



March 1, 2019

Mike Sherman  
City of Santa Rosa  
35 Stony Point Rd ,  
Santa Rosa, California 95401-4446  
Email: [ablass@srcity.org](mailto:ablass@srcity.org)  
Phone: +1 707 543 4245

**Subject:** Siemens Proposal for Services  
**Siemens Quotation Number:** CS-ID-Q000029937 R8

Dear Mike Sherman,

On behalf of Siemens, I would like to thank you for providing us the opportunity to submit this quotation to CITY OF SANTA ROSA.

Per your request Siemens Industry, Inc. is pleased to provide a proposal for the following solution. The pages in this proposal detail the prices, components and configurations for the service(s) outlined below:

- Budgetary Time & Material NXG I to NXG PRO Cotnrol Upgrade on up to 8 x Harmony VFDs

I wish to thank you for this opportunity to be of service and for your interest and confidence in our abilities. Please feel free to contact Siemens if you need further assistance by phone or email listed below.

Best Regards,

*Bobbie Stillions*

Siemens Industry, Inc.  
Industry Services

Email: [bobbie.stillions@siemens.com](mailto:bobbie.stillions@siemens.com)  
Phone:  
Customer Care Center: +1 (800) 333-7421  
Outside USA: +1 (423) 262-5710



# Proposal for Services

**Date:** March 1, 2019  
**Quotation #:** CS-ID-Q000029937 R8

Per your request Siemens Industry, Inc. is pleased to provide a proposal for the following solution.

## 1.0 PRICING

Line Item	NXGI to NXG PRO Control Upgrade – 4 VFDs Upgrade to be performed in 2019	Price for One VFD	Price for Four VFDs
1	T&M Onsite Labor	\$15,850.00	\$55,910.00
2	Required Parts	\$23,350.00	\$76,705.00
<b>Total Price (USD) (Upgrade performed in 2019)</b>		<b>\$39,200.00</b>	<b>\$132,615.00</b>

## 1.0 PRICING

Line Item	NXGI to NXG PRO Control Upgrade – 4 VFDs Upgrade to be performed in 2020	Price for One VFD	Price for Four VFDs
1	T&M Onsite Labor	\$16,485.00	\$58,145.00
2	Required Parts	\$24,285.00	\$79,775.00
<b>Total Price (USD) (Upgrade performed in 2020)</b>		<b>\$40,770.00</b>	<b>\$137,920.00</b>

3	<b>OPTIONAL: NXG PRO Spare Parts Kit</b>	1	\$10,580.00
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## 2.0 DETAILED SCOPE

State-of-the-art control upgrade. Replacement of entire NXGI control system with NXG PRO Control



### 2.1 T&M Upgrade Service – One VFD per VFD

One Remote Siemens FSR / One Visit per VFD  
 Onsite: Up to 3 x 10 Hour Days per VFD  
 Travel: Up to 2x 8 Hour Days per Visit  
 Travel Start: Monday  
 Onsite Start: Tuesday  
 Onsite End: Thursday  
 Travel End: Friday  
 Overtime Rates Included  
 Overnight Per Diem + Airline Expenses Included

### 2.2 Required Parts NXGII to NXG PRO Control Upgrade – One VFD (12 Cells)

NXG1 to NXG PRO 9/12 Cell STD Kit : 1x EA  
 NXGpro Power Supply Kit, 15V, FAN x 1  
 MEM,PRGMD,NXGPro SW,STD,V6.1.0 x 1  
 RE SISTOR,13.39 OHM,CURR XDUCER BURDEN x 4  
 DINRAIL MOUNT RELAY SOCKET 11 PIN X 2  
 SWITCH, KEY OPER,2 POS,1 NO X 1  
 MT.BKT.,PUSHBUTTON 3X3X3 X 1

**Siemens Industry, Inc.** Industry Services  
 500 Hunt Valley Road New Kensington, PA 15068  
 Creator: Bobbie Stillions  
 24 Hour Tech Support & Emergency Field Service: 1-800-333-7421  
 IQUSSO0530V7.0\_en

**Quotation #:** CS-ID-Q000029937 R8  
 Siemens Ref #: US-1902-0000099300 R0  
 CITY OF SANTA ROSA



SUPPRESSOR 0.1MF,120 OHMS,250V X 2  
 NMPLT,RESET X 1  
 RLY\_POWER\_RR2KP-UCAC120\_120VAC\_2C0 X 1  
 COMM KIT, ANYBUS, MODBUS RTU x 1  
 COMM KIT, ANYBUS, ETHERNET MODBUS AND IP x 1  
 Engineering / Drafting Hours Included  
 Service Project Management Hours Included  
 \*Part Numbers to be assigned upon engineering review, after PO Acceptance

**2.3 OPTIONAL NXG PRO SPARE PARTS KIT:**

NXGpro DCR 9-12 Cell x 1  
 MEM,PRGMD,NXGPRO SW STD, V6.3.1 X 1  
 POWER\_SPLY\_700W\_264V\_12V\_2.15V\_2.15V\_SPE X 1  
 COMM KIT,ANYBUS,MODBUS RTU X 1  
 COMMS KIT,ANYBUS,MODBUS ETHERNET & I/P X 1  
 RESISTOR, 13.39 OHM,CURR XDUCER BURDEN X 4

**3.0 OVERALL COMMENTS AND CLARIFICATIONS**

Note 1: Time and Material Pricing:

Pricing for labor and expenses is estimated. Invoices will be calculated in accordance with Siemens Technician Service Rate Sheet (Technician / Engineering Level 4). Final billing will account for actual hours traveled, actual hours worked, and Overnight per diem + Airline Expenses. Invoice will be calculated per published service rate at the time service is performed.

Note 2: Pricing for Engineering / Drafting hours, Service Project Management hours, and Parts is firm. Invoice may be issued upon shipment.

Note 3: Customer Requirement: City of Santa Rosa is responsible for:

- Free and clear access to the drive for duration of onsite work.
- At least one (1) employee to assist Siemens while onsite for the duration of the job.
- For removal and proper disposal of all job related waste and unwanted materials upon job completion.
- To provide cell lifter.

Note 4; Safety Training:

Estimated pricing does not include site Safety Training. If required, additional hours will be added to final invoice.

Note 5: Estimated Budgetary price includes up to 3 hours onsite for NXGII Control orientation upon completion of the upgrade. This orientation will be provided by Siemens FSR, before he leaves the site.

Note 6: Upon completion of this upgrade, Siemens will provide one flash drive containing the following files: Schematic Drawings, Outline Drawings, NXG Control Manual, Tool Suite Manual. Revised SOP is available upon request.

Note 7: Estimated pricing includes VFD Startup after upgrade. However, if startup is not performed during the same visit as the upgrade, additional time and expenses will be added to final invoice.

Note 8: Siemens requires **FIRM 16-20 Weeks from Purchase Order Acceptance**

Note 9: Estimated pricing includes escalation for upgrade on (4) VFDs to be performed in 2020.

Note 10: Siemens requests that Purchase Order lines match quote lines.



**4.0 SERVICE SITES, EQUIPMENT LISTS AND CONTACTS**

**Service-Site: City of Santa Rosa**

Company: CITY OF SANTA ROSA  
 Address: 35 STONY POINT RD ,  
 SANTA ROSA, California 95401-4446, USA

**Equipment List:**

Equipment Type	Siemens Part No.	Sales Order No.	Serial No.	Note	Qty
40371905	A1A459772.00	HR9185404	04791	NBH,1000HP	1
40371939	A1A459772.01	HR9185404	04792	NBH,1000HP	1
40371940	A1A459772.02	HR9185404	04793	NBH,1000HP,	1
40371965	A1A459772.03	HR9185404	04794	NBH,1000HP	1
40371992	A1A459772.04	HR9185404	04795	NBH,1000HP	1
40371993	A1A459772.05	HR9185404	4796	NBH,1000HP,	1
40372006	A1A459773.00	HR9185404	4789	NBH,1250HP,	1
40372305	A1A459773.01	HR9185404	04790	NBH,1250HP,	1

**Additional Contacts:**

Company	Name	Phone / Cell	E-mail
Ponton Industries	Anton Loof	TBD	anton@pontonind.com
Siemens Industry, Inc.	James Jackson	(801) 989-6000	jackson.james@siemens.com



## 5.0 PURCHASE ORDER AND PAYMENT DETAILS

### **Purchase Order should be addressed to:**

Siemens Industry, Inc., 500 Hunt Valley Road New Kensington, PA 15068

### **Please submit Purchase Order via Email to:**

Bobbie Stillions at [bobbie.stillions@siemens.com](mailto:bobbie.stillions@siemens.com)

### **\*To facilitate prompt order processing, Purchase Orders should include all of the following:**

- Purchase Order number or reference number
- Customer's legal entity name and bill to address
- Ship to address of services and / or parts
- Reference this Quote or proposal number: "Per your Quote / Proposal Number"
- \$ value , noting agreement of payment
- Payment Terms - (as stated in this quote)
- Authorized contact name and phone number
- Siemens requests that the PO line items match the quoted line items

## 6.0 TERMS AND CONDITIONS

Terms and Conditions shall be in accordance with Siemens Industry Services Standard Terms and Conditions, October 2015.

Any change to the scope of work will be reflected in a change to the quoted price.

Shipment: FOB Factory, Freight: Prepaid and Add, Payment Terms: Net 30

### 6.1 SAFETY TRAINING OF SIEMENS FIELD PERSONNEL

All Siemens field personnel completed internal annual safety training. Furthermore, all Siemens field personnel received training to comply with the new OSHA CFR1910.269 Electrical Safety Standard that sets minimum safety rules and practices for the design, operation, and maintenance of high-voltage systems (over 600 volts). A morning safety meeting for Siemens employees and subcontractors is to be conducted by Siemens each day while on site.

All Siemens personnel and their subcontractors shall adhere to the Siemens Division Safety Guidelines, CS101. Copies can be made available upon request for client review. Siemens will hold daily safety meetings at the prior to all work on site, at shift changes and if the project changes in any manner.

### 6.2 OFFER VALIDITY

This offer is valid for 60 days unless otherwise extended, modified or withdrawn, in writing, by Siemens. The return of a purchase order to Siemens during such validity period, along with credit approval, will be sufficient to form an agreement on the terms and conditions of this offer.

### 6.3 PROPRIETARY INFORMATION

This document contains information proprietary to Siemens. Your acceptance of it is an acknowledgment of a confidential relationship between you and Siemens with respect to this proposal document. We require it to be returned or destroyed when no longer required. We also require that neither this document nor any information contained herein is to be reproduced, transmitted, disclosed or used otherwise in whole or in part without the written authorization of Siemens.



**6.4 RESERVATION CLAUSE**

Purchaser acknowledges that Siemens is required to comply with applicable export laws and regulations relating to the sale, exportation, transfer, assignment, disposal and usage of the Work, Equipment, and/or, Services provided under the Contract, including any export license requirements. Purchaser agrees that such Work, Equipment, and/or, Services shall not at any time directly or indirectly be used, exported, sold, transferred, assigned or otherwise disposed of in a manner which will result in non-compliance with such applicable export laws and regulations. It shall be a condition of the continuing performance by Siemens of its obligations hereunder that compliance with such export laws and regulations be maintained at all times. PURCHASER AGREES TO INDEMNIFY AND HOLD SIEMENS HARMLESS FROM ANY AND ALL COSTS, LIABILITIES, PENALTIES, SANCTIONS AND FINES RELATED TO NON-COMPLIANCE WITH APPLICABLE EXPORT LAWS AND REGULATIONS.



Siemens Industry, Inc.  
100 Technology Drive  
Alpharetta, GA 30005  
+1 (800) 333-7421

Price List  
49023ER  
Revision 1

Commercial Rate Schedule for the  
USA

## Annex A: Engineering Service Rate Sheet

January 01, 2019

Prices effective January 01, 2019 and subject to the following terms: (a) change without notice; (b) the terms and conditions set forth herein.

Page 1 of 2

## Service Rates for Engineering

Siemens Industry, Inc. maintains a highly-skilled staff of competent, trained technicians, engineers, specialists and consultants for the purpose of furnishing (1) Commissioning Services, (2) Maintenance Services and (3) Consulting Services related to Drives, Automation, Motion Control Systems and Process Control Systems at customer facilities or at Siemens Industry, Inc. offices.

**Commissioning Services** typically include services related to the supervision of the installation of equipment and/or components such as drives, PLCs, HMIs, Process Automation Systems and may include the initial testing, tuning and commissioning of the equipment.

**Maintenance Services** typically provide continuing engineering services and repair to maintain equipment or system integrity.

**Consulting Services** typically include engineering studies, tests and evaluations including system or equipment modification and special customer training programs. The exact scope of services will vary from project to project and will be exclusively described in the agreement for such services.

### Classifications of Engineering Services

Siemens Industry, Inc. offers the following classifications of engineering services;

1. Engineering – Level 1
2. Engineering – Level 2
3. Engineering – Level 3
4. Engineering – Level 4

**Rates** for the above categories of services are listed on page 2 of this Price List.

### Description of Classifications of Services:

The following general guidelines are used to determine the rate applied to work performed.

The following hierarchy of documents shall control in the determination of applicable rates;

- Siemens Service Proposal
- Siemens Quick Quote
- Field Service Authorization Form
- This document

This guideline and application thereof may be subject to change by Siemens without notice.

1. **Engineering – Level 1** services typically include, but are not limited to; commissioning, maintenance and repair of commercial off the shelf (COTS) systems utilizing multiple technologies, troubleshooting of complex intermittent problems and site supervision of technicians.
2. **Engineering – Level 2** services typically include, but are not limited to; the provision of uniquely skilled or specialized personnel with expertise in the application, commissioning, troubleshooting and analysis of configured equipment or hardware systems utilizing single or multiple technologies.
3. **Engineering – Level 3** services typically involve, but are not limited to; the provision of personnel whose specialized expertise and certifications are required for the commissioning of equipment, design of processes, design of control software, Mechatronics Analysis, Architecture design, Nuclear Certifications, etc.

4. **Engineering – Level 4** services typically include, but are not limited to; the provision of principal engineers, Sr. process experts or Sr. Systems Engineers for consulting, system analysis, process studies, optimization, architecture design, etc.

### Foreign Engineering Service

Services commensurate with those listed above are also available to customers serving foreign markets. Your local Siemens Industry, Inc. representative can provide you with additional pricing information upon request.

### Trade and Other classifications

On selected jobs where it is practical to utilize fitters, mechanics, winders, welders, machinists, etc. to perform a portion of the work, their services will be provided at current local rates.

### Invoicing

Unless otherwise specified in its proposal, Siemens Industry, Inc. shall have the right to invoice the customer for all material delivered and work performed under this order at such times that it considers appropriate.

### Terms and Conditions of Service

The Standard Terms and Conditions of Sales for Siemens Joint Product and Services Offering found at <http://www.industry.usa.siemens.com/to pics/us/en/standard-tandc/Documents/Siemens-Standard-Terms-for-Joint-Product-and-Services-Offering.pdf> are incorporated by this reference and made a part of this document.

**Siemens Industry, Inc. Industry Services**  
500 Hunt Valley Road New Kensington, PA 15068  
Creator: Bobbie Stillions  
24 Hour Tech Support & Emergency Field Service: 1-800-333-7421

FSE\_Rates2018

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Siemens Ref #: US-1902-0000099300 R0  
CITY OF SANTA ROSA



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Price List  
49023ER  
Revision 1

Commercial Rate Schedule for the  
USA

January 01, 2019

Prices effective January 01, 2019 and  
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notice; (b) the terms and conditions set forth herein.

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## Service Rates for Engineering

Classification / Rate Schedule				
Engineering Service Level	Hourly Rate ①	Overtime	Premium	Min. Billing
		Weekday & Saturdays ②	Sundays & Holidays ③	≤ 4 Hours
Engineering – Level 1	\$ 216	\$ 324	\$ 432	\$ 864
Engineering – Level 2	\$ 247	\$ 370	\$ 493	\$ 987
Engineering – Level 3	\$ 292	\$ 438	\$ 584	\$ 1,168
Engineering – Level 4	\$ 321	\$ 481	\$ 641	\$ 1,283
Nuclear & Offshore	Applicable Service Level Hourly Rate x 1.20			
Per Diem (Local) <sup>1</sup>	\$110/day			
Per Diem (Overnight) <sup>2</sup>	\$260/day			

<sup>1</sup>Includes meals, ground transportation (i.e. vehicle mileage, tolls, parking, etc.) and incidental expenses (excludes airfare and hotel expenses)

<sup>2</sup>Includes hotel, meals, ground transportation and incidental expenses (excludes airfare expenses)

① **Straight time rates** apply to all time worked or traveled during a normal eight-hour workday. The normal eight-hour workday is defined as any consecutive eight-hour day shift period (Monday through Friday, excluding holidays) between the hours of 7am and 7pm, with an allowance for lunchtime.

② **Overtime rate** applies to all hours worked or traveled outside of the normal eight-hour workday or in excess of eight hours on weekdays and all time worked or traveled on Saturdays.

③ **Premium rate** applies to all hours worked or traveled on Sundays and Holidays.

**Hourly and Daily Rates** do not include travel or living costs. Should the customer require additional documentation such as copies of employee expense reports and/or expense receipts, a written request must be submitted to Siemens Industry, Inc.

### Per Diem Rates

The Per Diem rates include Field Service Representative meals, ground transportation (vehicle mileage, tolls, parking, etc.) incidental expenses and hotel expenses (if applicable). If required, airline travel mobilization and demobilization expenses will be invoiced at actual cost plus 15% in addition to Per Diem. Travel time from the Field Service Representative's home office to and from the job site will be billed separately. Consult your local Siemens Industry, Inc. representative for additional information.

### Standby Time

When service personnel are on the job site but unable to perform services requested due to circumstances beyond Siemens Industry, Inc. control, the customer will be charged up to eight hours per day standby time at applicable rates.

### Special Training

All time to complete site-specific training will be billed at the applicable Service Level Hourly Rate indicated in the Classification / Rate Schedule table provided above.

### Nuclear & Offshore

The hourly rate for nuclear and offshore applications will be billed at the applicable Service Level Hourly Rate x 1.20 due to the special badging, qualifications, and certifications required by these applications.

### Other Charges

The following charges will be applied in addition to the service rates outlined above;

#### A. Expendable Small Tools, Special Tools and Equipment

When a particular job requires the furnishing of small expendable tools or specialized tools, equipment, or instruments not included in standard Field Service Representative "Truck Stock", a charge will be made equal to either the cost of acquisition plus 15% or a rental charge, as appropriate. "Truck Stock" is defined to include small standard hand tools, digital multimeter, small scope, 500V insulator tester and 10A contact resistance tester. Refer to Siemens Price List 49020B for Test Equipment Rental Charges.

#### B. Material Furnished by Siemens Industry, Inc.

All Siemens Industry, Inc. material used on the job will be billed at current prices.

#### C. Material Purchased from Subcontractors or Other Vendors

Materials or services from Subcontractors or Vendors will be billed at cost plus a handling fee.





Siemens Industry, Inc.  
100 Technology Drive  
Alpharetta, GA 30005  
+1 (800) 333-7421

Price List  
49023TR  
Revision 1

Commercial Rate Schedule for the  
USA

## Annex A: Technician Service Rate Sheet

January 01, 2019

Prices effective January 01, 2019 and subject to the following terms: (a) change without notice; (b) the terms and conditions set forth herein.

Page 1 of 2

## Service Rates for Technicians

Siemens Industry, Inc. maintains a highly-skilled staff of competent, trained technicians, engineers, specialists and consultants for the purpose of furnishing (1) Commissioning Services, (2) Maintenance Services and (3) Consulting Services related to Drives, Automation, Motion Control Systems and Process Control Systems at customer facilities or at Siemens Industry, Inc. offices.

**Commissioning Services** typically include services related to the supervision of the installation of equipment and/or components such as drives, PLCs, HMIs, Process Automation Systems and may include the initial testing, tuning and commissioning of the equipment.

**Maintenance Services** typically provide continuing engineering services and repair to maintain equipment or system integrity.

**Consulting Services** typically include engineering studies, tests and evaluations including system or equipment modification and special customer training programs. The exact scope of services will vary from project to project and will be exclusively described in the agreement for such services.

### Classifications of Technician Services

Siemens Industry, Inc. offers the following classifications of technician services;

1. Technician – Level 1
2. Technician – Level 2
3. Technician – Level 3
4. Technician – Level 4

**Rates** for the above categories of services are listed on page 2 of this Price List.

### Description of Classifications of Services:

The following general guidelines are used to determine the rate applied to work performed.

The following hierarchy of documents shall control in the determination of applicable rates;

- Siemens Service Proposal
- Siemens Quick Quote
- Field Service Authorization Form
- This document

This guideline, and application thereof, may be subject to change by Siemens without notice.

1. **Technician – Level 1** services include, but are not limited to; installation checkout, initial startup, inspection, maintenance, or equipment repair on standard, standalone products.
2. **Technician – Level 2** services include, but are not limited to; installation checkout, startup, inspection, maintenance, and repair of standardized, coordinated systems utilizing a single technological discipline (e.g. Drives).
3. **Technician – Level 3** services include, but are not limited to; installation checkout, startup, inspection, maintenance, standard configuration or repair of standardized, coordinated systems utilizing multiple technological disciplines (e.g. Drives and Automation).

4. **Technician – Level 4** services typically include, but are not limited to; the provision of uniquely skilled or specialized personnel with expertise in the application, commissioning, troubleshooting and analysis of configured equipment or hardware systems utilizing single or multiple technologies.

### Foreign Technician Service

Services commensurate with those listed above are also available to customers serving foreign markets. Your local Siemens Industry, Inc. representative can provide you with additional pricing information upon request.

### Trade and Other classifications

On selected jobs where it is practical to utilize fitters, mechanics, winders, welders, machinists, etc. to perform a portion of the work, their services will be provided at current local rates.

### Invoicing

Unless otherwise specified in its proposal, Siemens Industry, Inc. shall have the right to invoice the customer for all material delivered and work performed under this order at such times that it considers appropriate.

### Terms and Conditions of Service

The Standard Terms and Conditions of Sales for Siemens Joint Product and Services Offering found at <http://www.industry.usa.siemens.com/to pics/us/en/standard-landc/Documents/Siemens-Standard-Terms-for-Joint-Product-and-Services-Offering.pdf> are incorporated by this reference and made a part of this document.



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Price List  
49023TR  
Revision 1

Commercial Rate Schedule for the  
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January 01, 2019

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Page 2 of 2

## Service Rates for Technicians

### Classification / Rate Schedule

Technician Service Level	Hourly Rate ①	Overtime	Premium	Min. Billing
		Weekday & Saturdays ②	Sundays & Holidays ③	≤ 4 Hours
Technician – Level 1	\$ 171	\$ 256	\$ 341	\$ 683
Technician – Level 2	\$ 187	\$ 281	\$ 374	\$ 748
Technician – Level 3	\$ 216	\$ 324	\$ 432	\$ 864
Technician – Level 4	\$ 247	\$ 370	\$ 493	\$ 987
Nuclear & Offshore	Applicable Service Level Hourly Rate x 1.20			
Per Diem (Local) <sup>1</sup>	\$110/day			
Per Diem (Overnight) <sup>2</sup>	\$260/day			

<sup>1</sup>Includes meals, ground transportation (i.e. vehicle mileage, tolls, parking, etc.) and incidental expenses (excludes airfare and hotel expenses)

<sup>2</sup>Includes hotel, meals, ground transportation and incidental expenses (excludes airfare expenses)

① **Straight time** rates apply to all time worked or traveled during a normal eight-hour workday. The normal eight-hour workday is defined as any consecutive eight-hour day shift period (Monday through Friday, excluding holidays) between the hours of 7am and 7pm, with an allowance for lunchtime.

② **Overtime rate** applies to all hours worked or traveled outside of the normal eight-hour workday or in excess of eight hours on weekdays and all time worked or traveled on Saturdays.

③ **Premium rate** applies to all hours worked or traveled on Sundays and Holidays.

**Hourly and Daily Rates** do not include travel or living costs. Should the customer require additional documentation such as copies of employee expense reports and/or expense receipts, a written request must be submitted to Siemens Industry, Inc.

#### Per Diem Rates

The Per Diem rates include Field Service Representative meals, ground transportation (vehicle mileage, tolls, parking, etc.) incidental expenses and hotel expenses (if applicable). If required, airline travel mobilization and

demobilization expenses will be invoiced at actual cost plus 15% in addition to Per Diem. Travel time from the Field Service Representative's home office to and from the job site will be billed separately. Consult your local Siemens Industry, Inc. representative for additional information.

#### Standby Time

When service personnel are on the job site but unable to perform services requested due to circumstances beyond Siemens Industry, Inc. control, the customer will be charged up to eight hours per day standby time at applicable rates.

#### Special Training

All time to complete site-specific training will be billed at the applicable Service Level Hourly Rate indicated in the Classification / Rate Schedule table provided above.

#### Nuclear & Offshore

The hourly rate for nuclear and offshore applications will be billed at the applicable Service Level Hourly Rate x 1.20 due to the special badging, qualifications, and certifications required by these applications.

#### Other Charges

The following charges will be applied in addition to the service rates outlined above;

#### A. Expendable Small Tools, Special Tools and Equipment

When a particular job requires the furnishing of small expendable tools or specialized tools, equipment, or instruments not included in standard Field Service Representative "Truck Stock", a charge will be made equal to either the cost of acquisition plus 15% or a rental charge, as appropriate. "Truck Stock" is defined to include small standard hand tools, digital multimeter, small scope, 500V insulator tester and 10A contact resistance tester. Refer to Siemens Price List 49020B for Test Equipment Rental Charges.

#### B. Material Furnished by Siemens Industry, Inc.

All Siemens Industry, Inc. material used on the job will be billed at current prices.

#### C. Material Purchased from Subcontractors or Other Vendors

Materials or services from Subcontractors or Vendors will be billed at cost plus a handling fee.

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500 Hunt Valley Road New Kensington, PA 15068  
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Quotation #: CS-ID-Q000029937 R8  
Siemens Ref #: US-1902-0000099300 R0  
CITY OF SANTA ROSA

**SIEMENS**



Industry Services

## Secure your Perfect Harmony MV Drive Investment with the latest technology

### NXGpro Digital Control System Upgrade

**The NXGpro Digital Control is standard in new drives and is also designed to quickly and economically upgrade your existing control**

**NXGpro is the latest generation of control for SINAMICS PERFECT HARMONY GH180 medium voltage drives. NXGpro is easily retrofitted into existing NXGI and NXGII drives while utilizing the same software and software tools.**

NXGI/NXGII hardware and software are currently controlling over 10,000 SINAMICS PERFECT HARMONY GH180 medium voltage variable frequency drives with an excellent history of reliability. The NXGI control was introduced in 2001 and followed by the NXGII control in 2005. NXGpro is the latest evolution in control systems and is smaller, more powerful, reliable, and efficient than previous generations.

NXGpro software has the same basic functionality as NXGII but with an additional Tamper Resistant Input Protection feature. The

purpose of this new feature is to ensure protection of the drive by verifying that the upstream input circuit breaker is functioning properly. NXGpro also uses the same compiler and operating system as NXGII, so maintenance tools such as ToolSuite remain virtually unchanged.

Existing drives with NXGI or older control systems may contain parts which are no longer available and could result in extended downtime in the event of a failure. Retrofitting your SINAMICS PERFECT HARMONY medium voltage variable frequency drive with the NXGpro control provides you with maximum reliability, simplifies maintenance, and increases performance. To learn more about the NXGpro control or to discuss an upgrade program to transition your fleet, please contact your local Siemens representative.

This state-of-the-art upgrade package has been developed for your Perfect Harmony Drive to improve its control performance and reliability while minimizing the issues with obsolescence.

The NXGpro Digital Control unit improves performance, simplifies maintenance, and enhances reliability by:

- Adding a control feature to better protect the drive
- Changing the physical design to allow faster and easier service
- Simplifying complexity of assembly and number of components
- Increasing microprocessor capability to enable future software enhancements

### Benefits when Upgrading from NXGI/NXGII to NXGpro

Description	NXGpro Improvements	Benefits
Input Protection	<ul style="list-style-type: none"> <li>• Enhanced Control Feature with Tamper Resistant Input Protection function</li> </ul>	<ul style="list-style-type: none"> <li>• Better input protection scheme through the addition of Tamper Resistant Input Protection function. This feature tests the timing of the opening of the contactor in the input circuit breaker to ensure that the breaker functions properly</li> </ul>
Serviceability and Maintenance	<ul style="list-style-type: none"> <li>• Test board available for fast and easy test access</li> <li>• Smaller footprint for easier service</li> <li>• Moved flash disk for access without disassembly</li> <li>• Designed to update software and firmware without special tools</li> </ul>	<ul style="list-style-type: none"> <li>• Shorter downtime for testing, troubleshooting, and maintenance service due to improved accessibility and the ability to quickly swap the complete unit if needed</li> </ul>
Reliability	<ul style="list-style-type: none"> <li>• Reduced number of circuit boards by as much as 50%</li> <li>• Reduced the number of inter board connections by as much as 80%</li> <li>• Reduced active DCR electronic components and bulk capacitors by 40%</li> <li>• Reduced DCR external electrical connections by 50%</li> <li>• Eliminated ISA bus card edge connections that can become misaligned</li> <li>• Eliminated use of ribbon cables within the control rack</li> <li>• Eliminated the need for control rack cooling fans</li> <li>• Built in support for redundant power supplies</li> </ul>	<ul style="list-style-type: none"> <li>• Improved reliability by eliminating and reducing components, reducing possibilities for connection failures, and simplifying the overall complexity of the control system</li> </ul>
Communications	<ul style="list-style-type: none"> <li>• NXGpro supports NXGI/NXGII standard Communication protocols</li> <li>• Also supports EtherNet/IP™ communication protocol</li> <li>• If other Communication methods are needed, please contact the factory</li> </ul>	<ul style="list-style-type: none"> <li>• Easy transition since NXGpro is compatible with NXGI and NXGII standard communication protocols</li> <li>• Increased communication capability with the addition of EtherNet/IP™ on NXGpro</li> </ul>

### Evolution of the NXG Control System



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## SINAMICS PERFECT HARMONY Control Update

### Overview

NXG/NXGII hardware and Eagle software are currently controlling over 10,000 SINAMICS PERFECT HARMONY GH180 medium voltage variable frequency drives with an excellent history of reliability. Siemens is committed to a philosophy of constant product improvement aimed at increasing customer value. The latest generation of control is the NXGpro control which is smaller, more powerful, more reliable, and more efficient than previous generations. The NXGpro control rack is standard in new drives but is also designed to quickly and economically replace existing NXG and NXGII hardware. NXGpro is easily retrofitted into existing NXG and NXGII drives while utilizing the same software and software tools.

### Background

The NXG control hardware for SINAMICS PERFECT HARMONY medium voltage variable frequency drives was introduced in 2001. In 2005, NXGII hardware was introduced to reduce the number of circuit boards and improve reliability. The NXGII hardware remained constant from 2005 through 2014 while the software was periodically upgraded to achieve better performance and improve reliability.



Figure 1: NXG Hardware



Figure 2: NXGII Hardware



Figure 3: NXGpro Hardware

As part of Siemens commitment to continuous improvement, NXGpro hardware was developed to enhance reliability and simplify maintenance. In addition, NXGpro was specifically designed to reduce inconvenience to the user by being easily retrofitted into existing NXG and NXGII drives while utilizing the same software and software tools.

### NXGpro

NXGpro hardware includes the following changes which improve reliability and performance.

- Reduced number of circuit boards from 6 to 3 (9 and 12 cell systems)
- Reduced the number of inter board connections from 10 to 2 (9 and 12 cell systems)
- Eliminated use of ribbon cables within the control rack
- Eliminated ISA bus card edge connections that can become misaligned
- Eliminated control rack cooling fans by substantially reducing control rack energy consumption
- Eliminated power supply cooling fan by utilizing an optional sealed power supply
- Reduced complexity of assembly
- Reduced DCR electronic components (ICs) and bulk capacitors by 40%
- Reduced DCR external electrical connections by 50%
- Added support for redundant power supplies
- Moved flash disk for access without disassembly
- Increased input/output capability to enable more flexible design
- Increased microprocessor capability to enable future software improvements
- Designed to update software and firmware without special tools

### Upgrading to NXGpro

NXGpro uses software (Version 6.1 or later) which interfaces with NXGpro hardware with the same functionality as the existing NXGII (Eagle Version 5.3) but with additional input protection checks. The NXGpro uses the same compiler and operating system as the NXGII so maintenance tools such as ToolSuite remain virtually unchanged. The NXGpro control hardware has been designed for easy retrofit into Drives with both NXGI and NXGII controllers. The NXGpro's hardware organization is similar to NXGII.



Figure 4: NXGII control tub

### Existing Drives with NXGII

Existing drives with the NXGII control will be supported with in-kind parts for many years. However, for customers interested in the benefits of NXGpro, upgrade kits will soon be available.

### Existing Drives with NXGI or Legacy Controls

Existing drives with NXGI or Legacy controls may contain parts which are no longer available. There are currently kits available to upgrade these drives to NXGII, and there will soon be a kit to upgrade these drives directly to NXGpro.

### Summary

NXGpro upgrades your SINAMICS PERFECT HARMONY medium voltage variable frequency drive control hardware to improve its reliability, increase performance, and enable the implementation of additional software features and enhancements in the future. A scheduled upgrade program can be developed to transition your fleet to NXGpro before the existing control hardware becomes obsolete and to take advantage of future software enhancements. To learn more about the NXGpro control or to discuss an upgrade program, please contact your local Siemens representative.



Figure 5: NXGpro control tub

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