



ENEIDA .IO
EWS DTVI
DATASHEET

ROAD TO
ZEN[®]

Neighbourhood Grid Intelligence for
ZERO EMISSION NEIGHBOURHOODS

EWS DTVI DATASHEET

General Characteristics



PHYSICAL	EWS DTVI-g	EWS DTVI-m	EWS DTVI-g PMT (pole mounted solution)
Dimensions (WxHxD)	250 x 135 x 45 mm	250 x 150 x 56 mm	222 x 350 x 135 mm
Weight	600 g	635 g	1400 g
IP Grade	IP 65	IP 20	IP 65
Housing	ABS / PC (polycarbonate): Cyclopol C2950		PBT/PC blend. Polybutylene terephthalate (PBT)
Working Temperature	-20°C to 55°C		
Working Humidity	up to 95%, non-condensing		
Mounting Options	Magnetic, Wall mount	Din-rails clip	Pole mounted brackets
UV Rated			Yes

POWER SUPPLY

Nominal Voltage/ Frequency	240 VAC @ 50 Hz / 110 VAC @ 60 Hz		
Voltage Range	90 VAC to 264 VAC		
Power Consumption / Max Power Consumption	5 W / 13 W, with cellular communications ON	5W / 5W	5 W / 13 W, with cellular communications ON
External Power Supply	Yes as an option, 24 VDC		
Internal / External Backup	Last gasp / Yes, as option		

CURRENT INPUTS

Connector Type	M12 A-code 8P Female M12 A-code 12P Female	RJ 45 Socket RJ 50 Socket	Cable gland or M12 A-code 8P Female
Signal Type	Rogowski coil output di/dt		
Current Range	up to 600A per phase, other calibrations under request		
Input Range / Absolute Max	350 mVrms @ Full Scale / 700 mVrms		
Accuracy	Class 1, when using Eneida's Rogowski coils		
Number of Channels	6	8	2 + 2
No. of Inputs per Channel	Standard: 3 / Option: 4	Standard: 3 / Option: 4	Standard: 3 / Option: 4

VOLTAGE INPUTS

Connector Type	RD 24 4P Male	Terminal Block	Harting HAN 3A Male
Voltage Range	10 to 264 VAC		
Accuracy	Class 0,5		

Neutral current can be measured or calculated.

The busbar can be measured or calculated. The Current HD and THD are only available if the busbar is measured.

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COMMUNICATIONS PORTS

	EWS DTVI-g	EWS DTVI-m	EWS DTVI-g PMT (pole mounted solution)
Wireless	Standard: 2G/3G/4G Option: NB-IoT, LTE CAT-M, LoRa;	*	Standard: 2G/3G/4G Option: NB-IoT, LTE CAT-M, LoRa;
Cabled	*	Ethernet and RS-485	*
Local	Yes, Bluetooth for commissioning		
Protocols	Standard: HTTP / HTTPs / MQTTs / FTP Option: LoRaWan; NB-IoT, LTE Cat-M	Modbus RTU Modbus TCP/IP HTTP / HTTPS FTPS	Standard: HTTP / HTTPs / MQTTs / FTP Option: LoRaWan; NB-IoT, LTE Cat-M

* Not available on standard version.
Althought modular nature of the device allows it to be converted to the available comms versions in this document

COMPLIANCE

EMC	IEC 61326-1
Safety	CAT IV 300V according IEC 61010-1
Enviromental	IEC 60068-2
Product	PMD-SD according IEC 61557-12

CURRENT SENSORS

	MICRO-flex™	PRO-flex™
Type	Tri-head Flexible Rogowski coils	
Probe Cable Length / Diameter	160 mm / 6 mm	406 mm / 9,9 mm
Cable Aperture	50 mm	120 mm
Heads to Splitter Length	0,5 m standard, other lengths under request	
Output Cable Total Length	1,5 m standard, other lengths under request	
Connector Plug	M12 A-code 8P Male or RJ 45 Plug	
Operating Temperature	-20°C to 65°C	
Operating Humidity	15 to 85% non-condensing	
IP Rating	IP 65 (heads to connector with M12 or just the heads)	
Heads Colour	Standard: Brown, Black, Grey or Red, Yellow, Blue	
Output per kA @ 50 Hz	14 mV	85 mV
Standard Calibration per Head	500A / 600 A / 1500 A / 3000 A	
Safety Standards	CAT IV 600V according EN61010-1, EN61010-2-032	

DATA PROVIDED

EWS DTVI can provide all relevant electrical parameters from the distribution network. All the inputs are sampled synchronously without gaps at 8kHz sampling rate. The refresh rate for voltage and current is half-cycle (10ms @ 50 Hz) and one second for all other parameters. Data is then aggregated and published at the configured periods. The Table below synthesises all the data that can be provided.

PARAMETER	Feeder	Busbar
Voltage Ph - N		Yes
Ph Current	Yes	Yes
N Current	Yes	Yes
+/- Phase Active Power	Yes	Yes
+/- Phase Reactive Power	Yes	Yes
+/- Phase Apparent Power	Yes	Yes
+/- Total Active Power	Yes	Yes
+/- Total Reactive Power	Yes	Yes
+/- Total Apparent Power	Yes	Yes
+/- Phase Power Factor	Yes	Yes
+/- Total Power Factor	Yes	Yes
Current THD	Yes	Yes
Voltage THD		Yes
Current HD up to 40th	Yes	Yes
Voltage HD up to 40th		Yes
+ Phase Active Energy	Yes	Yes
- Phase Active Energy	Yes	Yes
+ Phase Reactive Energy	Yes	Yes
- Phase Reactive Energy	Yes	Yes

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SPECIAL FEATURES

EWS DTVI has a Bluetooth module that simplifies commissioning of each unit by the user seamlessly, guiding the user with all relevant information across the installation process, such as:

- Feeder name;
- Fuse / Circuit breaker nominal current;
- Transformer phase rotation and nominal power;
- Site ID and location.

The Mobile App also allows the user to validate the installation by running an installation check.

Moreover, this Bluetooth module enables communication with other sensors inside the substation, such as:

- Flood level indicator;
- Ambient temperature and humidity;
- Transformer temperature;
- Intrusion (all of these devices are available from Eneida.IO portfolio).

EWS DTVI is primarily self-powered by the voltage signals and has a small energy backup in order to alert the power failure. Additionally, it can be powered by an external power supply if the substation has a secure DC power supply. Optionally, if the substation does not have a secure voltage and should EWS DTVI be required to continue working after a voltage interruption or any another abnormal event, a power backup module composed of Supercapacitors can be connected to EWS DTVI.

EWS DTVI has the capability to remotely upgrade its firmware over the air or Ethernet port. It can therefore be configured remotely and benefit from data logger functions (2 configurations available: time between data aggregation and time between communications)

LV APPS

EWS DTVI allows DSOs the ability to run specific **Low Voltage Applications (LV Apps)**. These Apps can be remotely activated for a period of time or run indefinitely. Furthermore, all the Apps can run simultaneously. The Apps available from Eneida include:

- Current Fault Detection & Location (Incl. Fault Level Indicator),
- Dead Section/ MV Fault Location,
- Network Power Quality (according to IEC 61000-4-30, class S),
- Grip Topology Mapping,
- Energy Balance (Technical & Non-Technical Losses Monitoring and Location),
- WFC - Wave Form Capture capability.



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