gemstart

GemStart5
Intelligent motor control control & monitoring device

MOTOR PROTECTION, CONTROL & MONITORING DEVICES

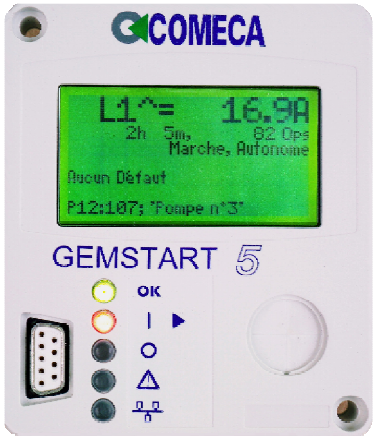
COMECA introduces a brand new approach to motor control for process industries through an optimized range of intelligent products with a unique blend of high performance and low capital & operating cost.

Our products can be fully integrated into packaged control and monitoring solutions to any major standard.

Reliability, flexibility et modularity are the key factors in the design of today's motor starters.

Gemstart5 provides them with microprocessor based accuracy, power & flexibility backed by hardware designed to cater for all schematics requirements.

A proven product, with over 20 years service, GemStart is at the heart of low and medium voltage process control systems in industries around the word.



Customer benefits

- Protect & controls all LV / MV starters
- Meets all major client specifications
- Cover all starters applications
- Allows plug & play operation
- Self tune motor & plant protection
- Increased process flexibility
- Significantly reduces 'on site' cabling costs
- Provides the most cost effective solution

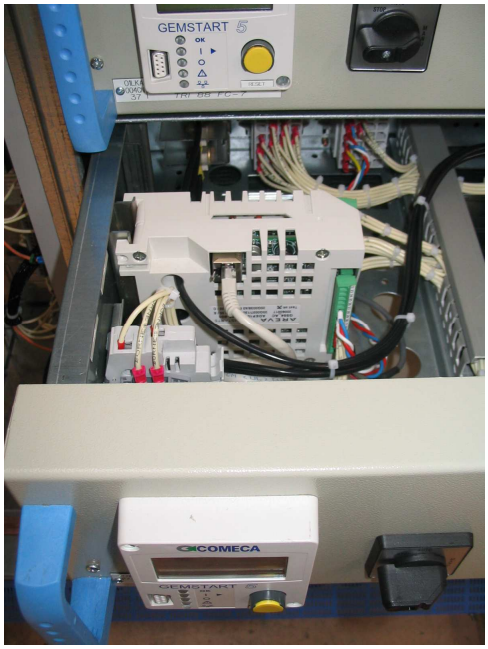
The first choice for intelligent control in LV & MV Systems,

GemStart5 provides the three primary functions of Control, Protection & Monitoring for all types of Motor Starter at all voltages between 110V & 24kVac.
With its new modular approach and a choice of power & display modules, the ideal combination is available to meet any specification at the lowest possible cost.
COMECA EBT LV Motor starters are perfectly integrated with GemStart5.
Circuit designs are simplified, project build times minimized and maximum flexibility is provided by simple configuration settings.
Commissioning time is reduced to a minimum and plant protection ensured by self-tuning features that are accurate and easy to use.
Starter replacement and extensions are possible with the equipement live, the Plant Associated Memory Module (PAMM) ensures correct settings are retained and used by a replacement starter.

comeca
energy in motion

GemStart5 Intelligent Motor Control Unit

gemstarts



MAXIMUM IMMUNITY

GemStart5 ’s design ensures that it is fully EMC certified and immune to RFI, the product has also been extensively strife tested at elevated temperatures and under severe vibrations conditions.

GemStart5 ’s minimum isolation voltage is 2.5kV. The circuits are designed so that inadvertent connection of incorrect voltages to the control supply terminals up to 415Vac will not harm the device.

COST & PROJECT MANAGEMENT SAVINGS

Flexible Inputs

As standard each GemStart5 has four Chassisinputs to sense local control signals and five Voltage Independant Inputs to sense signal from the field. Each can be assigned to 31 functions, enabling engineers to create standard diagrams and chassis which are identical in terms of design but which can cater for a wide variety of starter types.

Flexible outputs

As standard each GemStart5 has four user configurable outputs: two are rater for High Power Contactor/solenoid switching & two for relay / signaling applications.

Plug-and-Play

The patended Plant Associated Memory Module (PAMM) ensures that chassis interchangeability is both quick and error free. Mounted on a fixed portion of the starter, the PAMM stores all necessary data associated with the particular drive, and automatically updates any replacement GemStart5 when connected by keeping all settings and parameters in a non-volatile memory.

Component management and use

Discrete components used in the construction of a GemStart5 equipped MCC are reduced to a minimum. This simplifies project management and procurement and helps to reduce build time. It also makes accommodation of changes much simpler. Additional benefits come by reducing the amount of spares to be purchased, stocked and managed.
For LV motor loads up to 30A no CT’s are necessary. GemStart5 has built in current sensors which are very accurate over a very wide range. Above 30a a single CT block covers all currents up to 160A.
Standard ring type CT ’S may also be used.
With this level of flexibility most drive size changes are easy to accomodate without the need to change control circuit components or wiring.

Our LV motor control centers, GALAXIS GM600 incorporate GemStart5.

comeca
energy in motion

GemStart5 Flexibility

gemstart5

MODULAR FLEXIBILITY

GemStart5 is a modular device that can be configured to provide the control, protection & monitoring for any LV or MV motor starter.

• GemStart 5.1 caters for the needs of distribution circuits allowing full digital control & status monitoring of distribution devices such as circuit breakers.

• GemStart5.4 includes a single PTC temperature monitoring channel to provide protection against overheating using thermistors embedded in the motor windings. This ensures LV motors are protected in accordance with the ATEX directive.

• Even greater flexibility can be obtained by optional RTD & Input units. When added these provide extra temperature channels and control inputs to cater for more complex circuits. Additional modules are simply connected to GemStart5 by a single RJ45 plug and are completely interchangeable.

DISPLAY MODULES

GemStart5 has two display 's available :

• The LED module, which has five LED 's to provide plant status indication.

• The LCD display is unique in its ability to be user configured to display up to seven variables simultaneously. This allows engineers to monitor maintenance functions such as operations & switching current without additional meters or counters, and without the need to interrogate the device.

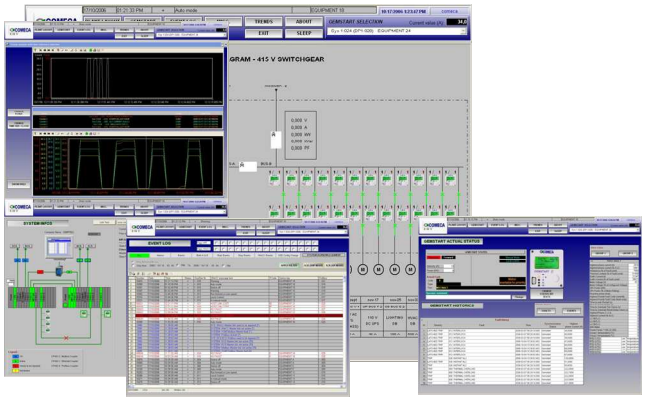
GEMPRO : POWERFUL MONITORING & PROGRAMMING TOOL

GemPro is a PC based configuration tool available free of charge to load onto any Pentium or equivalent PC. This powerful programming & monitoring tool gives full visibility of all monitored values and allows secure configuration through the front panel communication port.

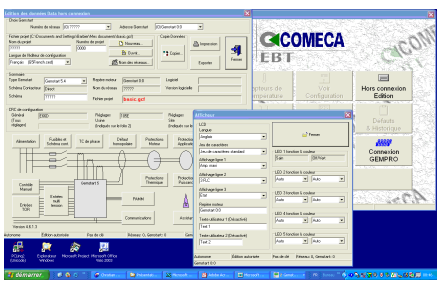
GEMVIEW5 ENGINEERING WORKSTATION

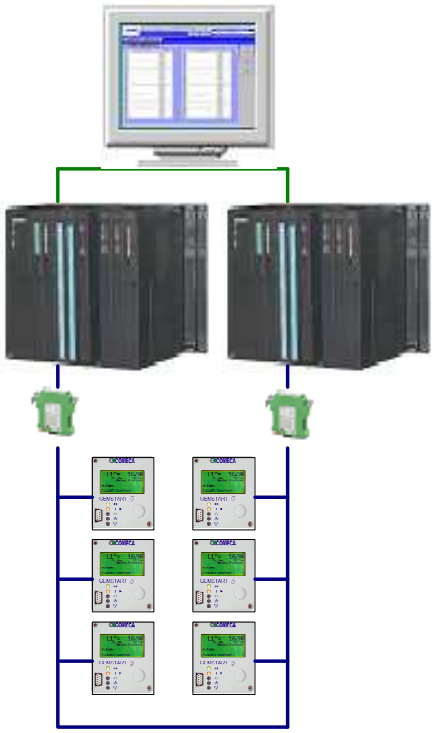
GemView5 is a PC based EWS (Engineering Work Station) that has full SCADA capabilities which can be tailored to suit any project requirement. Important elements include trending, alarms and custom single line diagrams.
An easy to use and understand GemStart5 mimic page accurately displays all data monitored at a remote location in a format that replicates the actual device.

GemView5



GemPro





comeca
energy in motion

GemStart5

gemstart5

GEMSTART5 PRODUCT FAMILY SPECIFICATION

RTD Module : A separate RTD module is avilable to add six PT100 temperature probes, this also includes four additional multi voltage inputs.

Input Module : An additional input block is available to add four multi voltage inputs where complex control circuits are needed.

FEATURE	5.1	5.4
I/O		
Green healthy / link activity LED	✓	✓
Local inputs (24VCC)	4	4
Expansion unit (optional)	✓	✓
Field inputs (multi-voltage)	**4**	**4**
Power outputs (16A relays)	2	2
Signalling outputs (2A relays)	2	2
Core balance CT input	-	**1**
CT line input	-	3
PTC (thermistor)	-	1
Motor voltage input	-	✓
INTERFACES		
LED unit option	✓	✓
DIN rail mounting	✓	✓
Modbus	**115ko**	**115ko**
Gembus	✓	✓
Profibus	**1.5Mo**	**1.5Mo**
Seven line LCD unit option	✓	✓
INTERNAL FUNCTIONS		
Two contactor control	✓	✓
Current protection	-	✓
Power related protection	-	✓
Non volatile memory	✓	✓
Auto restart	-	✓
Supply dip detection	-	✓
GemStart5 PAMM (mounted on fixed portion)	**Option**	**Option**

PAMM

GEMSTART5 IEEE C37.2 FUNCTIONS

IEE C37.2	DESCRIPTION	5.4
14	Under speed Speed switch	✓
27	Under voltage	✓
30	Annunciator Display of faults	✓
37	Undercurrent / Under power	✓
46	Reverse phase current / Phase balance	✓
48	Incomplete sequence Motor start	✓
49	Thermal overload	✓
50	Instantaneous overcurrent	✓
50N	Instantaneous earth fault	✓
50S	Start overcurrent	✓
51	Time overcurrent	✓
51LR	Locked rotor	✓
55	Power factor	✓
59	Over voltage	✓
66	Notching or jogging No of starts/inch	✓
74	Alarm relay	✓
79	Motor reclosing	✓
86	Locking out relay Use of output 3	✓
	Thermistor Monitoring & protection	✓

GemStart5 unit

comeca
energy in motion