ATEX Dust Supplement

Series 9 Stainless Steel Peripherals

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Issue C

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Proprietary Notice

ATEX Dust Supplement – Series 9 Stainless Steel Peripherals

Part Number: 120/16636-01

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Contact NDC

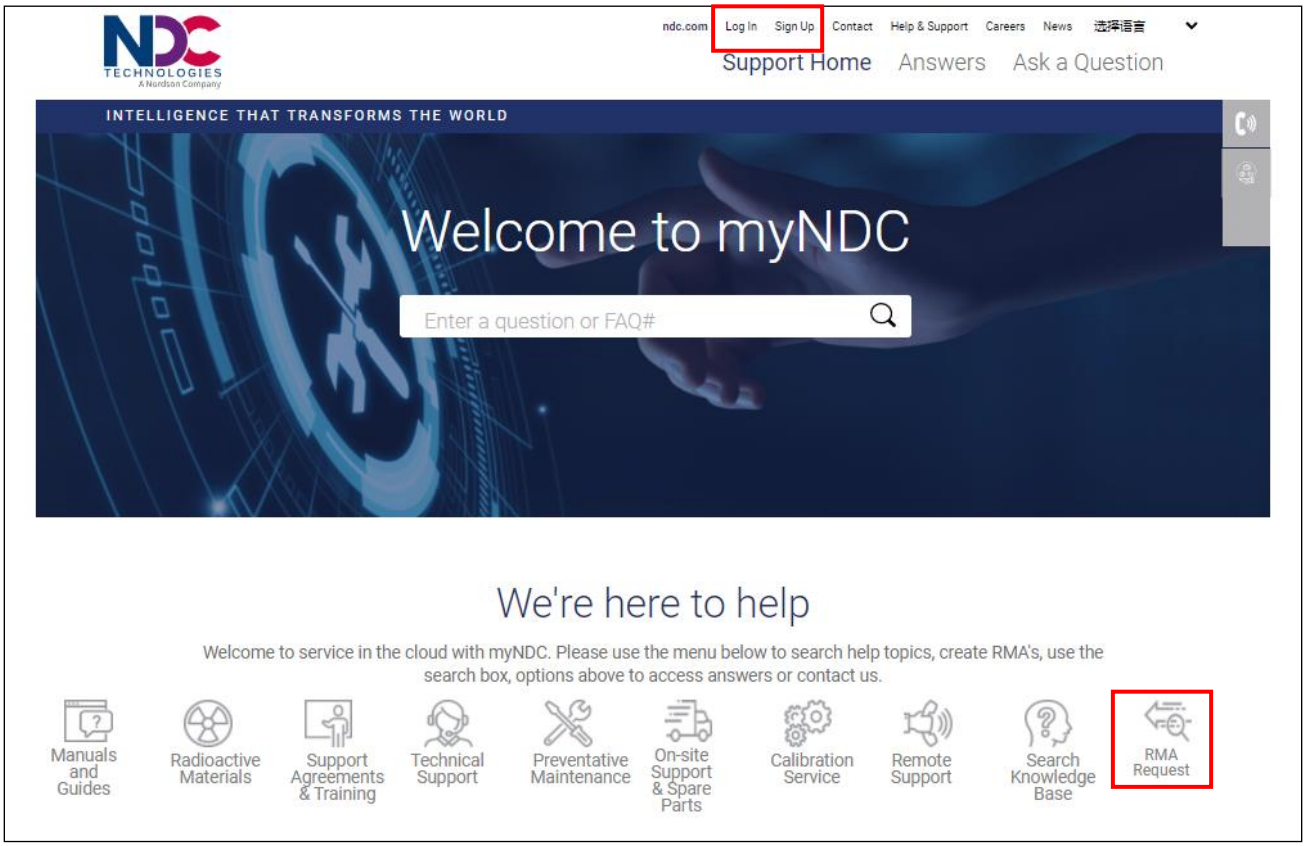
Online Support

You can access the NDC Customer Support portal, my**NDC** at https://ndc.custhelp.com.

myNDC is a cloud-based portal that allows you to get product support by phone, ask a question, provide feedback, submit an RMA request or access information in our on-line knowledge database. You can browse the myNDC site or create a myNDC account.

- To create a myNDC account, click **Log In** or **Sign Up**. After creating the account, you will be immediately logged in. To log in on subsequent visits to myNDC, click **Log In**, enter your user name and password, and then click **LOG IN**.

- To submit an RMA, click on **RMA Request** and follow the on-screen instructions.



NDC Contact Numbers

Please have your sales order number at hand before contacting NDC.

Americas	+1 626 939 3855
Asia Pacific	NDC Asia Pacific Customer Service Toll-free contact numbers: • Thailand: 1800 012 048 • Indonesia: 00 1803 016 4969 • Korea: 00 7981 420 30749 • Malaysia: 1800 81 9290 • Taiwan: 00 801 128 027 • India: 000 800 0402 514 Singapore non toll-free number: +65 6579 2411 Email ID: osc-apac@ndc.com
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	All other countries (English speaking): +44 1621 852244 Please select option 2 to be connected to the service team

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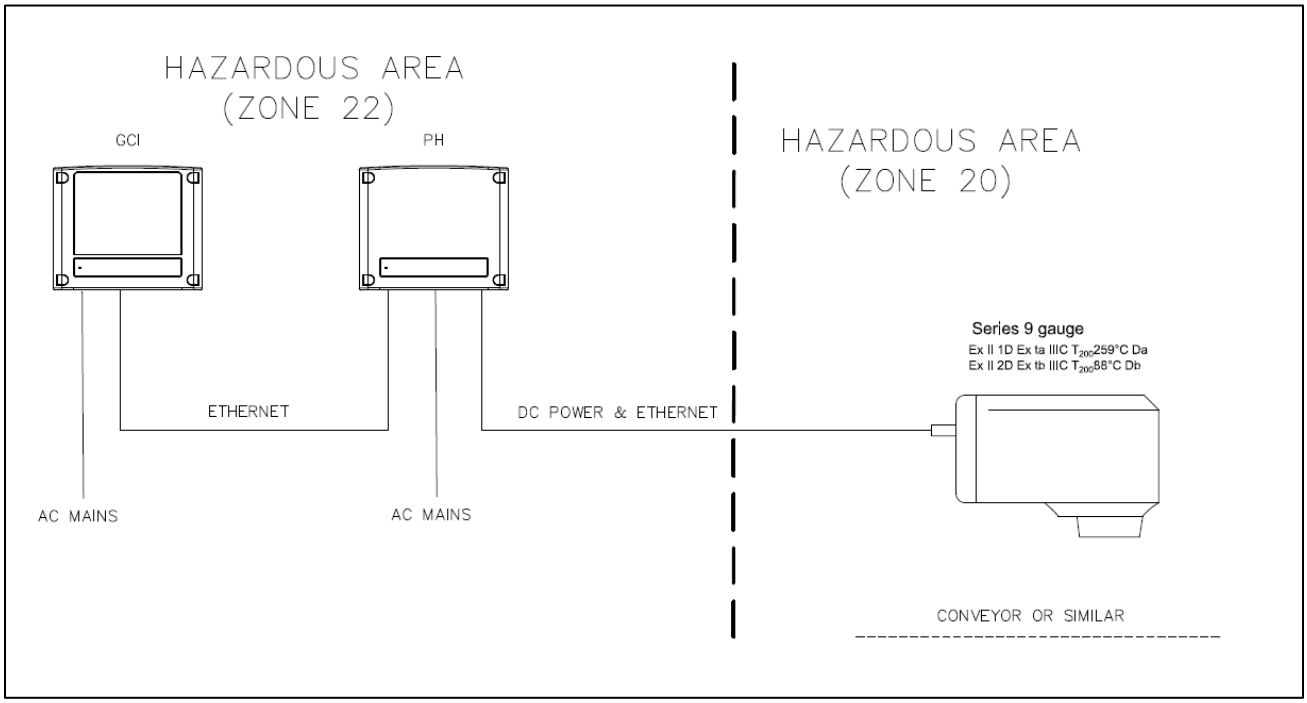
CHAPTER 1

1 Introduction

The following supplement is intended to cover the safety aspects of the Series 9 ATEX Gauge Control Interface (GCI), Operator Terminal (OT), Operator Terminal + (OT+), Gauge Control Port (GCP) and ATEX Power Hub (PH), for use in potentially explosive DUST environments, and should be read in conjunction with any other guides supplied with the equipment. It is intended as a guide only, and assumes that the user fully understands the safety requirements for the intended Hazardous Area and takes full responsibility to ensure that the requirements are met.

The GCI, OT, OT+, GCP and PH are certified by NDC to comply with the following standards: EN60079-0:2018 and EN60079-31:2014 Dust ignition protection by enclosure "t" rated as Cat.3D equipment suitable for dust Zone 22.

A typical Series 9 gauging system layout is shown below, providing details of the Hazardous area locations. Note that this manual only covers the ATEX GCI/OT/OT+/GCP/PH, with the ATEX Series 9 gauge being covered by a separate guide.



Limitations warnings (X):

The Gauge Control Interface and Operator Terminal must be located in an area where there is a low risk of impact, on a vertical flat wall and upright orientation.

CHAPTER 2

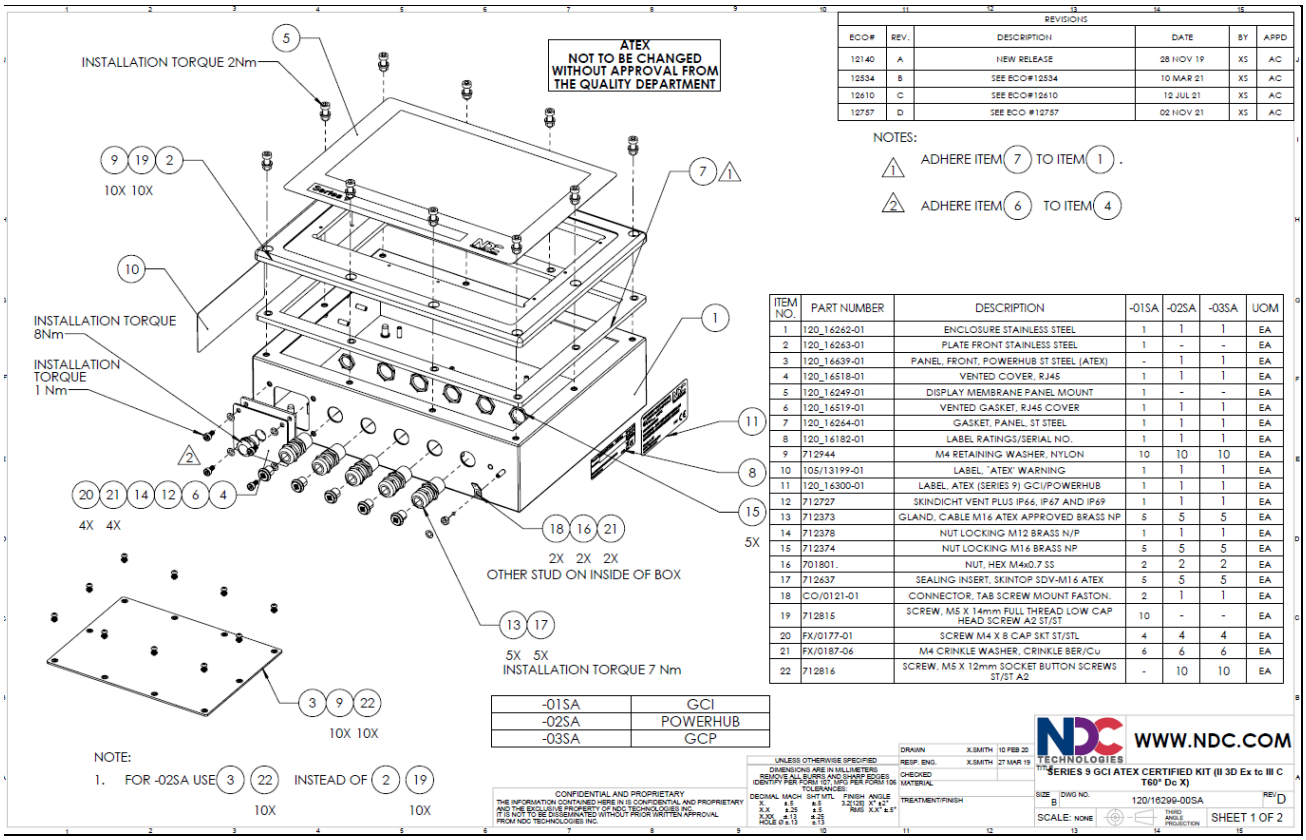
2 Protection Employed

The ATEX GCI/OT/OT+/GCP/PH are adapted from standard build, with add-ons to make them suitable for a DUST Hazardous area, and thus will be marked accordingly. Please check that the Hazardous area marking is in place before installing and putting them into service.

The hazardous area protection employed is for combustible dust, and uses protection type “t”, which is a rugged dust tight enclosure, comprising the following key features:

- Stainless Steel base and lid with elastomer seals forming a dust tight enclosure to IP6X.
- GCI/OT plastic impact resistant overlay.
- ATEX certified cable glands and inserts to blank unused entries.
- Warning label “WARNING – DO NOT OPEN WHEN EXPLOSIVE ATMOSPHERE IS PRESENT”.

These key features can be seen in the two exploded views below. Note that the GCI also covers the OT and OT+, being the same assembly, and the PowerHub also covers the GCP in the same assembly.



REVISIONS					
ECO#	REV.	DESCRIPTION	DATE	BY	APPD
12140	A	NEW RELEASE	28 NOV 19	XS	AC
12534	B	SEE ECO#12534	10 MAR 21	XS	AC
12610	C	SEE ECO#12610	12 JUL 21	XS	AC
12757	D	SEE ECO #12757	02 NOV 21	XS	AC

ITEM NO.	PART NUMBER	DESCRIPTION	-01SA	-02SA	-03SA	UOM
1	120_16262-01	ENCLOSURE STAINLESS STEEL	1	1	1	EA
2	120_16263-01	PLATE FRONT STAINLESS STEEL	1	-	-	EA
3	120_16639-01	PANEL, FRONT, POWERHUB ST STEEL (ATEX)	-	1	1	EA
4	120_16518-01	VENTED COVER, RJ45	1	1	1	EA
5	120_16249-01	DISPLAY MEMBRANE PANEL MOUNT	1	-	-	EA
6	120_16519-01	VENTED GASKET, RJ45 COVER	1	1	1	EA
7	120_16264-01	GASKET, PANEL, ST STEEL	1	1	1	EA
8	120_16182-01	LABEL RATINGS/SERIAL NO.	1	1	1	EA
9	712944	M4 RETAINING WASHER, NYLON	10	10	10	EA
10	105/13199-01	LABEL, `ATEX` WARNING	1	1	1	EA
11	120_16300-01	LABEL, ATEX (SERIES 9) GCI/POWERHUB	1	1	1	EA
12	712727	SKINDICHT VENT PLUS IP66, IP67 AND IP69	1	1	1	EA
13	712373	GLAND, CABLE M16 ATEX APPROVED BRASS NP	5	5	5	EA
14	712378	NUT LOCKING M12 BRASS N/P	1	1	1	EA
15	712374	NUT LOCKING M16 BRASS NP	5	5	5	EA
16	701801.	NUT, HEX M4x0.7 SS	2	2	2	EA
17	712637	SEALING INSERT, SKINTOP SDV-M16 ATEX	5	5	5	EA
18	CO/0121-01	CONNECTOR, TAB SCREW MOUNT FASTON.	2	1	1	EA
19	712815	SCREW, M5 X 14mm FULL THREAD LOW CAP HEAD SCREW A2 ST/ST	10	-	-	EA
20	FX/0177-01	SCREW M4 X 8 CAP SKT ST/STL	4	4	4	EA
21	FX/0187-06	M4 CRINKLE WASHER, CRINKLE BER/CU	6	6	6	EA
22	712816	SCREW, M5 X 12mm SOCKET BUTTON SCREWS ST/ST A2	-	10	10	EA

The EX marking for all versions is as follows:

Ⓔx II 3 D Ex tc IIIC T60ºC Dc X
0°C ≤ Tamb ≤ 50°C

X = low risk impact area and indoor use only

2.1 Lid Seal

The lid of the GCI/OT/OT+/GCP/PH is held in place with 10 x M5 screws, and tightened evenly to a torque of 2Nm to ensure a good seal.

If the lid needs to be removed for any reason, this must only be done when the explosive atmosphere is <u>NOT</u> present and the unit is isolated from the mains power supply. This is achieved by loosening the 10 x M5 screws using a 4mm Allen key and lifting the lid away from the unit.

To refit the lid, offer the lid against the base aligning the holes, and then tighten all 10 x screws gradually in a cross pattern to achieve a torque of 2.0Nm for each screw, using a 4mm Allen Key torque wrench.

2.2 Cable Entry

ATEX certified glands are fitted with integral ATEX certified blank inserts that should be kept in place to ensure the seal. In order to ensure that the enclosure is sealed, these inserts should only be removed when replaced with cables.

2.3 RJ45 Port – Seal

The RJ45 ethernet port for the peripheral is located beneath a sealed cover plate, as shown in the photo below.

To expose and use the RJ45 port, remove the metal cover by unscrewing the four M4 retaining screws with a 3.0mm Allen Key. **Note that this can only be done when the explosive atmosphere is NOT present**. Always refit the cover and tighten the 4 x screws to a torque of 1.0Nm using a 3.0mm Allen Key torque wrench.

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CHAPTER 3

3 Electrical

3.1 Earthing the Peripheral

The GCI/OT/OT+/GCP/PH must be permanently connected to earth through its M4 earth stud, using a 4mm square (minimum) cross-sectional area earth braid.

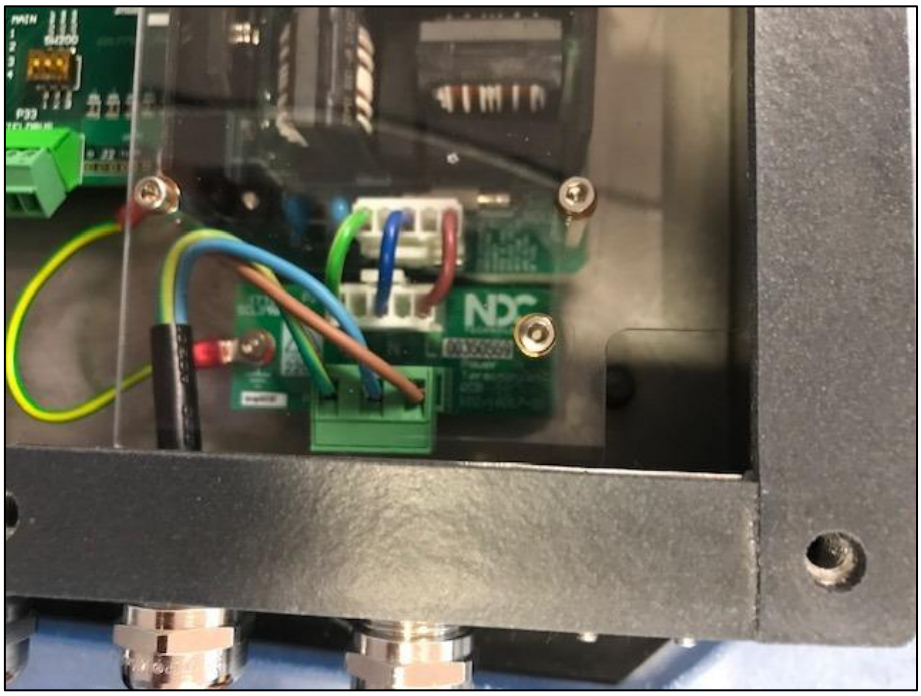
3.2 Mains Power/Cable Connection

The GCI/OT/OT+/GCP/PH includes a 24vdc power supply, and requires a 100W single phase mains supply 85-264vac 50/60Hz, which should be routed through a lockable isolation switch to prevent power from being applied during maintenance.

The power cable is intended to be supplied by the user, and must be 3-core mains cable, double-insulated, 18 AWG (minimum) wire gauge with an outside diameter in the range Ø6.0mm to Ø10.0mm, to ensure that it will seal in the cable gland.

The cable must be routed through the ATEX gland fitted, closest to the power terminals, as shown in the photo below, terminated from left to right: **1. Green** (Earth), **2. Blue** (Neutral), **3. Brown** (Live), following the legend on the termination board.

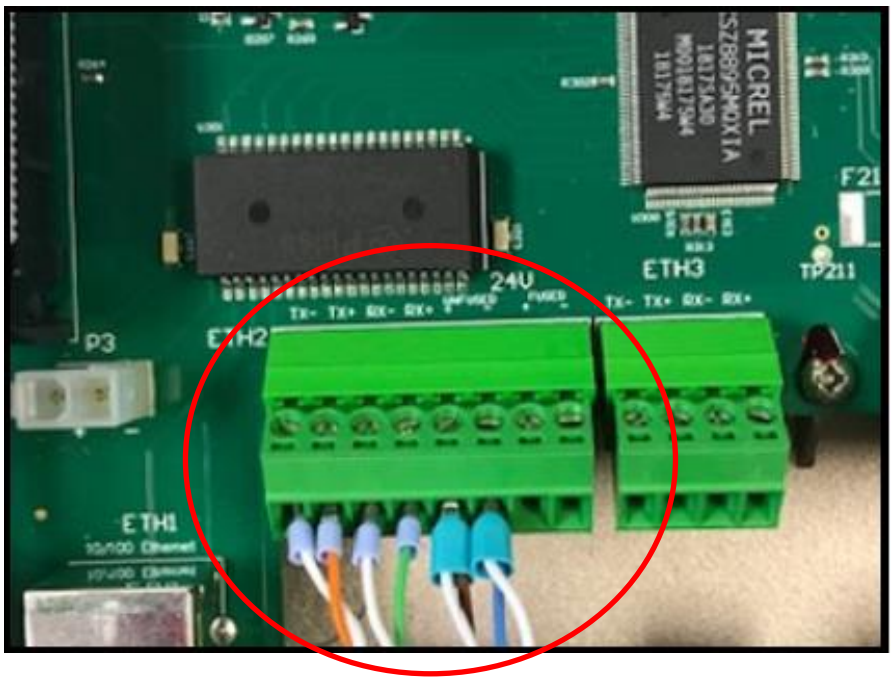
To clamp the cable securely and form a good seal, the gland nut must be tightened with a 20mm A/F torque wrench to 7.0Nm.



3.3 Sensor Services Cable Connection

The Series 9 Sensor is connected to the GCI/OT/OT+/GCP/PH through the services cable supplied with the sensor.

The cable must be routed through the ATEX gland fitted, closest to the “ETH2 24v” screw terminal connector, as shown in the photo below, with terminations as given in the following table.



Wire Colour	“ETH2 24v” terminal	Function
Pair 1 White	Tx-	Ethernet Tx-
Pair 1 Orange	Tx+	Ethernet Tx+
Pair 2 White	Rx-	Ethernet Rx-
Pair 2 Green	Rx+	Ethernet Rx+
Pair 3 White	UNFUSED +	Power output +24Vdc
Pair 3 Brown	UNFUSED +	Power output +24Vdc
Pair 4 White	UNFUSED -	Power output 0Vdc return
Pair 4 Blue	UNFUSED -	Power output 0Vdc return

To clamp the cable securely and form a good seal, the gland nut must be tightened with a 20mm A/F torque wrench to 7.0Nm.

3.4 Remote Ethernet Cable Connection

The auxiliary ethernet connection for remote connection, must be made using an Industrial Cat5E network cable (normally supplied) with an outside diameter in the range Ø6.0mm to Ø10.0mm, to ensure that it will seal in the cable gland. This cable must be routed through the ATEX gland fitted, closest to the “ETH3” screw terminal connector, with terminations as given in the following table.

Wire Colour	“ETH3” terminal	Function
Pair 1 White	Tx-	Ethernet Tx-
Pair 1 Orange	Tx+	Ethernet Tx+
Pair 2 White	Rx-	Ethernet Rx-
Pair 2 Green	Rx+	Ethernet Rx+

To clamp the cable securely and form a good seal, the gland nut must be tightened with a 20mm A/F torque wrench to 7.0Nm.

3.5 Auxiliary Signal Connections

The auxiliary input and output signals for the GCI/OT/OT+/GCP/PH and corresponding screw terminal connections are fully described in the main user guide. The cables for these connections are intended to be provided by the user, and must be routed through the ATEX certified cable glands closest to the termination point.

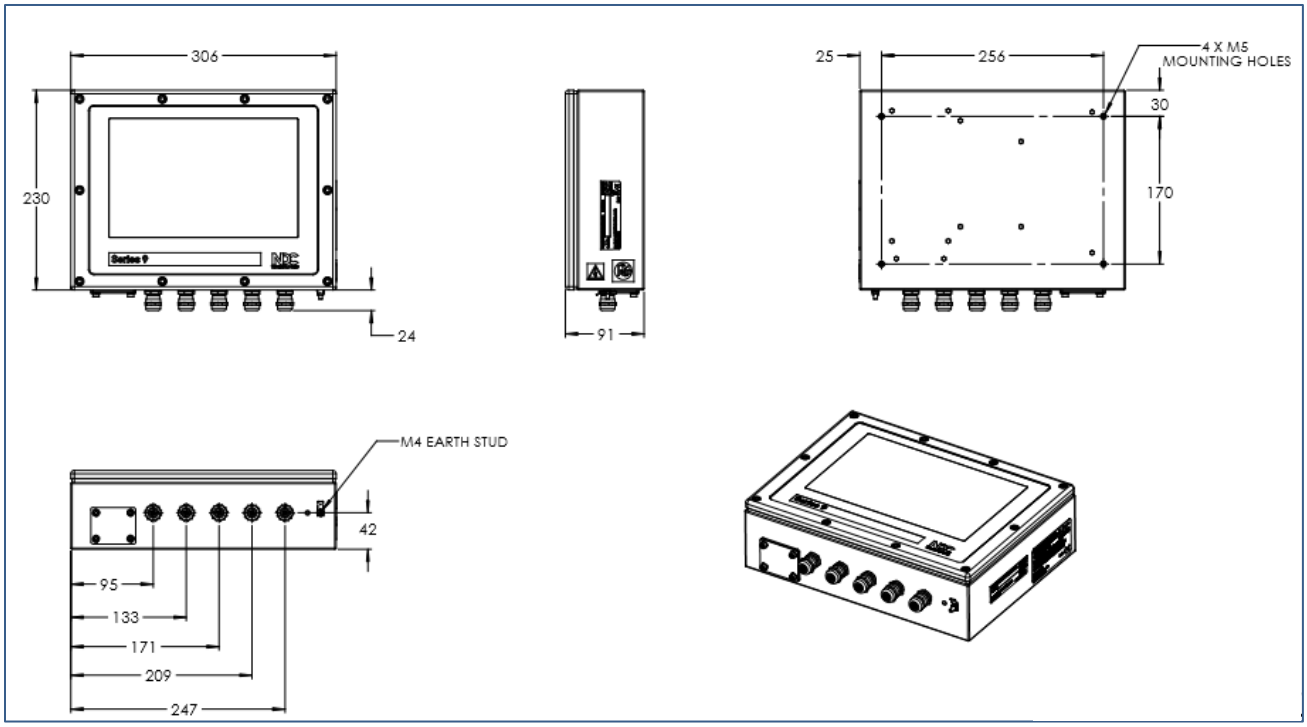
The outside diameter of the cable must be Ø6.0mm to Ø10.0mm, to ensure that it will seal in the cable gland.

To clamp the cable securely and form a good seal, the gland nut must be tightened to 7.0Nm using a 20mm A/F torque wrench for large glands, and 16mm A/F for small.

CHAPTER 4

4 Physical Size and Ratings

GCI/OT/OT+/GCP/PH	
AC input	85-264Vac 50/60Hz, 100W (includes Sensor)
DC output	24Vdc, 50W
Mounting	Wall-mounted using M5 screws into the back of the unit
Digital communications	Ethernet TCP/IP
Environmental sealing	IP67
Maximum surface temperature	60°C
Ambient temperature range	0°C to 50°C
Storage temperature range	-30°C to 70°C
Relative Humidity	80% over full temperature range
Weight	6Kg
Pollution degree	Degree 1
Dimensions	See outline drawing on next page



All dimensions in mm

CHAPTER 5

5 Maintenance

5.1 Warnings and Cautions

When carrying out any maintenance on the equipment, observe the following to avoid injury to personnel and damage to the equipment:

- If the gauge has been operating in a very high temperature environment, allow adequate time for it to cool before handling.
- Gauge maintenance must be carried out in a clean room, away from the working area of the equipment.
- When working on any system components, observe standard anti-static precautions.
- Ensure that the lid is fitted before powering the equipment.

5.2 General Cleaning

External surfaces of gauges and other system components should be cleaned periodically with a damp, non-abrasive cloth only.

Keep cables and connectors free from contaminants that could cause chemical damage.

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CHAPTER 6

6 Servicing, Returns and Recycling

6.1 Servicing and Returning your Equipment

Your instrument was carefully inspected electrically and mechanically prior to shipment. It should be free of surface defects and scratches, and it should be in perfect working order upon receipt. If any indication of damage is found, file a claim with the carrier immediately, prior to using the instrument. If no damage is apparent, proceed by using this manual to install and setup this instrument.

Save the shipping carton and packing material for future storing or shipment of the instrument. If, at some future time, the instrument must be returned to the factory for service, include a full description of the instrument failure and the mode of operation the instrument was in at the time of failure. Also include a contact person to discuss the instrument failure.

When returning equipment for service, it is important to first obtain a Return Material Authorization (RMA) number. The RMA number is needed for proper handling of returned equipment.

- To obtain an RMA, go to https://ndc.custhelp.com/.
- To create a myNDC account, click the **Log in or Sign up** button. After creating the account, you will be immediately logged in. To log in on subsequent visits to myNDC, click the **Log in or Sign up** button, enter your username and password, and then click **Log in**.
- To submit an RMA, click on the **RMA Request** link and follow the on-screen instructions.

Ship the instrument in the original carton, or, if the original carton is unavailable, ship in a carton providing sufficient protection. Send the instrument to the Asia, Europe, or USA office, whichever is closest to you or to the office indicated by your sales engineer. Place the RMA number on the outside of the carton and include a purchase order number and any other information specific to your instrument. Field warranty service is available if the customer pays travel expenses by advance purchase order. All service operations should be performed by skilled electronics technicians, who have been trained by NDC Technologies.

6.2 Recycling, Disposal and Sustainability

NDC Technologies provides intelligent measurement and control solutions to help you focus on your unique mission in a more sustainable way. Better for your people. Better for your bottom line. Better for the planet. For this reason, NDC Technologies encourages its customers to recycle and dispose of equipment in a way which is responsible and encourages sustainability.

Please check the following before disposing of your equipment:

- Is the equipment worth repairing? If in doubt, contact NDC Service.
- If you are aware of any hazardous materials in your equipment, ensure qualified personnel take responsibility for its disposal. Some examples of hazardous substances include lead, mercury, cadmium, chromium VI, flame retardants, plasticizers, fluorescent tubes, monitors containing cathode ray tubes and products containing capacitors. NDC is compliant with the European WEEE and the most current RoHS Directive.
- Can you re-use or recycle any constituent parts? For example, if the housing/chassis is made of metal, it can be recycled by your local authority. Ensure qualified personnel take responsibility for dismantling the equipment.

If the equipment does need to be disposed of, please dispose of it in a way that does not harm the environment.

Warranty

1. All sales of NDC Technologies products are subject to the contractual terms and conditions of the Order pursuant to which they were sold to Buyer, including Warranty terms. The following terms are a general summary of the contractual Warranty terms, NOT a revision or alternative to the contractual terms, and are presented as merely a point of reference for your information. The contractual Warranty is the complete and exclusive statement of all NDC Technologies warranties to Buyer. In the event the following terms are in conflict with any of the contractual Warranty terms, the contractual Warranty terms shall be deemed to control.

   The warranty terms contained herein are expressly in lieu of any and all other warranties, expressed or implied, including any warranty of merchantability or fitness for a particular purpose. In no event shall NDC Technologies be liable for any incidental, consequential or special damages, including but not limited to, any loss of business, income or profits, expenses incurred for time when the system is not in operation, and any labor costs relating to or arising out of the performance, functioning or use of the system.

   Purchaser assumes the risk for use of this product and agrees to indemnify and hold NDC Technologies harmless for any and all damage to person or to property resulting therefrom.

   NDC Technologies grants no license under any patent rights except the right, under only such patents as may be owned or acquired by NDC Technologies, to use the product sold hereby for the purpose for which it is sold. NDC Technologies does not warrant that the product or its use does not infringe any patent owned by persons other than NDC Technologies.

2. NDC Technologies guarantees all products to be free from defects in material and workmanship for the following periods[1]:

   - Product and peripherals – 2 years from shipment
   - Source lamp – 5 years from shipment
   - Filter wheel motor – 5 years from shipment
   - Spare parts – 1 year from shipment
   - Replacement lamps and motors supplied under warranty – 1 year or up to the original 5 year warranty from shipment of the sensor, whichever is longer

   [1] Refer to the contractual terms and conditions of the Order for usage of the warranty.

   During this period, NDC Technologies will repair or at its option replace, free of all charges for parts and labor, any NDC Technologies parts determined by it to have been broken or damaged due to causes other than improper application, abuse or negligence. NDC Technologies' obligation to repair or replace shall not extend to expendable parts which are subject to normal operating wear.

   Nothing in this paragraph 2 will require NDC Technologies to make repairs or replacements where:

A. The product has been repaired, other than by an authorized NDC Technologies dealer or an NDC Technologies employee, or altered in any way without the prior written consent of NDC Technologies; or

B. The product has not been properly maintained in accordance with any operating and maintenance manual supplied therewith; or

C. The product has been damaged as a result of fire, flood, war, insurrection, civil commotion, acts of God or any other cause beyond the control of NDC Technologies or Buyer.

3. NDC Technologies' liability shall be limited to the obligations set forth in Paragraph 2. These shall be the Buyer's sole and exclusive remedies, whether in contract, tort or otherwise, provided, however, that in lieu thereof, NDC Technologies at its option may replace the entire product on an exchange basis or refund the purchase price against the return of the defective product.

4. NDC Technologies will not be responsible for failure to provide service or parts due to shortage of materials, labor or transportation strikes or delays, or any causes beyond NDC Technologies' control.

5. Unless otherwise specified by NDC Technologies, all warranty repairs will be made at NDC Technologies' facility. The customer shall be responsible for all expenses of packing, freight and insurance in connection with the shipment of products to NDC Technologies for repair. NDC Technologies will pay the cost of returning the equipment to customer.

   If it is mutually determined by the buyer and NDC Technologies that the examination, replacement or repair takes place at the buyer's facility, then the buyer will be responsible for NDC Technologies' travel and living expenses incurred in traveling to and from the buyer's facility, and during the time of the visit, as well as the cost of field labor and replacement parts unless the parts being repaired or replaced are determined to have been defective, in which event the cost of said repaired or replacement parts shall be borne by NDC Technologies. These travel and living expenses will be billed to the buyer at actual cost to NDC Technologies.

6. No person, including any NDC Technologies distributor, agent or representative, is authorized to assume any liability on behalf or in the name of NDC Technologies, and NDC Technologies shall not be bound to any understandings, representations, or agreements with respect to warranties except as set forth in this policy.

7. NDC Technologies requests immediate notification of any claims arising from damage in transit in order to determine if carrier responsibility exists. If damaged equipment arrives, save the shipping container for inspection by the carrier and telephone NDC Technologies as soon as possible.