

## ETA Communication Site Installer (R56)

# CERTIFICATION PREPARATION GUIDE

### Effective Date

July 1, 2017; updated July 1, 2019, November 8, 2019, April 16, 2020, and November 10, 2020

## ETA Communication Site Installer (R56) Certification Exam

ETA's Certification for Communication Site Installer (R56) requires candidates to pass the industry-standard proctored exam:

The skills and knowledge certified by this exam are represented on the competencies at the URL below:

[http://www.eta-i.org/comps/R56\\_comps.pdf](http://www.eta-i.org/comps/R56_comps.pdf)

### Purpose of the Certification Preparation Guide

The intent of this [R56 Preparation Guide](#) is an overview of the content and context of this ETA certification's competencies and exam. Please review this guide in its entirety to gain a thorough understanding of what is required to achieve this certification.

Successful examinees are those who will have met the following preparation points:

- Fulfilled the requirements outlined in the "Examination Preparation" section
- Familiarized themselves with and studied the "Examination Content" section details

If you have not completed these suggested preparation points, we strongly advise against your taking the exam until you have done so. **Even among seasoned industry veterans, there is a significant high rate of exam failure for those who DID NOT follow these suggested preparation points prior to attempting the R56 exam.**

### Target Audience

The R56 certification is targeted at those individuals involved with the installation of Motorola Solutions systems.

- Motorola Solutions Inc. employees
- Motorola Solutions Channel Partners
- Motorola Solutions customers and system owners
- System managers
- System technicians
- System installers
- Motorola Solutions or ETA approved attendees

## Examination Preparation

To sit for this R56 Communication site Installer exam, the following applicable learning and experience requirements must be met:

To earn the R56 certification, guidelines are in the Table 1 below. Verify which applicable sections row pertains to you. Training and Documentation is available at the Motorola Solutions Learning eXperience portal at <https://learning.motorolasolutions.com>.

### Requirements: Table 1

Effective 1 July 2017

You are:	How to Certify/Recertify:
Certified R56 after 1 JULY 2015;  Recertify <b>WITHIN</b> the four – year term.	R56 action with ETA required as of July 2017 before your R56 certification fully expires; contact ETA, C.A. proctor, and sit for R56 certification exam upon completion of the following:  Review/Study: <ul style="list-style-type: none"> <li>• R56 Prep Guide (V.5.0)</li> <li>• R56 2017 Standards Manual 68P81089E50-C</li> <li>• ETA R56 Competencies</li> <li>• Your original R56 training information may help recall also</li> </ul>
NEW to R56 certification <b>OR</b> expired past the four – year term and any grace period	Contact ETA, C.A. proctor, and sit for R56 certification exam upon completion of the following:  Complete: <ul style="list-style-type: none"> <li>• NST9252 Introduction to R56 Course (if NEW to R56)</li> <li>• NST925 Site Installation Practices Workshop (R56) Course</li> </ul> Review/Study: <ul style="list-style-type: none"> <li>• R56 Prep Guide (V.5.0)</li> <li>• R56 2017 Standards Manual 68P81089E50-C</li> <li>• ETA R56 Competencies</li> <li>• NST925 Site Installation Practices Workshop (R56) training materials</li> </ul>

**THE NST925-6 Standards Update Course has run its necessity and is expired. The NST925-6 course is no longer available for the R56 recertification examination attempt.**

**If your R56 certification is expired past the grace period, you must attend NST925 Site Installation Practices Workshop (R56) Course to recertify.**

### Suggested Additional Education and Work Experience:

- An Associate's Degree or Bachelor's Degree in Electrical Engineering or Electronics Engineering, or other related field of study;
- Knowledge of the National Fire Protection Assoc. (NFPA 70)® National Electrical Code® (NEC®) <https://www.nfpa.org/NEC>; In Canada: Canadian Electrical Code, Part I (24th edition), Safety Standard for Electrical Installations or Code canadien de l'électricité, code CE ou CSA C22.1
- Mike Holt Enterprises electrical training ([www.mikeholt.com](http://www.mikeholt.com)) or equivalents:
  - Bonding and Grounding
  - Limited Energy and Communications Systems
  - NEC® Wiring Methods
  - NEC® or NEC Updates
  - Electrical Theory
- Two or more years of experience in the field working with Motorola Solutions system installations

## Examination Content

Content associated with the exam is fully documented in the R56 INSTALLER Competency Document. This Competency Document is available and should be fully reviewed before attempting the exam at the URL below:

[http://www.eta-i.org/comps/R56\\_comps.pdf](http://www.eta-i.org/comps/R56_comps.pdf)

Content associated with the exam is additionally documented in R56 2017 Standards Manual 68P81089E50-C and in NST925 Site Installation Practices Workshop (R56) training materials. This content is available during the NST925 and should be fully reviewed before attempting the exam starting at the URL below:

### Exam Details

Exam Number and Name:	R56120 R56 Communication Site Installer
Cost:	\$105
Availability:	<a href="http://www.eta-i.org/test_sites.html">http://www.eta-i.org/test_sites.html</a>
Duration:	Exam Duration is up to 120 minutes
Number of Items:	Exam contains 112 questions.
Item Types:	Multiple Choice, Multiple Response, True/False
Passing Scores:	75%
Available Languages:	English; French-Canadian

## Examination Registration and Logistics

### Registration and Logistics upon completion of the NST925 Site Installation Practices Workshop (R56) Course in the live VIRTUAL field training:

1. Study and review the free ETA R56 certification material including the objectives/competencies provided. Study and review the additional NST925 study materials provided prior to and during the ONLINE VIRTUAL ADBOBE-based training course.
2. Arrange payment with ETA prior to testing as the preferred method by calling ETA at (800) 288-3824 and/or complete the REMOTE PROCTORING form: [Remote Proctoring Examinee Registration Form](#) .
3. To take the R56 exam with the remote proctoring solution by staying in, socially distant, after registering, you will be directed to ETA partner [ExamRoom.AI](#). Coordinating the links with online examination in the TRAPEZA testing system and ExamRoom.AI may take up to 48 hours from registering until being able to take your examination#.
  - a. # all remote examinees must have a working web cam and microphone.

### Registration and Logistics upon completion of the NST925 Site Installation Practices Workshop (R56) Course in the live field training:

1. Study and review the free ETA R56 certification material including the objectives/competencies provided. Study and review the additional NST925 study materials provided prior to and during the course.
2. Arrange payment with ETA prior to testing as the preferred method by calling ETA at (800) 288-3824.
3. Take the exam with the present R56 Trainer / C.A. and the R56 test booklets, if available#. Online examination with the TRAPEZA testing system may or may not be available.
  - a. # If the trainer is not a registered ETA C.A., the student is required to follow the below “returning home” option to attempt R56 certification examination.

### Registration and Logistics upon completion NST925-6 R56 Standards Update Course or the NST925 Site Installation Practices Workshop (R56) Course AND returning home before attempting the R56 certification examination:

1. Decide which ETA certification(s) you would like to take and review the free objectives/competencies provided by ETA. Call to see if additional study materials are available.
2. Find an ETA certification administrator (C.A.) near you to proctor the exam. You can search ETA's online database of test sites at [www.eta-i.org/test\\_sites.html](http://www.eta-i.org/test_sites.html), or contact ETA at (800) 288-3824.
3. Decide whether to take the exam online with the TRAPEZA testing system or paper/pencil booklet. Note: A certification administrator (C.A.) must be present regardless of which test format is chosen.
4. Arrange a time to take the exam with the chosen C.A.
5. Arrange payment with ETA prior to testing as the preferred method by calling ETA at (800) 288-3824.
  - a. Or complete the REMOTE PROCTOR: [Remote Proctoring Examinee Registration Form](#).

6. Arrive early with the proper materials to take the exam. You may bring scratch paper and a non-programmable calculator to the exam. For the R56 exam online with Trapeza you will be given up to two hours to complete; with the booklet paper/pencil format you may request a few extra minutes past the two hour time limit. Photo ID and #2 pencils required. No other electronic devices or study materials are permitted during the examination attempt; you will be asked to leave them with the C.A.
  - a. To take the R56 exam with the remote proctoring solution by staying in, socially distant, after registering, you will be directed to ETA partner ExamRoom.AI. Coordinating the links with online examination in the TRAPEZA testing system and ExamRoom.AI may take up to 48 hours from registering until being able to take your examination#.
  - b. All remote examinees must have a working web cam and microphone.
7. Once the examination attempt is completed, the C.A. will submit your exam and information along with your payment to ETA, unless pre-paid.
  - a. If you test online with the TRAPEZA testing system, you will be able to view your score immediately as payment was made prior to testing.
8. Examinations are processed within 7-10 business days of arrival at ETA headquarters. However, scores may be requested online through the ETA website ([www.eta-i.org/exam\\_results.html](http://www.eta-i.org/exam_results.html)) or by calling ETA at (800) 288-3824.

## Additional R56 Content

### Sample Test Items

**Read the question carefully.** Follow instructions provided.

**The appropriate answer is the best answer to select.** There is only one appropriate answer per question, unless asked to select two or three answers.

1. **When connecting a conductor, grounding electrode conductor, communication bonding backbone conductor and ground bus conductor to the PBB or SBB (Primary Bonding Bar or Secondary Bonding Bar), Which of the following methods of connection is acceptable?**
  - A. Insulation piercing connectors.
  - B. Self-tapping or sheet metal type screws
  - C. two-hole lugs**
  - D. Tinnerman or similar type clips
  - E. Aluminum connection devices.
2. **Which is NOT an advantage of a Dry Chemical Extinguishing agent?**
  - A. Fast flame knockdown characteristics allow the dry chemical to find its way in and around nearly everything in the vicinity of the discharge.
  - B. Dry chemical agents have non-corrosive characteristics**
  - C. Normally have an ABC rating and are safe for use on structural, fuel, and energized electronic equipment fires.
  - D. No adverse environmental impact.

3. To achieve maximum efficiency of parallel ground rods, spacing should be \_\_\_\_\_ the Ground Rod Length.
- A. 1X
  - B. 2X**
  - C. 3X
  - D. 4X
4. When grounding conductors are installed and routed, which of the following are taken into consideration? *“(select the THREE best answers).”*
- A. Length
  - B. Support**
  - C. Weight
  - D. Protection**
5. Which is **NOT** a requirement for branch circuits that exit the equipment shelter for use with outdoor equipment?
- A. All outdoor electrical equipment shall be protected from the environment and sealed from the elements.
  - B. All outdoor receptacles shall be Ground-Fault Circuit-Interrupter (GFCI) type receptacles or supplied from GFCI breakers.
  - C. Flexible conduit can be used for all exterior circuit branches without exception.**
  - D. All exterior wall penetrations through which conduit passes shall be sealed.
  - E. Exterior panelboards, receptacles and switches shall be housed in NEMA Type 3 or Type 3R housing.
6. What is the maximum distance a # 2/0 AWG ground bus conductor can be routed?
- A. 33 ft
  - B. 41 ft
  - C. 52 ft
  - D. 66 ft**
7. If used, an Internal Perimeter Bonding Bus (IPBB) shall meet which of the following installation requirements? *(select the SINGLE best answer)*
- A. The interior perimeter ground ring **shall** be constructed of 35 mm<sup>2</sup> csa (#2 AWG) or coarser copper conductor.
  - B. Minimum bending radius of the interior perimeter ground ring conductor **shall** be 150 mm (.5 ft).
  - C. The interior perimeter ground ring **shall** be located 305 mm (1 ft.) from the ceiling where practical.
  - D. both A and C are correct requirements**

## Frequently Asked Questions (FAQ)

Are there VIRTUAL “live” training courses available in the field?

Online VIRTUAL training courses may be offered in the field under special circumstances provided by or under the Motorola Solutions authority. Social distance/stay-at-home orders can be maintained through special VIRTUAL means. Contact your local Motorola Solutions Account Representative and/or Customer Support Manager or ETA (<https://www.eta-i.org/motorola.html>) at (800)-288-3824.

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How do I find out my examination score?

Pass/Fail results from the exam will be available at: [http://www.eta-i.org/results\\_reviews.html](http://www.eta-i.org/results_reviews.html) or by calling ETA at (800)-288-3824.

If you take your exam online with TRAPEZA, your results will display immediately after completing the test. Do not click the NEXT button or ENTER too quickly after your SUBMIT button or the second overall final screen will be viewed, bypassing the details screen before it can be viewed. ETA will process the examination and mail your exam results and, if successful – the certification materials, to you within 10 business days of receiving your examination.

What if I have other relevant industry-recognized certifications or have completed related training?

Some individuals may already be competent in the requirements for obtaining this certification. The Communication Site Installer (R56) certification examination requires that an individual complete and provide written evidence of having attended either the NST925 – Communication Site Installer Workshop prior to attempting the exam. The additional relevant material will enhance the required pre-requisite material and better prepare the individual for the R56 examination.

How long will my R56 certification be valid?

Your ETA Communication Site Installer certification will remain valid for a FOUR (4) YEAR TERM. Recertification is required as the R56 is not maintainable as are other ETA / Motorola specific certifications: <http://www.eta-i.org/motorola.html> for details. View your R56 certification term in the upper left portion of your printed R56 certification and also on your R56 wallet card.

What if I complete the course, fail the certification exam attempt and then also fail the FREE retake exam attempt?

If the certification exam is not passed (75%) by the second attempt, then the individual must attend another Motorola NST925 Workshop to be eligible for the R56 third examination attempt. (<https://www.eta-i.org/motorola.html> R56 Communication Site Installer description)

What if I lose or need a copy of my certification or wallet card?

Replacement materials may be obtained from: [http://www.eta-i.org/replacement\\_materials.html](http://www.eta-i.org/replacement_materials.html) or by calling ETA at (800)-288-3824.

What if I have any other questions regarding my R56 or other ETA Motorola Solutions related certification?

Inquiries may be submitted from: <https://www.eta-i.org/contact.html> or by calling ETA at (800)-288-3824.