Energy Management

Balanced Edge and Endpoint Computing

Grid Feed-in and Demand-side Management

Micro-service SaaS

IOT-Ready

Allrounder of Distributed Energy Management for Embedded Energy Networks

INFICONTROL5 Solution

infinode.

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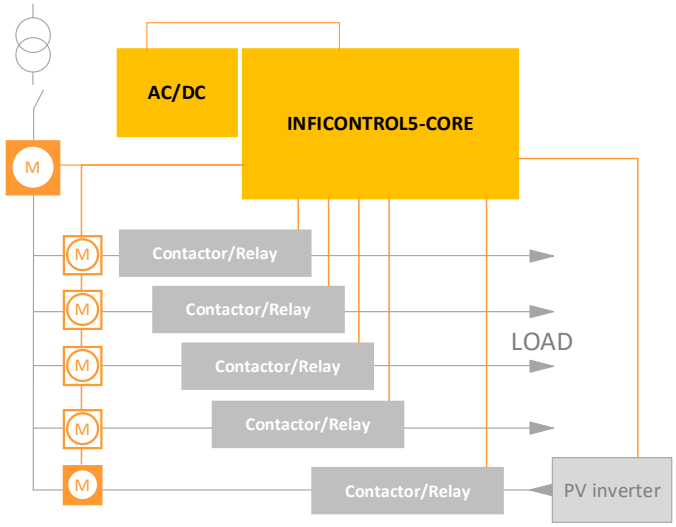
IOT-Ready

The INFICONTROL-5 Dynamic Logic Control panel solution integrates the functionalities of metering, load management and control of distribution energy resources (DER). Leveraging the customizable logic framework of the INFICONTROL-5, users can easily define the priorities and control logics for both loads and distributed energy sources. This aids businesses and residential users in achieving objectives such as carbon reduction, maximizing the utilization of renewable energy, and implementing grid export limit.

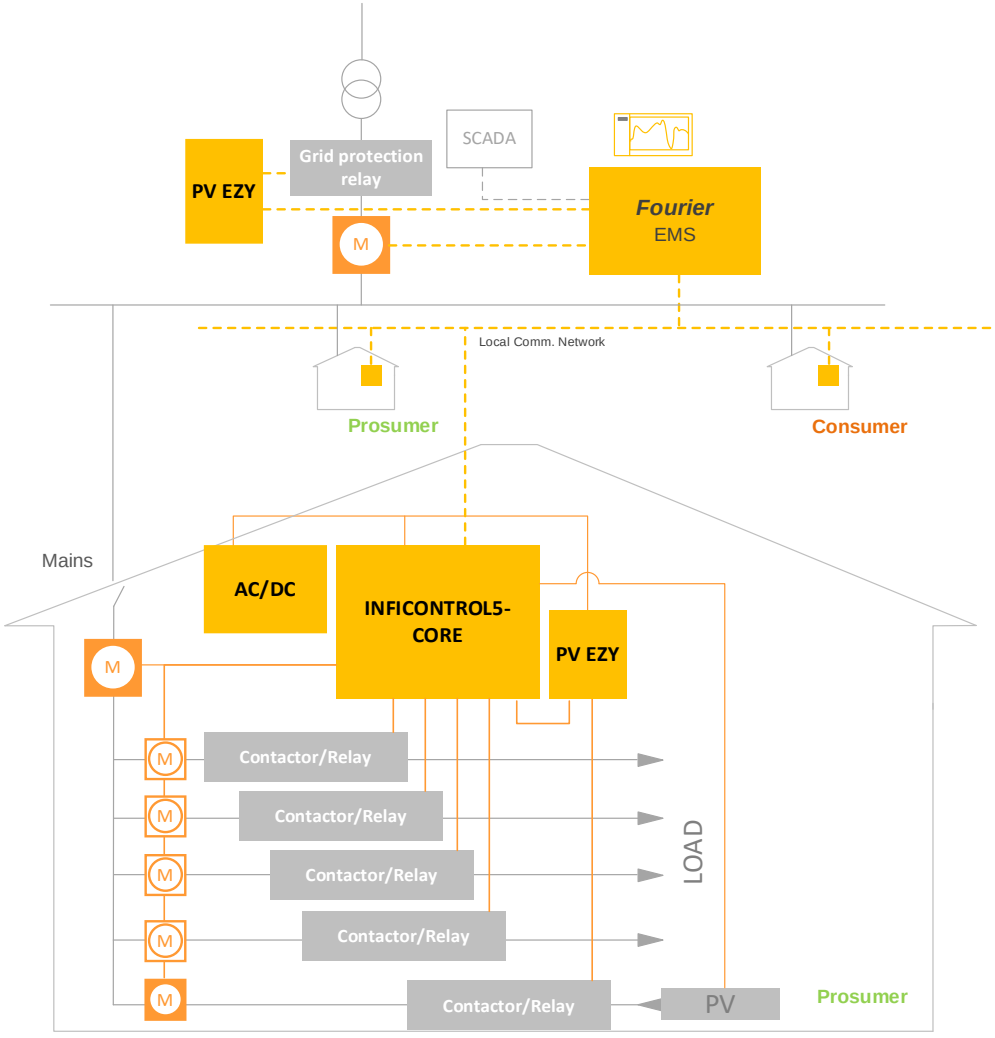
A typical INFICONTROL-5 consists of an INFICONTROL5-CORE (using third party's PLC controller, and software developed by INFINODE) edge controller, 2(net of main, solar PV)+N(loads) meters/metering circuits (either three phase or single phase), an optional PV Ezy solar wireless remote controller for embedded network scenarios, contactors/relays for load and PV control, as well as circuit breakers, residual current protection devices, current transformers and power supplies for the aforementioned controllers. The controller software runs on the INFICONTROL5-CORE edge controller.

The INFICONTROL-5 can be used either as a standalone panel solution or part of the Fourier energy management system (EMS) for multi-dwelling

INFICONTROL5-CORE	PV EZY	METERS	FOURIER EMS	iDLC3350
				 Please enquire



INFICONTROL5 as a standalone panel solution



inficontrol5 and FOURIER EMS in a multi-dwelling embedded energy network

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Features and Benefits of Using INFICONTROL5

INFICONTROL-5 alone:

- **Multi-circuit Energy Measurement**
    - Harmonised metering data and third-party meters to support different switchboards
    - Power demand calculation
    - Up to 15 single phase loads/DER or 5 three phase loads/DERs or a mix of both
    - Supports both RS485 or Ethernet metering devices
- **Load and DER Control Logic**
    - Demand management, load shedding, export control, load shifting, all in one controller, plug-setup-play
    - Pre-defined third-party DER interface, configuration via the Polaris PC software
- **Easy Deploy and Operation**
    - Configuration via the Polaris PC software
- **M2M Interface**
    - RS485 interface (Modbus master)
    - Ethernet interface (Modbus TCP server, Ethernet client)
    - Digital inputs/digital outputs
- **Security**
    - Password protection
    - Configurable Modbus TCP port

More Benefits if Used with FOURIER EMS and PV EZY:

- **Remote and Wireless Grid Protection Mapping**
    - For multi-dwelling embedded networks with an aggregated solar PV higher than 30kVA where grid protection relay is required per the AS4777 standard
    - Seamlessly mapping of the relay output of grid protection relay to each PV point
    - Centralized monitoring of PV and grid protection relay mapping
- **Data Collection, Storage and Analysis**
    - Circuit level general power and energy data logging up to 5 years
    - Circuit level energy usage anomaly analysis
    - Potential third party analysis service expansion
- **Dynamic Demand and Export Control for Embedded Network**
    - Site level demand and export control by managing each INFICONTROL-5 within the network
- **Cloud Interface and Data Visualization**
    - Cloud access to site level data and visualization for a better customer engagement
    - Pipeline for potential servicing business build-up

When Using INFICONTROL5 Makes Sense

- Customer (both commercial and residential) wants a better control of their loads and DER, a better control of when to turn-on their loads to maximize the usage of clean energy and reduce their energy bill
- Embedded network where the aggregated solar PV is higher than 30kVA where the extra grid protection requirements apply
- Embedded network with both prosumers and consumers where export limit applies, and the embedded network manager needs a better and smart way of controlling the export of solar energy while also wants to maximise the solar PV generation

Operation Philosophy

INFICONTROL5 can be implemented both as a standalone system, or as part of the **FOURIER EMS**. Whichever way it is implemented, the fundamental operation philosophies are the same, which is provided by the INFICONTROL5-CORE controller.

Each INFICONTROL5-CORE controls one ***solar PV*** (optional) and five loads, and the loads are further categorised into ***demand-side response load*** or ***smart load***, which is configurable.

Each INFICONTROL5-CORE has ***demand limit***, ***export limit***, and ***smart load thresholds***. The demand limit and export limit are the two limits where the managed property can draw from and export to the parent power grid (whether utility grid or embedded power network), while the smart load thresholds are the instantaneous power for certain loads ('smart load') to turn ON/OFF, especially when there is surplus solar generation. The idea of introducing smart load is to locally make the most use out of solar generation.

It shall be noted that if the managed property does not have solar PV installed yet, the INFICONTROL5 will work like a demand side management solution, and the user can always retrofit a solar PV system later.

USING WITH FOURIER EMS AND PV EZY

> **When using INFICONTROL5-CORE within an embedded network along with other INFICONTROL5-COREs, FOURIER EMS, AND PV EZY, the FOURIER EMS will constantly update the demand limit, export limit of each INFICONTROL5-CORE, which is calculated based on the status of the power consumer/prosumers within the embedded network.**