

InteliGen^{NT}

GENERAL PURPOSE HIGH-END GEN-SET CONTROLLER

InteliGen^{NT} is a comprehensive controller for both single and multiple gen-sets operating in standby or parallel modes. Compact construction is optimized for these purposes and various HW modifications allow customers to select the optimum type for a particular application.

A built-in synchronizer and digital isochronous load sharer allow a total integrated solution for gen-sets in standby, island parallel or mains parallel. Native cooperation of up to 32 gen-sets is a standard feature.

InteliGen^{NT} supports many standard ECU types and is specially designed to easily integrate new ones.

A powerful graphic display with user-friendly controls allows any user whatever their ability to find the information they need.

ComAp is able to offer customized firmware solutions.



Benefits

- Support of engines with ECU (Electronic Control Unit)
- Excellent configurability to match customers' needs exactly
- Complete integrated gen-set solution and signal sharing via CAN bus – minimum external components needed
- Many communication options – easy remote supervising and servicing
- Perfect price / performance ratio
- Gen-set performance log for easy problem tracing

Features

▶ InteliGen^{NT}

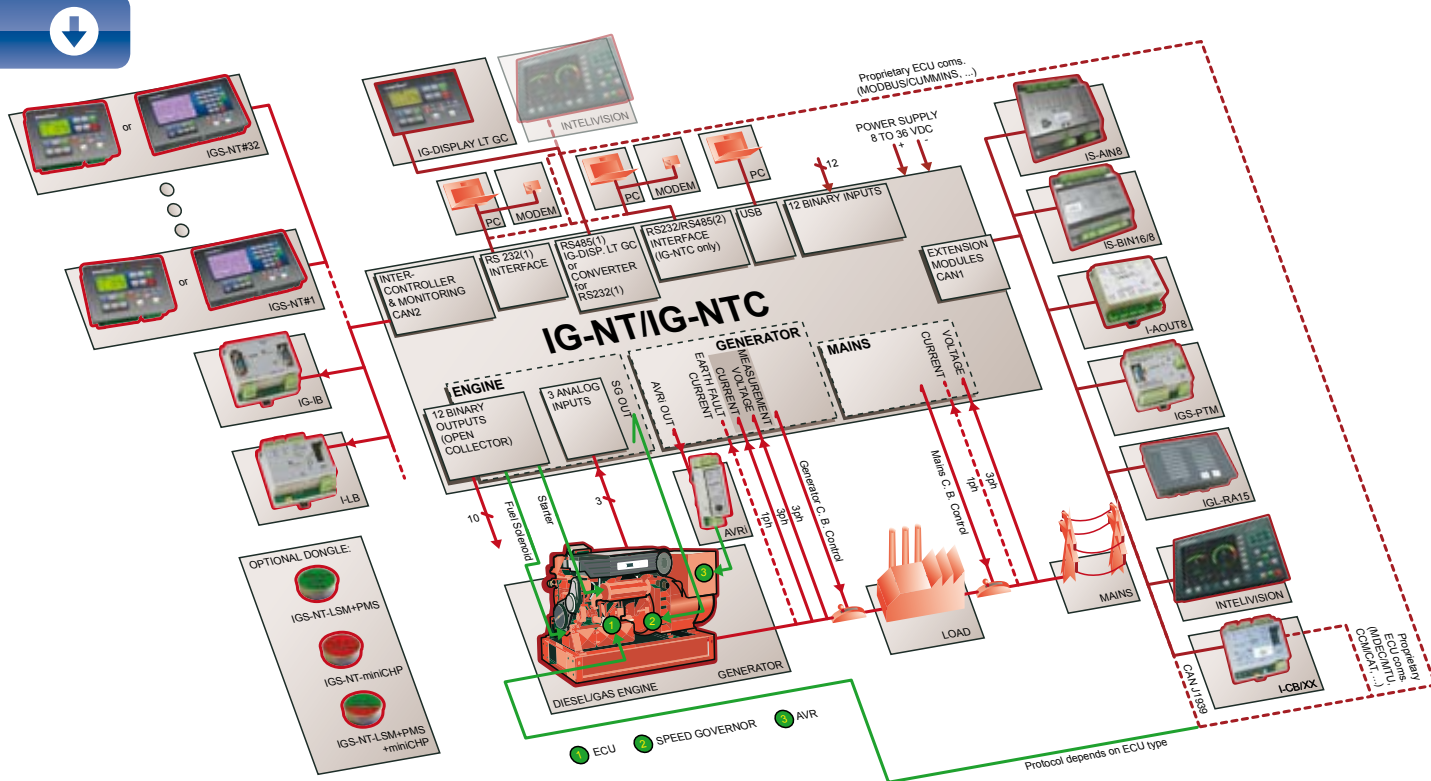
- Support of engines with ECU (J1939, Modbus and other proprietary interfaces); alarm codes displayed in text form
- AMF function
- Automatic synchronizing and power control (via speed governor or ECU)
- Baseload, Import / Export
- Peak shaving
- Voltage and PF control (AVR)
- Generator measurement: U, I, Hz, kW, kVAr, kVA, PF, kWh, kVAh
- Mains measurement: U, I, Hz, kW, kVAr, PF
- Inputs and outputs configurable for various customer needs
- RS232 / RS485 interface with Modbus support; Analog / GSM / ISDN / CDMA modem support; SMS messages; ECU Modbus interface
- Event-based history (up to 500 records) with customer-selectable list of stored values; RTC; statistic values
- Integrated PLC programmable functions
- Interface to remote display unit (IG-Display)
- Dimensions 180 × 120 mm (front panel)
- Sealed to IP65

▶ InteliGen^{NTc}

- All items from InteliGen^{NT} plus:
 - Selectable measurement ranges for AC voltages and currents – 120 / 277 V, 0–1 / 0–5 A
 - Secondary isolated RS232 / RS485 interface
 - USB 2.0 slave interface

**GENERAL PURPOSE
HIGH-END GEN-SET
CONTROLLER**

InteliGen^{NT}



Integrated fixed and configurable protections Comm. modules and PC tools Extension modules and rem. displ.

- 3 phase integrated generator protections (U + f)
- IDMT overcurrent + Shortcurrent protection
- Overload protection
- Reverse power protection
- Earth fault protection
- 3 phase integrated mains protections (U + f)
- Vector shift protection
- All binary / analog inputs free configurable for various protection types: HistRecOnly / Alarm Only / Warning / Off load / Slow stop / BreakerOpen&Cooldown / Shutdown / Mains protect / Sensor fail
- Additional 160 programmable protections configurable for any measured value to create customer-specific protections

- **I-CR** see page 50
- **IG-IB** see page 51
- **I-LB / I-LB+** see page 52
- **I-CB** see page 53
- **InteliMonitor** see page 58
- **InteliSupervisor** see page 59
- **WinScope** see page 59
- **GenConfig** see page 60

- up to 4x **I-AOUT8** see page 44
- **IGL-RA15** see page 46
- up to 4x **IGS-PTM** see page 47
- up to 10x **IS-AIN8** see page 48
- up to 4x **IS-BIN16/8** see page 49
- up to 2x **InteliVision** see page 54
- **IG-Display LT GC** see page 56

Upgrade kits

- **IGS-NT-LSM+PMS dongle:**
 - Enables Multiple isolated parallel or multiple parallel with mains
 - Power management operation (with CAN bus)
 - Digital Load Sharing
 - Digital VAr Sharing
- **IGS-NT-miniCHP dongle:**
 - More PLC functions
- **IGS-NT-LSM+PMS+miniCHP dongle:**
 - Combination of the both dongles

HW modification codes

- Order code IG-NT (LT) (GC) (Marine) or IG-NTC (LT) (GC) (Marine)
- LT** = Low Temperature; display equipped with heating foil for operation down to -30°C
GC = Graphical Characters; one additional font (12 x 12, e.g. Chinese or Korean) can be used on the display
Marine = Type approved version for Marine

Switzerland

Power plant

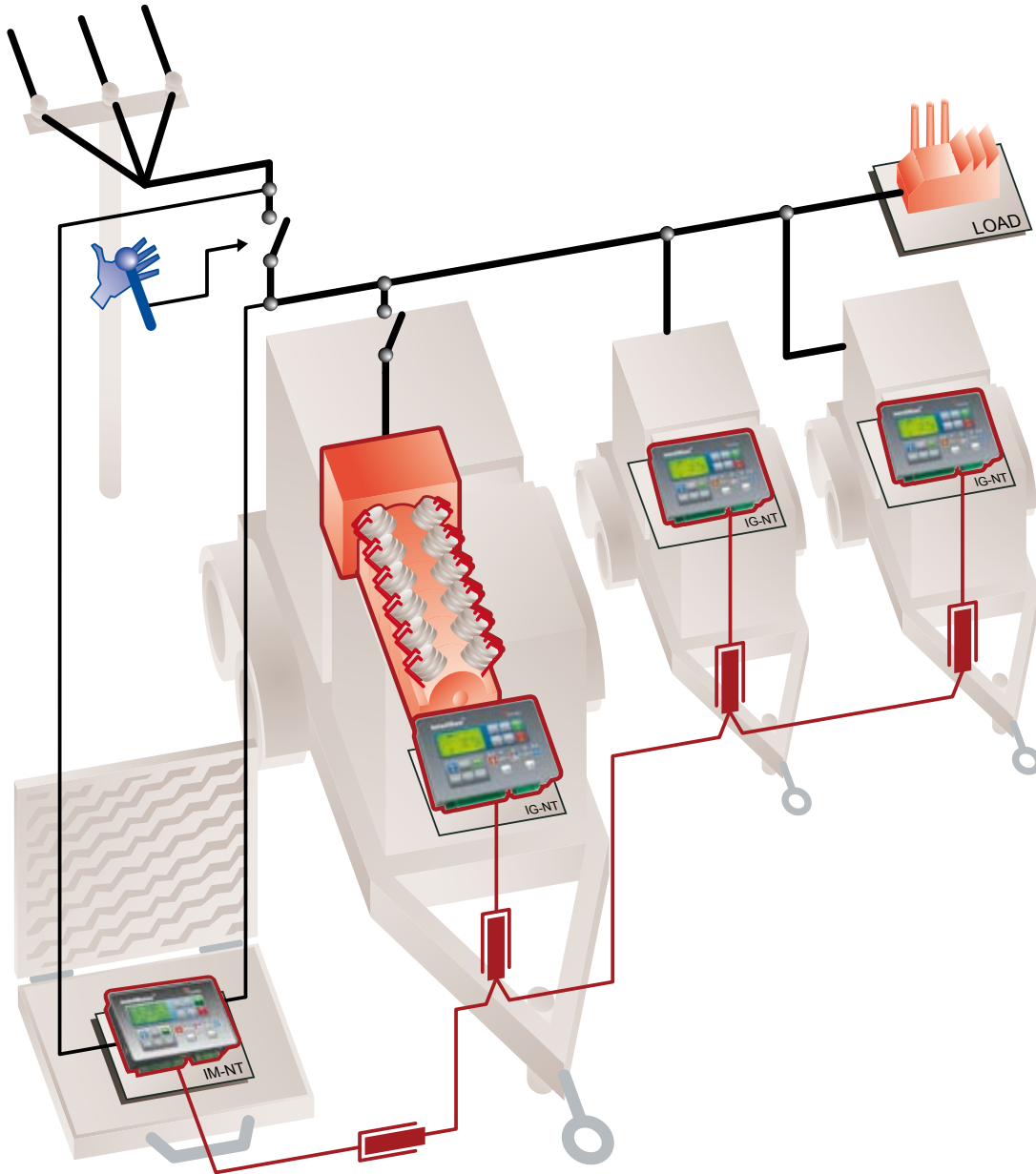
The power plant stands in the build-up area "Am Mark" in Heerbrugg and provides power for the nearby residential apartments and a large shopping centre.

The plant features an Olympian GEP400-2 diesel gen-set producing 400 kVA with control and monitoring from ComAp using InteliGen^{NT} unit in MINT application with two InteliMains^{NT} units in MGCB application.





Rental sets



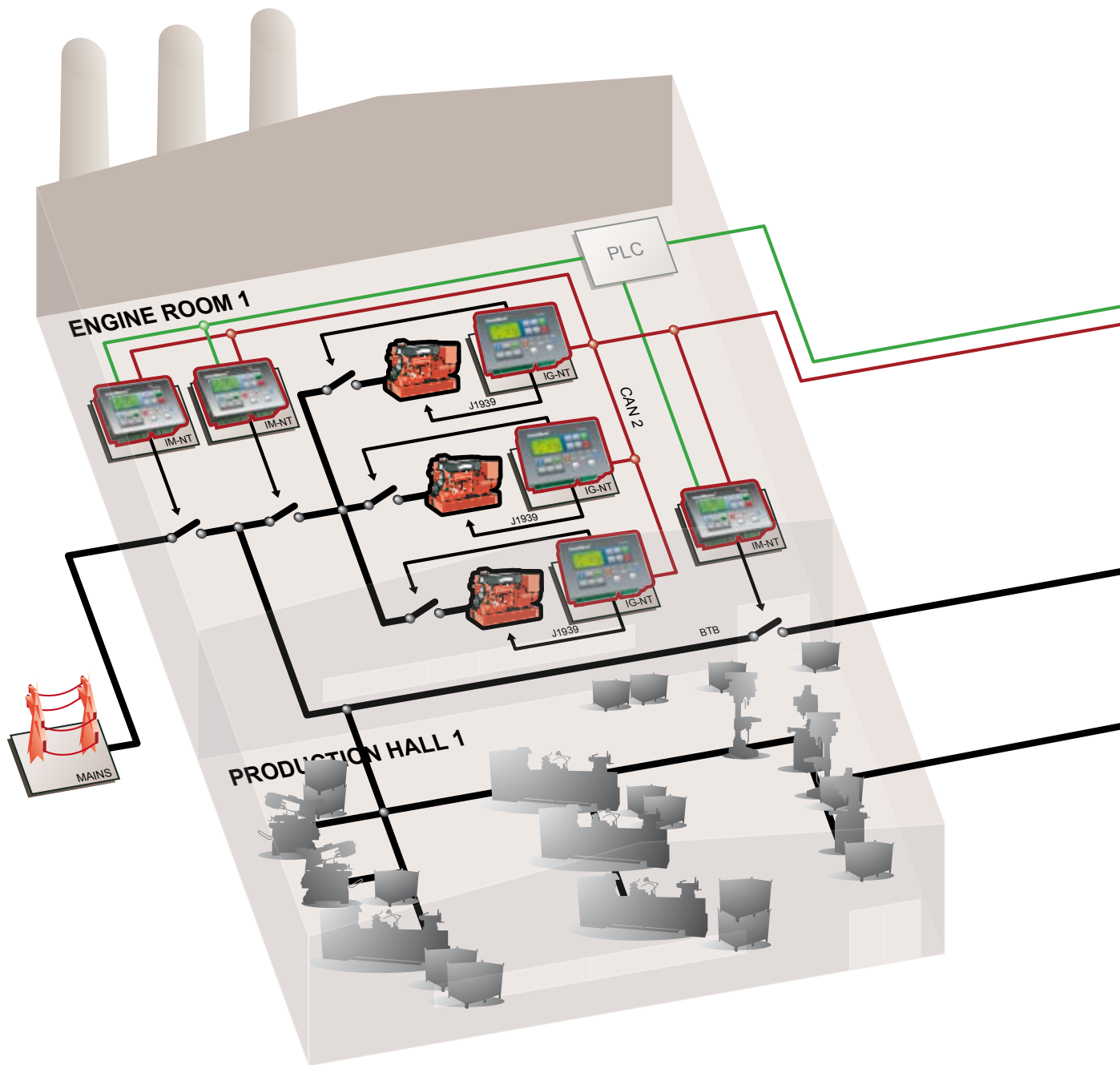
Description:

- Containerized rental gen-sets can be used for maintenance of power lines without interruption of power delivery to end consumer.
- Gen-sets are connected one-by-one to mains at the consumer's end and manually loaded. Power line is then manually disconnected and consumer is powered from generators running in parallel.
- The group of gen-sets is reverse synchronized to mains after finalization of maintenance on power line. IntelliMains^{NT} keeps generators and mains in synchronism enabling manual reconnection to power line.
- IntelliMains^{NT} is built in a small shock proof suitcase.
- Interconnection of containers is done by color coded not-interchangeable connectors.
- Each gen-set can be used in Stand-by, Single parallel to mains and Multiple parallel modes according to the position of Mode selector switch.
- Frequency selector enables switching between 50Hz/230V and 60Hz/277V mains.

Scope of supply:

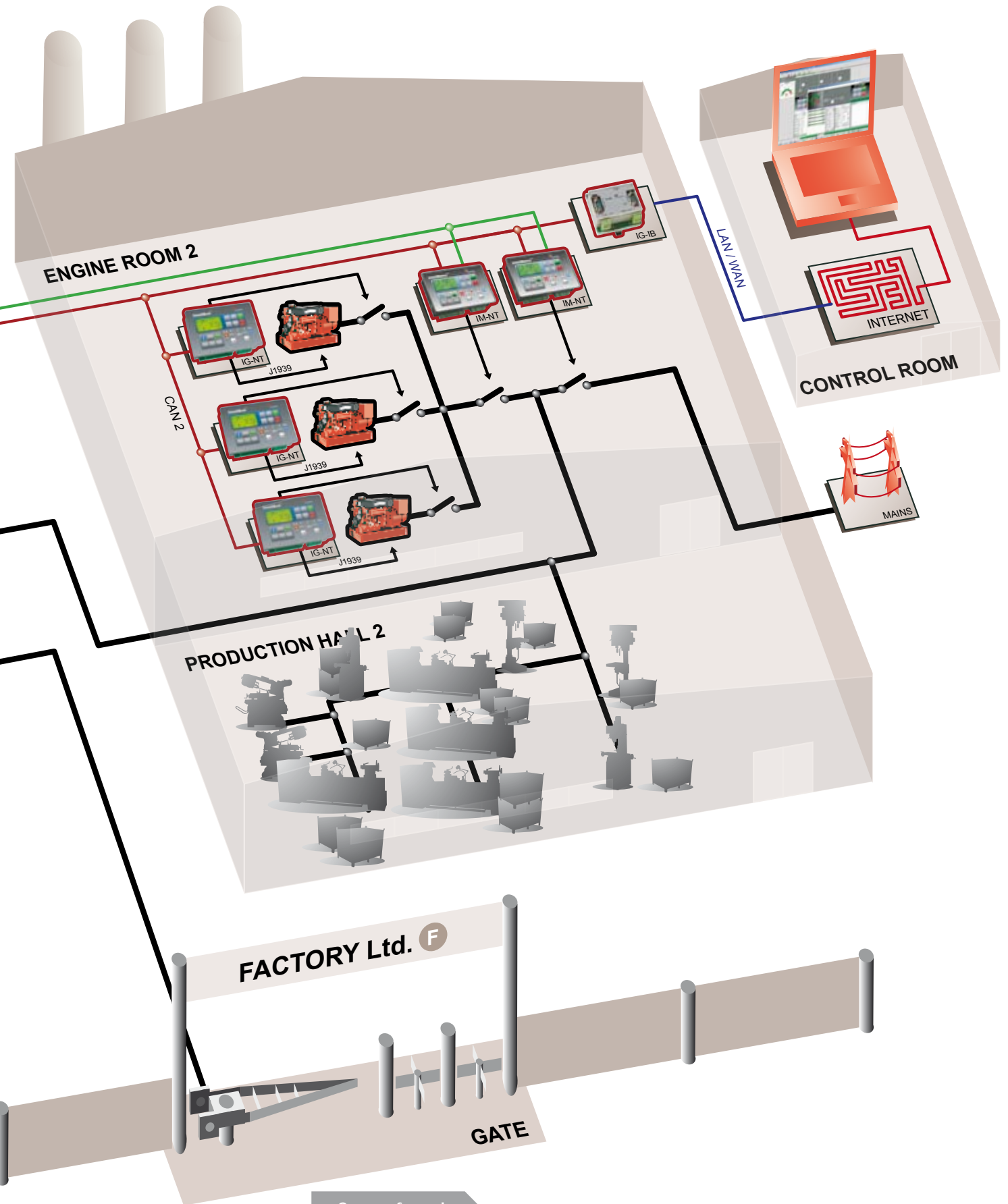
- 3× IG-NT
- 3× IGS-NT-LSM+PMS dongle
- 3× IG-AVRI
- 3× IG-AVRI-TRANS/LV
- 1× IM-NT

Complex installation – multiple grids



Description:

- Essential load is fed by two mains feeders during normal operation to achieve maximum reliability of the power delivery. Bus-tie breaker (BTB) is closed.
- Complex switching algorithm running in external PLC defines which breakers are opened and which are closed independent on availability of two mains and gen-sets.
- Reverse synchronizing on both feeders and on bus-tie breaker is accomplished by 5 IntelliMains^{NT} modules controlled by external PLC.
- Active and reactive load-sharing can operate in two modes:
 - Sharing the load between all running gen-sets – if BTB is closed
 - Sharing the load in two independent groups – if BTB is opened
- Automatic power dependant start/stop can operate in two modes as well:
 - Running on all gen-sets – if BTB is closed
 - Running in two independent groups – if BTB is opened
- All controllers are interconnected by one CAN bus all the time, disregarded if BTB is closed or open, no need for relays reconnecting the CAN bus.
- Complete system is remotely controlled and supervised from Control room connected via company LAN and IG-IB to all controllers.



Scope of supply:

- 6× IG-NT
- 6× IGS-NT-LSM+PMS dongle
- 6× IG-AVRI
- 6× IG-AVRI-TRANS/LV
- 5× IM-NT
- 1× IG-IB
- 1× IG-IB 15 dongle
- 1× optional PLC (not delivered by ComAp)