Visualise

00 01 11 10 100110101

11 10 100110101 00 01 11

Control

Graphic Operation Controller
GOC
All-In-One Controller

Connect

00 01 11 10

100110101

11 10 100110101

00 01

00 01 11 10

Graphic Operation Controller — GOC35

PLC + HMI

K1 K2
K3 K4
K5 K6
K7 K8

F1 F2 F3 F4 F5

VERSATILITY
MEETS
VALUE

INTRODUCTION

Key Attributes

- I/O Capacity – 48
- Main Unit – 16 IO and 32 IO
- I/O Extension Unit – Analog, DI/DO
- Communication Options –
  - Serial RS232
  - Serial RS422/485
  - Ethernet
- Display – Graphical LCD, 128 x 64 pixels
- Configurable MODBUS RTU Master/Slave
- Data logging via SD Card (upto 32 GB)

PLC

HMI

I/O

Mimic

Annunciator

PB Lamps

"A single controller for all my automation needs"

Main Unit Back Side View

Key Attributes

- 6 Models. 16 IO (Relay, Transistor (sink, source)) and 32 IO (Relay, Transistor (sink, source))

- Configurable Digital Inputs -
  - 2 HSC : 20 KHz   - 2 Encoder : 10 KHz
  - 2 Hardware Interrupt   - 2 Pulse Catch

I/O1 Extension Unit

I/O2 Extension Unit

I/O Terminal Block

COM2 Extension Unit

COM1 Extension Unit

I/O Terminal Block

"GOC is compact and it reduces Assembly Time by eliminating separate wiring of PLC and HMI"
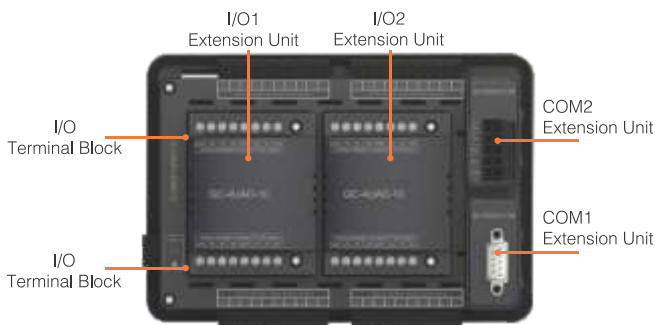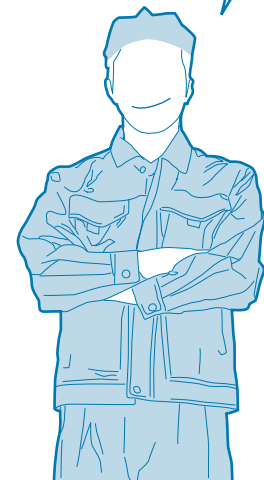
- **Digital IO**
  8 Inputs
  6 Relay Outputs
  4 Inputs + 4 Outputs
  2 HSC + 2 PTO

- **Analog IO**
  4 Analog Inputs (V/I), 12-bit
  4 Analog Outputs (V/I), 12-bit
  4 Universal Inputs (PT100, V/I), 10-bit

- **Communication**
  Ethernet
  Serial
  Modbus

GOC HMI FUNCTION

Function Keys

Key legend on LCD

MANUAL	CONTROL
STAGE 1 PUMP	
START	STOP	REST

Real Time Clock

RTC

DD-MM-YYYY
HH : MM : SS

Fonts supported by Windows

WINDOWS FONTS
Arial
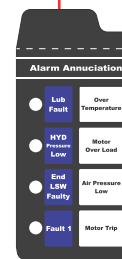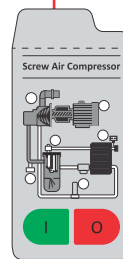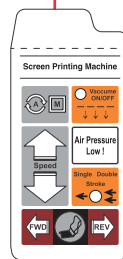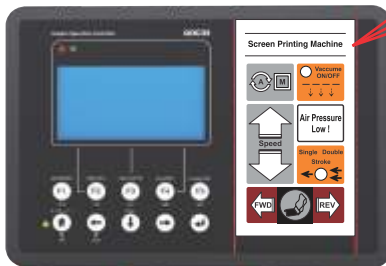**Century** Calibri
Magneto

Graphical Symbols

GRAPHIC SYMBOLS
Dynamic Symbols

"Now I can easily debug in a single operation and operate in my preferred language too!"
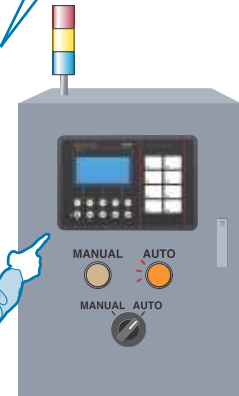
ILLUMINATED KEYS
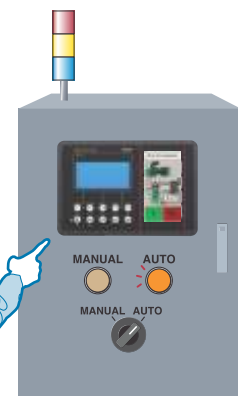

Key Attributes

- 8 Illuminated Keys (Keys with Dual colour bright LEDs)
- User configurable operation Inch/ Toggle/ GoTo Screen
- LED control Red/Green/Yellow ON/ OFF/ Blink Slow/ Blink Fast
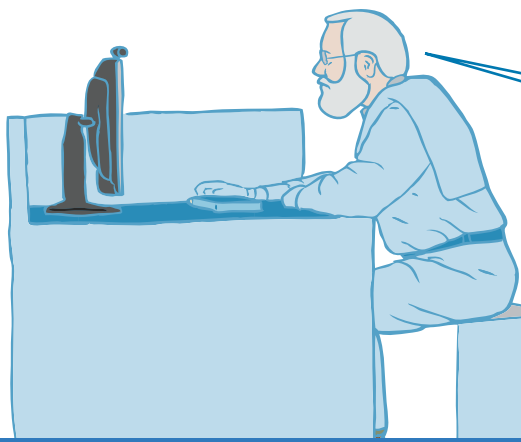- Multi-fold usage combined with slide-in label

Customization

Easy customisation of front look

- Insert able side-in labels
- Process mimic
- Brand labelling
- Machine information

SOFTWARE FEATURES

SINGLE Integrated programming software for PLC and HMI - FREE OF CHARGE!!
Easy Hardware and HMI Configuration

Hardware Configuration

HMI Configuration

Project Explorer with Main and Extension Units.

Select, Drag and Drop different units for configuration.

Configuration of Main and Extension Units.

Project Explorer with Function and Illuminated Keys.

Select, Drag and Drop different Screen objects.

Object Properties.
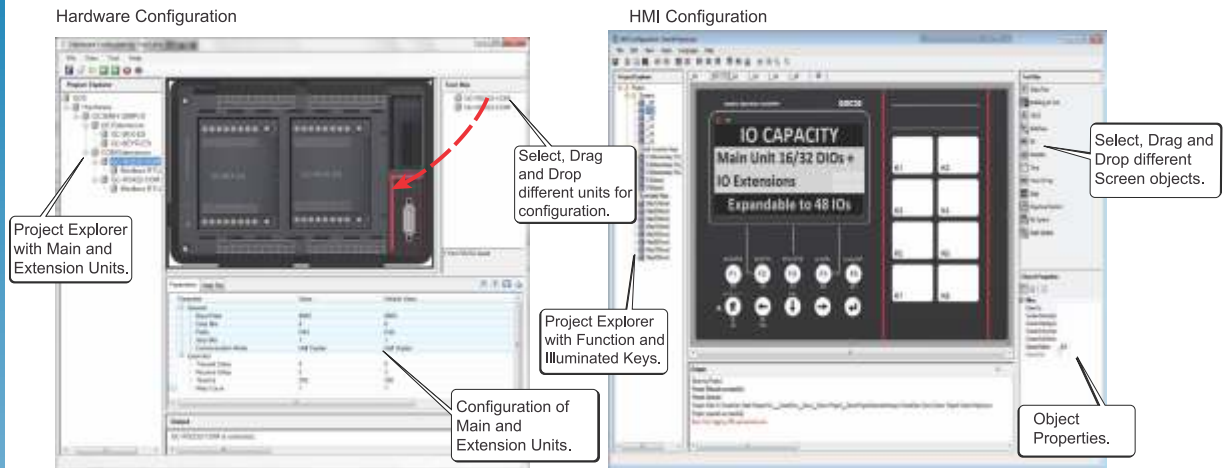
"Now no need to invest time in learning two different softwares for PLC and HMI"

PLC Editor
- Number of languages to choose from.
- Built-in function blocks to save time.

Vivid Visualisation
- Graphs and color images for variable inputs.

AUTOMATION MADE EASY

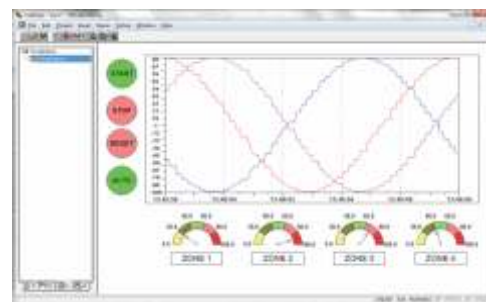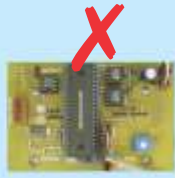### Entry Level Application

Still stuck to traditional Microcontroller based dedicated controller on Relay Logic?

Time to move on

Design your own concept with GOC and save big on time and money

Wide connectivity to Fulfil Your Basic Needs

Energy Meter

VFD

OPC

GSM/GPRS Modem

Printer
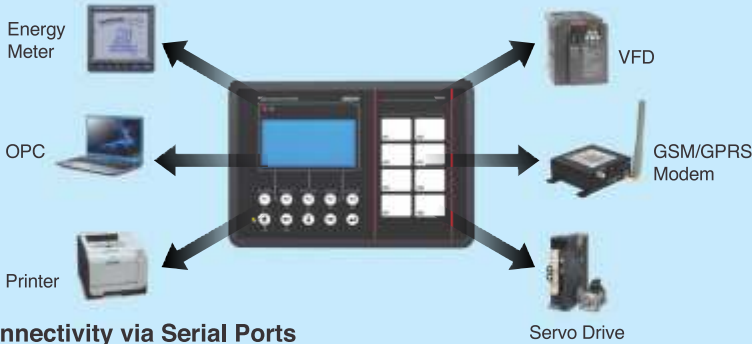
Connectivity via Serial Ports

Servo Drive

Compact Yet Advanced Function

Take this flow control application in the food industry for example.

Liquid level sensor Current Output Type 4-20mA

Motor Pump Inverter Voltage Input Type 0-10V DC

Supply side

Drain side

Flow sensor Current Output Type 4-20mA

Conveyer

System configuration

GSM

Analog Input

Flow sensor Current Output Type 4-20mA

Liquid level sensor Current Output Type 4-20mA

Serial

Motor Pump

Inverter

Voltage Input Type 0-10V DC

Analog Output

GOC

Servo

Conveyer Belt

SIMPLE FUNCTION

MODERATE FUNCTION

ADVANCED FUNCTION

SPECIFICATION

Main Unit

Model			GC35MH-16MT-DS GC35MH-16MR-D GC35MH-16MT-DSS	GC35MH-32MT-DS GC35MH-32MR-D GC35MH-32MT-DSS
IO Range (Input, Output)			16 (8,8)	32 (16,16)
Maximum IO Range			48	
CPU Performance	BOOL		0.3 µsec	
	MOVE (BYTE, WORD)		0.3 µsec	
	MOVE (DWORD, REAL)		0.1 µsec	
Memory Size	Program		192 KBytes (for PLC program and HMI program)	
	Source code and Comments		1.5 MByes	
	Data Memory		24 KBytes	
	Retain Memory		1 KBytes	
Power			24 VDC , 400 mA, 9.6 Watt.	
Output Type			GC35MH-16MT-DS : Transistor (sink)	GC35MH-32MT-DS : Transistor (sink)
			GC35MH-16MR-D : Relay	GC35MH-32MR-D : Relay
			GC35MH-16MT-DSS: Transistor (source)	GC35MH-32MT-DSS: Transistor (source)
Integrated Functions	Single Phase Counter		20 KHz (2 Nos.)	
	Encoder Interface		10 KHz (2 Nos.)	
	Pulse Catch		Min 500 µsec (2 Nos.)	
	Real Time Clock		Retained up to 2 weeks with super capacitor backup	
	Communication		RS232, RS422/RS485, Ethernet* (Via com Extension Unit)	
	Serial Protocols		Modbus RTU Master, Master RTU Slave	
HMI	Display		Graphic LCD Display, 128 x 64 pixels White characters on blue background	
	Keys		10 keys for display navigation and data entry (User configurable functionality for 5 keys)	
	Illuminated Keys		8 (Keys with bicolur LEDs, Slide-in label)	
IO Expandability			2 IO Extension Slots	
Communication Expandability			2 COM Extension Slots	
Programming	Software		GOCToolkit (Includes CoDesys for programming and other configuration tools)	
	IEC 61131-3 Languages		Ladder, ST, SFC, FBD, IL	
	User Defined Function Blocks		Yes	
Environmentals	IP Level		IP65 from front. IP20 from rear	
	Temperature Range		Operating: 0 to 55 °C, Storage: -20 to 75 °C	
	Dimensions		Cut Out : 166.5 (W) x 107.5 (H), Front : 177.0 (W) x 123.0 (H) x 4 (D)	
Approvals	CE, ROHS		Yes	

IO Extension Units

	GC-8EX-ES	GC-6EYR-ES	GC-8ET-ESS	GC-4AD-12	GC-4DA-12	GC-4UAD-10	GC-4UAD-10E	GC-4UAD-16	GC-4HSOXPTY
IO extension Type	Digital			Analog					High Speed Digital
Input Points	8	0	4	4	0	4	4	4	2 Ch HSC/Encoder, 100/50KHz max
Output Points	0	6	4	0	4	0	0	0	2 Ch PTO, 100 KHz max
Input Type	24VDC, Sink/Source	-	24VDC, Sink/Source	Voltage: 0 to 10V/ -10 to 10V Current: 0 to 20mA/ 4-20mA	-	Voltage: 0 to 10V Current: 0 to 20mA RTD PT100: -50°C to 150°C	Voltage: 0 to 10V/DC Current: 0 to 20mA PT100: -50°C to 450°C	Voltage: 0 to 10V/DC Current: 0 to 20mA PT100, PT1000 Thermocouple : J Type & K Type	24 VDC Sink/Source
Output Type	-	Relay (500 mA at 250 VAC and 30 VDC)	24VDC, Source Type 1.5A/output	-	Voltage: 0 to 10V/ -10 to 10V Current: 0 to 20mA/ 4-20mA	-	-		5 VDC Differential
Resolution	-	-	-	12 Bit	12 Bit	10 Bit	10 Bit	16 Bit	-
Isolation	Optical 1.5 KV between input & internal circuit	Galvanic between output and internal circuit	Optical 1.5KV between input/ output and internal circuit	No isolation	No isolation	No isolation	No isolation	No isolation	Optical 1.5 KV between input and internal circuit. No isolation between PTO and internal circuit
Protections	-	-	Short circuit protection for output	-	Short circuit protection for voltage output	-	-	-	No short circuit protection for PTO

COM Extension Units

	GC-RS232-COM	GC-RS422-COM	*GC-ENET-COM
Hardware Interface	RS232C	RS422/ 485	10/100 Base-TX
Number of COM Ports	1	1	1
Communication Speed (BPS)	9600, 19200, 38400, 57600, 115200		10/100 Mbps
Connector Type	9-pin D male	5-pin removable terminal block	RJ45 female, Shielded

*Ethernet is trademark of xerox Corporation