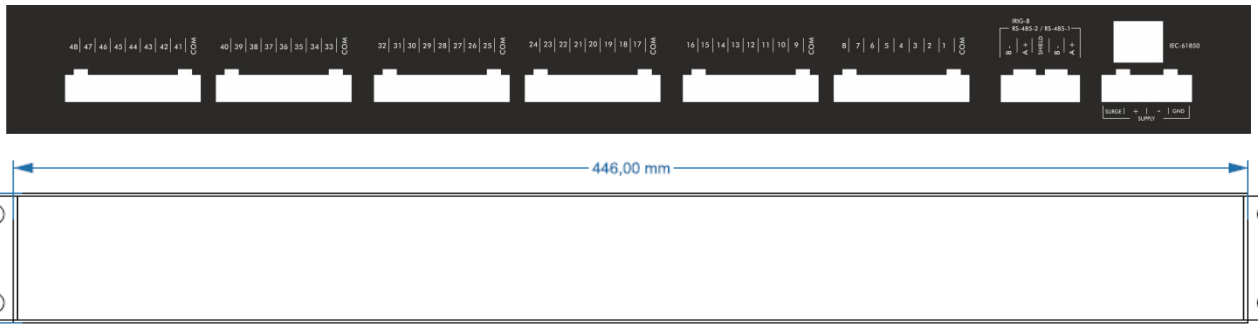
HECM/ 4 CHANNELS SOLIDSTATE OUTPUT CARD WIRING



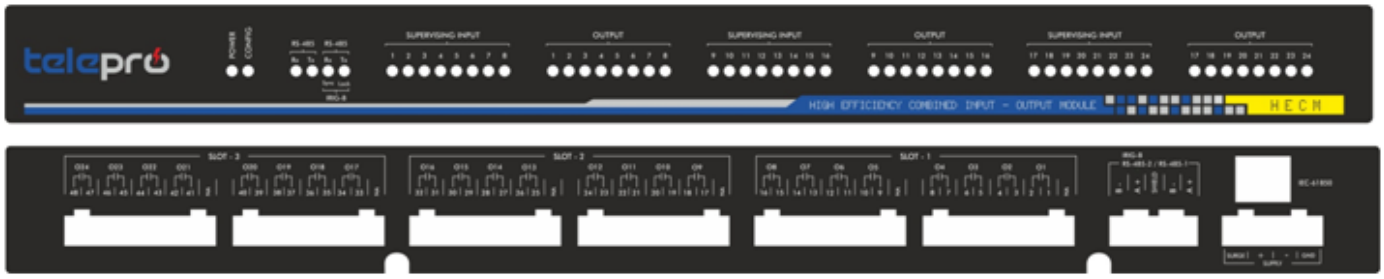
RS485 COMMUNICATION PORT



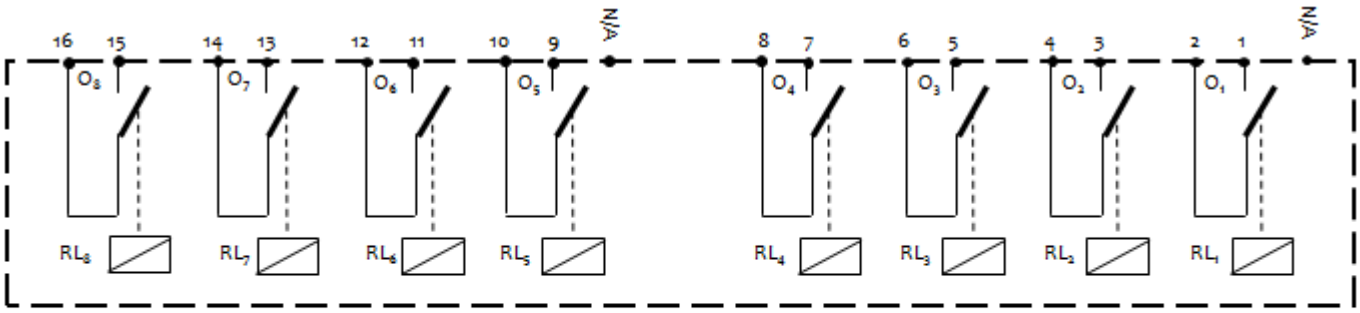
POWER SUPPLY TERMINAL BLOCK



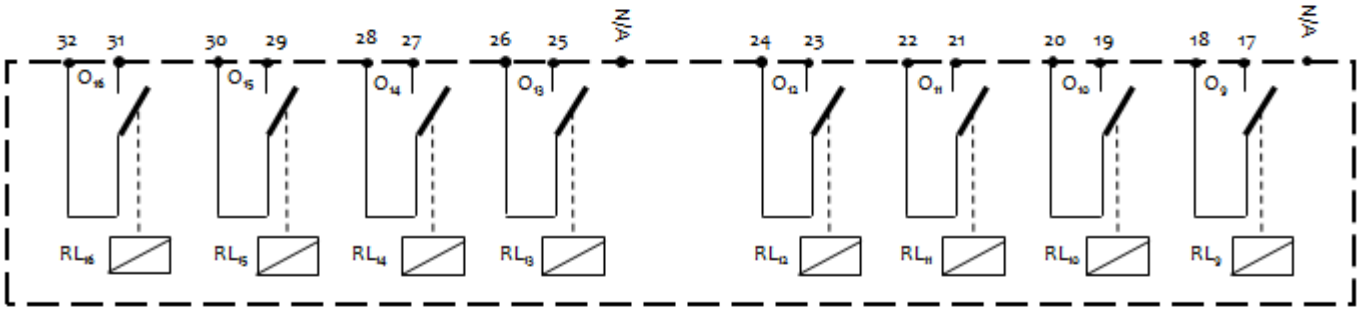
HECM CONFIGURATION EXAMPLE : HEOM- OUTPUT MODULE TERMINAL LAYOUTS & TYPICAL WIRING SCHEMES



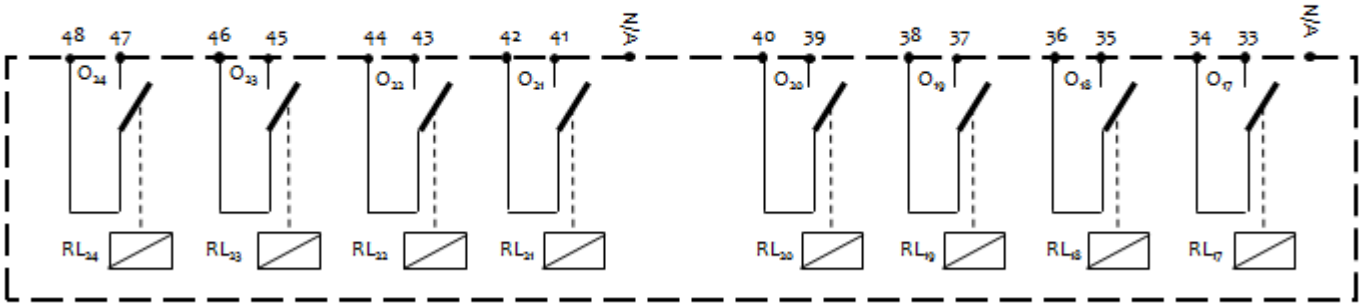
HEOM FRONT & REAR VIEW



HEOM SLOT-1 /8 CHANNELS OUTPUT CARD WIRING



HEOM SLOT-2/ 8 CHANNELS OUTPUT CARD WIRING



HEOM SLOT-3/ 8 CHANNELS OUTPUT CARD WIRING

ISO 9001-2000 Cert. No:689866

All products under 2year warranty againts manufacturing faults.

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