

HYDRAN EXCHANGE PROGRAM



Hydran Exchange Program Fact Sheet

The Hydran[®] technologies from GE Power Systems are early warning devices that will alert personnel to developing fault conditions that could lead to equipment failures and/or unscheduled outages. The earliest Hydran technology was developed using an analog type of operation. GE Power Systems now offers three products that can replace the analog type sensing device. GE Power Systems offers the Hydran 201R Model i[™], the new Hydran M2[™] as well as the Hydran Multi 2010[™] monitoring system. The Hydran Exchange Program enables customers to exchange an analog unit or units and receive up to 30% off on the purchase of a system with the latest technology.

Customers can select from one of the three Exchange program options. The program will be available only for an exchange. This means that for each unit purchased, one unit must be returned to one of the specified GE return points.

Customers may request to receive an advance shipment of the new unit prior to returning the old unit. If this is the case, the serial number of the exchange unit will be identified on the invoice and will be used for validation of the returned equipment. The Customer may not keep the old unit to install on a less critical transformer and take advantage of this program. An exchange must take place.

Benefits of Upgrading

■ Hydran 201R Model I

By upgrading to the digital Hydran 201R System, you will benefit from a system that has proven itself to be an incipient fault gas detector widely used in the industry. The Hydran unit measures a composite value of combustible fault gases with sensitivity to Hydrogen (H₂), carbon monoxide (CO), acetylene (C₂H₂) and ethylene (C₂H₄). The Hydran 201R Model i will bring you a networking capability of up to 128 transformers, will provide remote access to the data, will enable computer access to the monitoring device, and the device performs periodic and monthly self tests to ensure that it is operating properly.

■ Hydran Multi 2010

The Hydran Multi 2010 system is an on-line detector that analyzes and monitors incipient fault gases developing in transformer oil. The Hydran Multi 2010 system is designed to measure the concentration of acetylene (C₂H₂) gas in addition to the Hydran composite reading noted above. The system, which is permanently installed on the transformer, offers real-time baseline ppm combined gas reading and acetylene readings, thus providing transformer owners with the valuable information required for maintenance decisions.

■ Hydran M2

The Hydran M2 is an on-line detector that analyzes two separate and important parameters in transformer condition assessment. The first important parameter is the composite value of combustible gases measured by the Hydran unit as noted above, the second parameter is the moisture level present in the oil. These two parameters can warn personnel when diagnostic or remedial actions are required.



GE Power Systems

CAPABILITY MATRIX

Attributes		Hydran				Value of Feature
		Analog 201R	Digital 201R Mi	Multi 2010	M2	
Detection Limit, Precision	Combined Gas (H ₂ , CO, C ₂ H ₂ , C ₂ H ₄)	25ppm + 10%	25ppm + 10%	25ppm + 10%	25ppm + 10%	
	Moisture %RH, ppm				+2%	
	Acetylene (C ₂ H ₂)			3 ppm		
Dynamic Oil Sampling		None	Yes	Yes	Yes	Increase sensitivity of sampling, permits increased oil circulation.
Gas Detected	Combined Gas (H ₂ , CO, C ₂ H ₂ , C ₂ H ₄)	Yes	Yes	Yes	Yes	Moisture will give more vital information on the condition of the paper, also used in several calculated models to understand the status of the transformer.
	Moisture %RH, ppm	None	None	None	Yes	
	Acetylene (C ₂ H ₂)	None	None	Yes	None	
Alarming Capability		(2) Dry Contact Adjustable levels	(2) Dry Contact Hourly, Daily	(3) Dry Contact Adjustables	(5) Dry Contact Combined, H ₂ O	
Requirements for Installation (valve size)		1 inch	1 inch	1.5 inches	1.5 inches	
Input	Analog Input	4-20 mA	None	None	4	Good flexibility, additional input can help monitor additional important parameter in the transformer, i.e., oil temperature, load current, temperature, load current winding temperature, etc.
Output	0-1 mA Isol- Non-Isol	1	1			Maximum I/O count is 4 in a combination of all inputs, all outputs or a combination of both.
	4-20 mA Isol- Non-Isol	(1) optional	(1) optional	2 (optional)	4	
Communication	RS-232	None	Yes	None	Yes	Added communication capabilities will enable the sensing device to connect and communicate with other IED device available in SAS product lines.
	RS-485	No Port	Yes	Yes	Yes	
	Ethernet	None	None	Yes	None	
Internal Self Testing		None	15 days	15 days	15 days	Critical in helping to understand the status and the operation of the sensing device, it will perform a self test and generate an alarm if it finds that some critical parameter have changed from the last test.
Available Protocols	Proprietary	None	Yes	None	Yes (current)	The newer devices offers additional communication protocols that permit it's connection to devices like the FARADAY® #Medic, #BOX, D25 and D20.
	Modbus	None	None	Yes	Available in 2004	
	Modbus plus	None	None	Yes	None	
	TCP/IP	None	None	Optional	None	
	DNP 3	None	None	None	Available in 2004	
Local Display		Gas Reading, alarm lights	Interactive display 2 lines, alarm lights	None	Interactive display 6 lines	
Trending		None	Hourly and Daily on combined gas reading	Hourly and Daily on combined gas reading	Hourly and Daily on combined gas reading	Rates of change are calculated for the parameters and the periods indicated. Alarms may be triggered based on rate of change.
				Hourly and Daily on C ₂ H ₂ gas reading	Hourly, Daily Average on H ₂ O	
Number of Separate Item in Package		2 (sensor enclosure controller)	2 (sensor enclosure, controller)	2 (sensor enclosure, controller)	1 (sensor enclosure, controller)	
Logging Time		None	5 days / 15 minutes	2 days / 15 minutes	10 days / 15 minutes	
			4 months / 6 hours		8 months / 6 hours	
			5 years / 15 days		10 years / 15 days	
Remote Configuration		None	Hydran Host	Multi host	Hydran Host plus	
Networking		None	128 Ti, 32 Ci-C, RS-485	Several units over, Modbus plus, TCP/IP	128 M2, direct isolated RS485	Enables the user to connect to multiple devices with one access point to obtain the condition of the transformer.
Models		None	None	None	Optional for 2003	The M2 will offer by the end of the 2003 year the capability of using the 4 analog inputs and proceeding with model calculation. A number of models may be similar to the ones we find in the FARADAY #MEDIC and the TMCS.

Returns

The Customer is to select from one of the listed locations to return their analog unit:

United States

General Electric Canada Inc.
Customer Service
Hydran Exchange Program
C/O: CIMETRA
8396 Route # 9 North
West Chazy, N.Y. 12992

Canada, Latin America, International

General Electric Canada Inc
Customer Service
Hydran Exchange Program
179 Brunswick Blvd
Pointe-Claire, Quebec

Europe

GE Power Systems
Customer Service
Hydran Exchange Program
Eldarvägen 4,
SE-187 75 TÅBY,
Sweden



GE Power Systems

179 Brunswick Blvd.
Pointe Claire, PQ
Canada H9R-5N2
Phone: 514-694-3637

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