



Automation Controller

Gentec Automation Controller is the perfect solution for your substation retrofits



RTU series

The **Gentec Automation Controller** platform was developed based on Hydro Quebec needs and requirements. Hydro Quebec operates one of the largest electricity distribution network in North America.

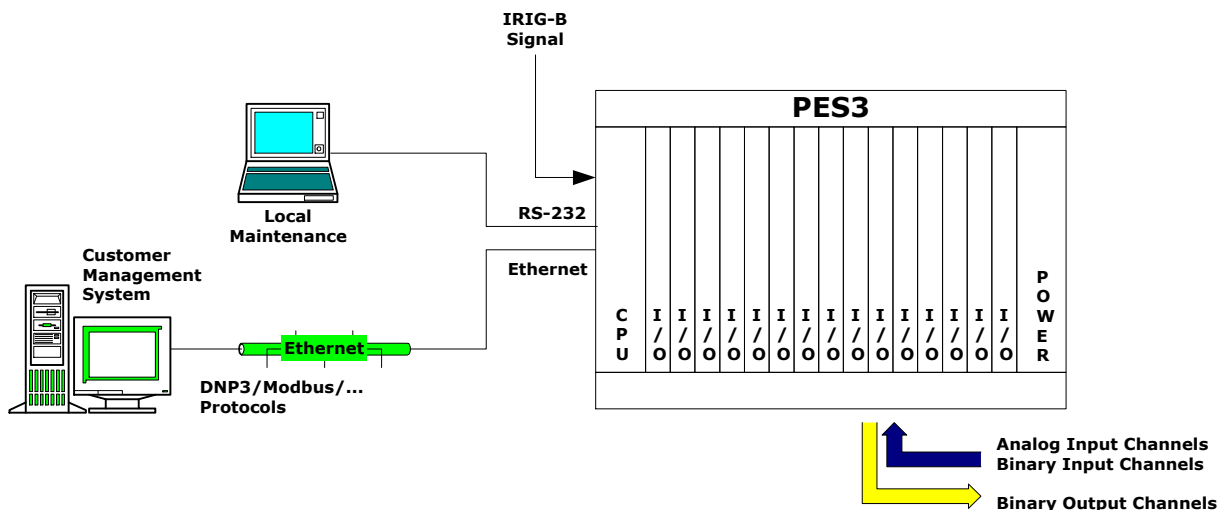
BENEFITS

- » **Mature and proven technology**
- » **Plug-and-play system**
- » **Intuitive management software programs**

SYSTEM FEATURES

- » **Distributed architecture**
- » **Maintenance mode**
- » **Individual I/O indicators (LED) on each card**
- » **Optional in-shelf or external VGA touch screen display**
- » **On-line card diagnostics**
- » **1ms event tagging (IRIG-B)**
- » **Hot swap capability**
- » **Ethernet**

Understanding the need for your maintenance people to work efficiently. **Gentec Automation Controllers** can be equipped with an external or in-shelf VGA touch screen display.





Gentec Automation Controllers can be loaded with our smart graphical software applications which feature:

- » An alarm logger module — **Annunciator**
- » A Sequence-of-Events Recorder module — **SER**
- » An analog measure viewer module — **Measure**

...and all that accessible locally or remotely

When provisioned with our gateway, our **Automation Controller** will process and make the data available directly to your SCADA system.

Annunciator View

Présentes: 8 Inhibées: 0 Retirées: 0 Défaillances: Aucune Com ST: OK Ann. tél. En Hors

Code	Description	# alarme	Date	Heure
Rx cen3_42	Déclenchement par protection du sectionneur	0042	04-10-12	13:09:34*
R cen3_63	Refroissement anormal	0063	04-10-12	13:09:34*
N cen3_34	Déclenchement par protection du sectionneur	0034	04-10-12	13:09:34*
N cen3_23	Refroissement anormal	0023	04-10-12	13:09:34*
R cen3_19	Refroissement anormal	0019	04-10-12	13:09:34*
R cen3_10	Déclenchement par protection du sectionneur	0010	04-10-12	13:09:34*
R cen3_50	Déclenchement par protection du sectionneur	0050	04-10-12	13:09:34*
N cen3_52	Survitesse alt. 110%	0052	04-10-12	13:09:34*
N cen3_28	Survitesse alt. 110%	0028	04-10-12	13:09:34*
N cen3_8	Survitesse alt. 110%	0008	04-10-12	13:09:34*
N cen3_26	Déclenchement par protection du sectionneur	0026	04-10-12	13:09:34*
Rx cen3_31	Refroissement anormal	0031	04-10-12	13:09:34*
N cen3_29	Pression d'huile anormale	0029	04-10-12	13:09:34*
R cen3_56	Survitesse alt. 110%	0056	04-10-12	13:09:34*
N cen3_14	Déclenchement par protection du sectionneur	0014	04-10-12	13:09:34*
R cen3_4	Survitesse alt. 110%	0004	04-10-12	13:09:34*

Alarmes Historique Inhibées Retirées État système Mesures Test 13:18:18 2004-10-12

SER View

Date	Heure	T	Code	Description	Statut
04-10-12	13:09:34.306	A	cen3_50	Déclenchement par protection du sectionneur	M
04-10-12	13:09:34.316	A	cen3_42	Déclenchement par protection du sectionneur	M
04-10-12	13:09:34.326	A	cen3_42	Déclenchement par protection du sectionneur	M
04-10-12	13:09:34.336	A	cen3_52	Survitesse alt. 110%	M
04-10-12	13:09:34.346	A	cen3_28	Survitesse alt. 110%	M
04-10-12	13:09:34.356	A	cen3_8	Survitesse alt. 110%	M
04-10-12	13:09:34.366	A	cen3_63	Refroissement anormal	m
04-10-12	13:09:34.376	A	cen3_26	Déclenchement par protection du sectionneur	M
04-10-12	13:09:34.386	A	cen3_31	Refroissement anormal	m
04-10-12	13:09:34.396	A	cen3_31	Refroissement anormal	m
04-10-12	13:09:34.406	A	cen3_29	Pression d'huile anormale	m
04-10-12	13:09:34.416	A	cen3_56	Survitesse alt. 110%	M
04-10-12	13:09:34.426	A	cen3_56	Survitesse alt. 110%	M
04-10-12	13:09:34.436	A	cen3_31	Refroissement anormal	m
04-10-12	13:09:34.446	A	cen3_31	Refroissement anormal	m
04-10-12	13:09:34.456	A	cen3_19	Refroissement anormal	m
04-10-12	13:09:34.466	A	cen3_14	Déclenchement par protection du sectionneur	M
04-10-12	13:09:34.476	A	cen3_4	Survitesse alt. 110%	M
04-10-12	13:09:34.486	A	cen3_4	Survitesse alt. 110%	M

Type à afficher: Alarmes d'exploitation (A) ECE (E) Événements système (D)

Alarmes Historique Inhibées Retirées État système Mesures Test 13:18:08 2004-10-12

Measure View

Lignes 735 kV	MW	Mx	A(A)	A(B)	A(C)	kV(AB)	kV(BC)	kV(CA)
L1	40	-9	52	-32	---	34	60	-93
L2	97	66	19	-79	-45	-32	47	36
L3	14	42	70	95	47	-42	-38	29
L4	46	97	22	-17	27	-55	-87	38
L5	---	---	70	99	-38	79	51	-100

Transformateurs	MW	Mx	A(A)	A(B)	A(C)	kV(AB)	kV(BC)	kV(CA)
T2	-23	-31	35	-15	91	---	-96	-37
T3	63	-88	-14	-41	-89	-7	-80	45
T4	45	3	35	-32	-48	-11	-87	-23
T5	24	63	-37	-93	-59	-22	42	89
T6	-30	8	-80	28	23	59	-10	47

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Système	Application
PES3	Version du prototype 1.0.0.10
Panier 1	Version de l'application SMP 3.6
CEN3 rail 2	Version de l'annonce 2.1.R4
CEA3 rail 3	Version des paramètres supportés 12
CEA3 rail 4	Version de la copie A 3.6R0 sans TRAM
Panier 2	Version de la copie B 3.6R0 sans TRAM
CEN3 rail 2	Date de la copie A 8 mai 2000
CEA3 rail 3	Date de la copie B 8 mai 2000
	Total de contrôle de la copie A 48FCH
	Total de contrôle de la copie B 48FLH
	Code en exécution Copie A

Installation	Client	Acifs	Maximum
CCR-870	CCR-870	5	8
CER	CER	1	2
LSG(F)	LSG(F)	1	1
Transport	Transport	1	1

Configuration: Sélection Retire Rap. général prêtées

Alarmes Historique Inhibées Retirées État système Mesures Test 13:16:22 2004-10-12

System View

CARDS FEATURES

Filtering

Numerical filtering possible through FPGA and DSP.

Throughput

Full throughput available via 100 Base-TX / 100 Base-FX Ethernet links

Fail-safe

Watchdog and reset circuits allow to continuously monitor the proper performance of the input switching section.

Auto-Calibration

All analog input channels self-calibrate at start-up.

Synchronization

IRIG-B Sync is available with Gentec PES3 shelf

Hot swappable

On-line diagnostics

Visual Indicators

Input status is available by means of LEDs on the card faceplate.

System Overview

Shelves and Cards

Up to 16 Shelves
Up to 17 I/O Cards
Up to 8704 Input/Output Points

CPU

32-bit Motorola MPC series
32Mb SDRAM

Power

105Vdc-140Vdc or 108Vac-132Vac
Single or Dual

Communication

Local Front RS-232 Maintenance Port
Remote Rear RS-232 Port (2x)
Ethernet 10Base-T/FL or 100Base-TX/FX
1ms IRIG-B Synch. Input

Others

Individual Indicator (LED) on I/O
Optional In-shelf VGA Touch Screen

Input/Output Cards

16-Channel Analog Input Card

16x Isolated Differential Inputs
 $\pm 2.56\text{Vdc}$ and $\pm 10.24\text{Vdc}$ Input Range
0.2% Accuracy

16-Channel 100kHz Analog Input Card

16x Isolated Differential Inputs
 $\pm 2.50\text{Vdc}$ or $\pm 350\text{Vdc}$ Input Range
0.1% Accuracy

32-Channel Binary Input Card

32x Optically Isolated Inputs
2ms—65ms Filtering
500uS Scan Rate

16-Channel Binary Output Card

16x Isolated Relay Inputs
Form-C Contacts 2A @ 30Vdc/250Vac

Mechanical Specifications

Dimensions (LxHxD) 483cmx355cmx316cm (19"x14"x12.4")
Color & Finish Aluminium & Black Mat

Environmental Specifications

Temperature
Operating Temperature -25 °C—55°C (-13°F—131°F)
Storage Temperature -40 °C—85 °C (-40°F—185°F)
Humidity 0—95% Non-condensing
Cooling Natural or Forced Convection
Altitude 0% 0-3300ft (1000m)

Safety Specifications

Environment Testing IEC 60068-2-1 /-2 /-3
Fire Resistance UL 94V-0
Shock and Vibration IEC 60255-21-1
Surge Withstand Capability IEC 60255-22-1 /-4
Dielectric Strength IEC 60255-5
ESD IEC 61000-4-2
EMC Radiated / Conducted IEC 61000-4-3 /-6