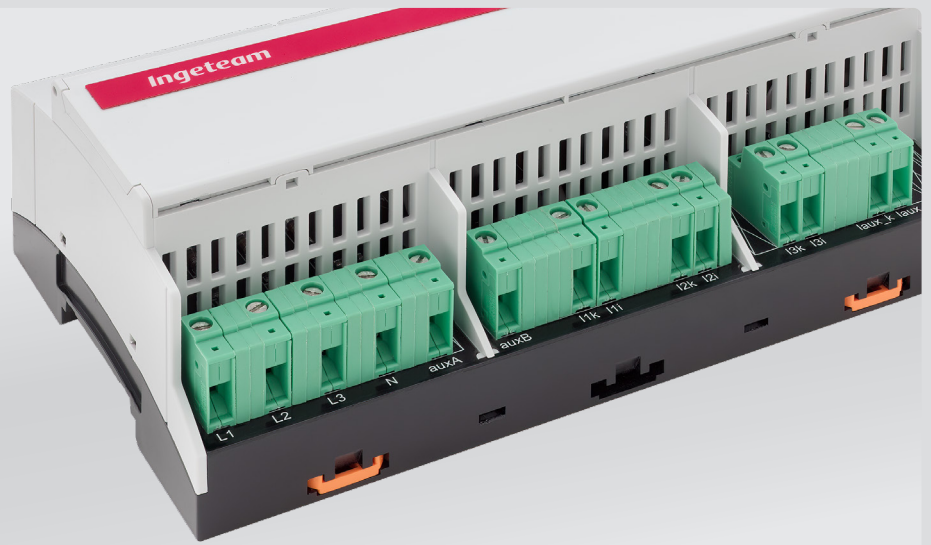# INGESYS

GMD

Grid Measurement Device

INGESYS™ GMD is a solution for energy metering, which integrates the network measurements into the automation solution, allowing correlation with the operating data. The meter processes the measurements to provide the calculated values to the system with cycle time synchronisation.

The system integrates the measurement of 4 voltages and 4 currents, and the fourth channel can be configured as an isolated system for use in synchronisation between networks, thanks to the measures of phase shift between channels.

Energy measurement solution

Main characteristics

- Measurements: 4 voltages (690Vac); 4 currents (5A)
- Integrated measurements: rms, frequency, power, harmonics...
- High frequency resolution: 1mHz
- Communication with Ethernet-based system: INGESYS ETSX
- DIN rail mounting

Benefits

✓ Integration of network measurements in the system

✓ High measurement update speed

✓ Integration into existing communication networks

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Ingeteam

Measurements
Single-phase
Split-phase (two-phase system)
3-wire, balanced load
3-wire, unbalanced load
3-wire, unbalanced load, Aron connection
4-wire, balanced load
4-wire, unbalanced load
4-wire, unbalanced load, Open-Y
Comparative signals from generator and network, for synchronisation and machine coupling

Technical Characteristics	
Current inputs	
Rated current	1A ... 5A, selectable by SW
Maximum current	7.5A (sinusoidal)
Consumption	$\leq I2 \times 0.01\Omega$ per phase
Overload	10A continuous 100A, 10 x 1s at intervals of 100s
Voltage inputs	
Rated voltage	$57.7V_{LN}$ ... $400V_{LN}$, $100V_{LL}$ ... $693V_{LL}$, SW selectable
Maximum voltage	$480V_{LN}$, $832V_{LL}$ (sinusoidal)
Consumption	$\leq U^2 / 3M\Omega$ per phase
Impedance	$3M\Omega$ per phase
Overload	$480V_{LN}$, $832V_{LL}$, continuous $600V_{LN}$, $1040V_{LL}$, 10 x 10s at 10s intervals $800V_{LN}$, $1386V_{LL}$, 10 x 1s at 10s intervals
Frequency	
Rated frequency	50Hz, 60Hz
Frequency ranges	45Hz ... 55Hz, 55Hz ... 65Hz
TRMS measurement	Up to harmonic 40
Accuracy	
Conditions	15ºC ... 30ºC
Voltage, Current	±0.1%
Frequency	±(0.001Hz)
Temperature drift	0.5x of the measurement error per 10ºC
Long-term drift	0.5x of the measurement error per year
Power supply	
Voltage	24Vdc, [+25%, -25%]
Communication	
Type	Ethernet 100baseT
Connector	RJ45

Environmental conditions	
Operating temperature	-40ºC to +70ºC test temperature -10ºC to 55ºC recommended temperature for long term use
Storage temperature	-40ºC to 70ºC