



# Frequently Asked Questions (FAQ)

# What is a Level 2 Charger?



A **Level 2 charger** refers to a 240-volt electric vehicle charger that offers a range of amperage options, typically spanning from **30 amps to 80 amps**, depending on the manufacturer. These chargers are designed to provide the quickest and most efficient means of charging your vehicle safely at your residence.

On the other hand, a **Level 1 charger** operates at 120 volts and offers a range of amperage options typically ranging from **15 amps to 20 amps**. Compared to Level 2 chargers, **Level 1 chargers** are relatively slower in terms of charging speed. For a 15-amp charger, it translates to approximately 17 kilometers of range per hour of charge, while a 20-amp charger provides around 24 kilometers of range per hour of charge.

It is important to note that the **charging rate** may vary depending on factors such as the **specific model** of the electric vehicle, the charging infrastructure, and the battery's current state. Therefore, it is advisable to consult the **manufacturer's recommendations** for the most accurate charging details specific to your vehicle.

If you have any further questions or need assistance in selecting the appropriate charger for your needs, please feel free to **reach out to us**. We are here to provide you with the necessary guidance and expertise to ensure a smooth and efficient charging experience for your electric vehicle.





# What type of charger should I purchase?

When considering the type of charger to purchase for your electric vehicle, it's crucial to take various factors into account, with the capacity of your current electrical service being the most significant one. Your electrical service capacity determines the charging levels available to you. In most installations, there are typically two types of charging levels: **11.5 kW (60-amp circuit)** or **7.7 kW (50-amp circuit)**.

It's important to consider the **power consumption** of your household in your **day-to-day living**, as well as any additional specialty electrical loads such as hot tubs, steam baths, or other electrical apparatus.

These factors can impact the available ampacity for your electrical system. However, it's worth noting that even if your system is equipped with **common household electrical appliances** like air conditioners, furnaces, electric stoves, and electric dryers, it doesn't necessarily disqualify you from getting **the charger you desire**.

At our installation service, we have experience working with both **100-amp and 200-amp systems**, and we understand that these systems commonly include the household appliances. Therefore, we can **accommodate your needs** and provide the charger you desire while ensuring the **compatibility** and **safety** of your electrical system.

We believe in delivering **professional** and reliable service, tailored to meet your specific requirements. By considering the **capacity** of your current electrical service and any additional electrical loads, we can guide you towards selecting the **appropriate charger** that will efficiently and safely meet your charging needs.

Please don't hesitate to **reach out to us** if you have any further questions or require assistance in choosing the ideal charger for your electric vehicle. We are here to provide you with exceptional service and help you make an informed decision.



# What is a NEMA 14-50?

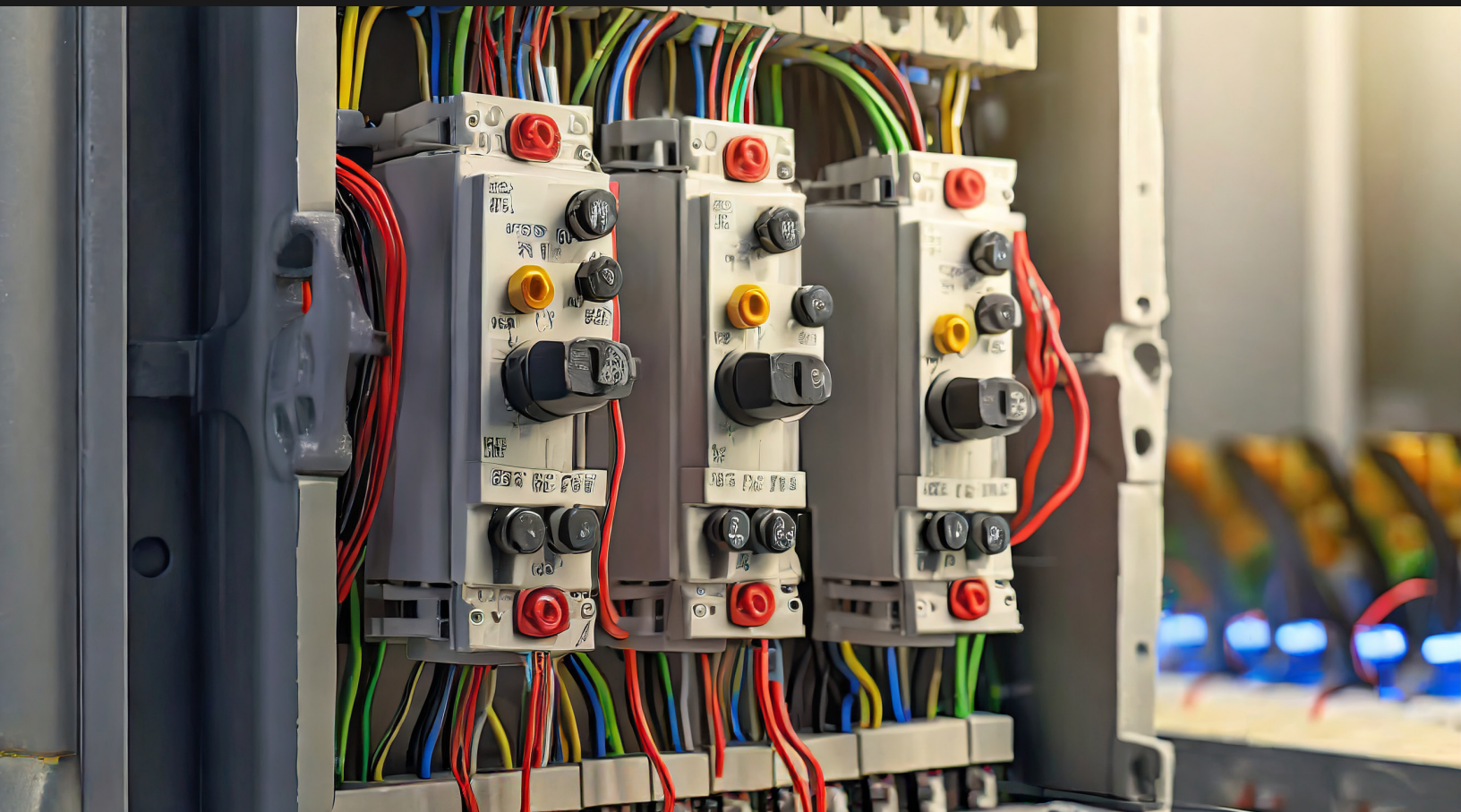


The **NEMA 14-50 receptacle** is a highly regarded **240-volt 50-amp** outlet that has gained preference among certain auto manufacturers. This receptacle is known for its reliability and compatibility with electric vehicles. In terms of output, the typical **NEMA 14-50 receptacle** provides a **32-amp (7.7 kW)** charging capacity, which is suitable for many electric vehicles on the market.

It's worth mentioning that some third-party chargers offer an intermediate charging value of **40 amps (9.6 kW)** output, and they are also designed to utilize the **NEMA 14-50 receptacle**. These chargers provide an additional charging capacity, allowing for faster charging times while still leveraging the advantages of the **NEMA 14-50 receptacle**.

By utilizing the **NEMA 14-50 receptacle**, you can benefit from a widely recognized and industry-standard outlet that ensures compatibility and ease of use for your electric vehicle charging needs. Whether you choose the typical **32-amp (7.7 kW)** charging capacity or opt for a **third-party charger** with a higher output, this receptacle provides a versatile solution that caters to a range of electric vehicle charging **requirements**.

If you have any questions or require further information about the **NEMA 14-50 receptacle** or any other charging options, please don't hesitate to reach out to us. Our team of knowledgeable professionals is here to assist you and provide guidance based on your specific needs.





# What is the minimum gauge of cable to power a NEMA 1450 receptacle?

The Ontario Electrical Safety Code establishes the minimum cable gauge requirement for a 50-amp circuit as #8 cable. However, we believe in providing our clients with the option to future-proof their homes by offering the installation of a cable rated for a 60-amp charger. Our intention behind this recommendation is to account for the dynamic nature of life and the possibility of evolving charging needs.

We understand that your driving habits may change over time, potentially leading to the need for a greater range for your electric vehicle. By installing a cable rated for a 60-amp charger, we aim to ensure that our clients have the flexibility and capacity for expansion if required in the future.

It's essential to highlight that the wire used in any installation is a critical component. A larger gauge wire enables higher charging output, provided that the vehicle manufacturer has approved a higher charging capacity. This consideration ensures that our clients can maximize the charging potential of their electric vehicles while maintaining the necessary safety standards.

By offering the option to install a cable rated for a 60-amp charger, we aim to provide a comprehensive solution that takes into account both current and potential future charging needs. Our commitment to delivering professional and customer-focused service means that we prioritize your long-term satisfaction and convenience.

If you have any questions or concerns regarding cable gauge, charging capacity, or any other aspect of your installation, please don't hesitate to contact us. Our team of experts is here to provide the necessary guidance and support to help you make an informed decision tailored to your specific requirements.



# Do I have to upgrade my panel?



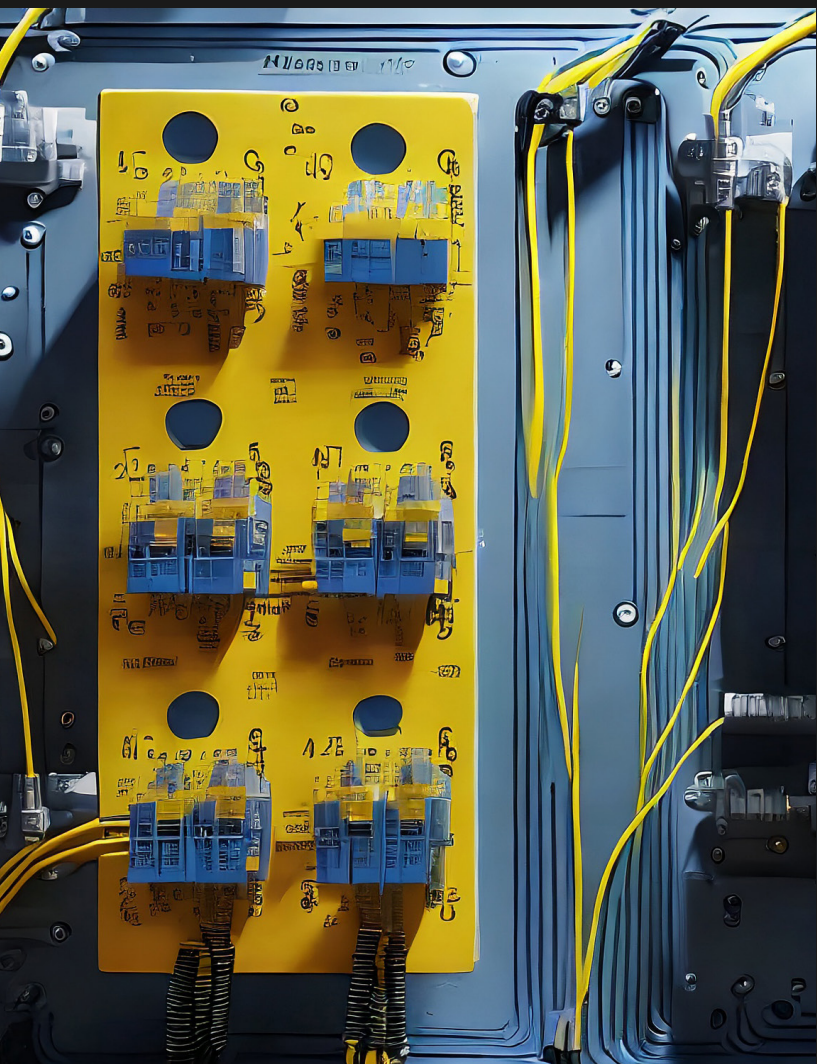
In Ontario, we understand that determining the feasibility of installing a charging option for your electric vehicle is a crucial step. Fortunately, the Ontario Electrical Safety Code includes provisions that allow us to perform a comprehensive calculation to assess whether your existing electrical panel can handle the additional electric load.

As part of our professional service, we will conduct this calculation to ensure that your electrical system is compatible with the desired charging option for your vehicle. Our goal is to provide you with a solution that not only meets your charging needs but also aligns with your budget.

Transparency is a key value in our approach. Before commencing any work, we will guide you through the calculation process and discuss the available charging options suitable for your specific circumstances. This way, you can make an informed decision, knowing exactly what you are getting. Additionally, our team of licensed technicians ensures that the installation is carried out safely and upholds the required standards.

By relying on our expertise, you can trust that we will carefully evaluate your electrical system, recommend the most appropriate charging option for your vehicle, and provide you with a clear understanding of the installation process. Your satisfaction, safety, and peace of mind are our top priorities.

Should you have any questions or require further clarification, please feel free to reach out to us. We are here to address your concerns and assist you every step of the way.





# Do I have to pull an electrical permit?

To ensure the safe installation of an electric vehicle charger, it is necessary to obtain a permit from the **Electrical Safety Authority (ESA)**. The **ESA** is a provincially appointed government body responsible for overseeing electrical **installations** in the province of **Ontario**. It is mandatory for all electrical contractors to obtain permits, which can be obtained if they hold an **ECRA/ESA** contractor license.

If you would like to verify the registration of electrical **contractors**, you can visit the Authority's website and search for their registration status. Our **contractor license number** is **7001317**, and we encourage you to verify our credentials for your peace of mind.

Once the **permit** is acquired, an **Electrical Safety Authority inspector** will typically visit your home after the **installation** is complete. This **inspection** ensures that the installation adheres to the **current electrical codes** in the province. Following a successful inspection, a Certificate of Acceptance will be issued, **confirming** that the installation meets the required standards.

At **The Electrical Works Ltd.**, we are proud to be part of a special program that demonstrates our **expertise** and **reliability** in electric vehicle **installations**. As a result, the Authority has shown **confidence** in our work, allowing us to proceed without a physical inspection in certain cases. It is **important** to note that our defect ratio remains below **4%**, further validating our **eligibility** for this program.

Rest assured, the **certificate** you receive from us holds the same weight and **acceptance** as those **obtained** by individuals who have an inspector visit their premises. This recognition is **acknowledged** by **insurance** providers and charging manufacturers alike, ensuring the **credibility** and **reliability** of our installations.

We **prioritize** the safety and **satisfaction** of our clients, and we are **committed** to delivering **exceptional** service while adhering to the **highest** industry **standards**.



# What is the process of getting a charger installed at my home?



If you are reading this, you are one step closer to having your charger installed. We offer multiple channels through which you can submit a request to have one of our technicians attend your home and provide a **free, no-obligation 20-minute on-site assessment**. You can simply click on our **"Book Online"** button on our website, send us an email, or give us a call. Additionally, some of our partners have listed us as preferred installers on their websites, allowing you to reach out to us through those platforms as well.

Once we **receive** your **request**, we enter the information into our customer service portal called Jobber. From this point forward, all our correspondence, including your quote, **appointment confirmation**, reminders, and invoices, will flow seamlessly through **Jobber**. When you become our client, you will have **access** to your **own customer portal** where you can view and approve your quote, as well as conveniently pay your invoice. Moreover, **you can request changes or submit new requests** at any time through this portal.

When your information is uploaded, our estimator will reach out to you to schedule a mutually convenient time for the assessment to take place. The assessment typically takes around **20 minutes**. During this time, we will discuss and plan the installation route, determine the optimal location for the charger, suggest better options if available, inspect your panel, and measure the length of cable required for the installation.

With this information in hand, we can provide you with a **detailed** and **accurate quote**, so you have a clear understanding of the budget required for your installation. Our quotes include all labor, materials, and permits necessary to complete the installation, ensuring that there are **no surprises** or **hidden fees**.

If you are **satisfied** with our price, you can easily approve the quote from your customer portal. This triggers a notification to our office staff, who will promptly start gathering the materials and arranging the **schedule** to get your home charging station **installed** as soon as possible. When a technician becomes available, our office will reach out to you with available installation dates. We will **coordinate** with you to find a **date** that works best with your schedule, and once confirmed, you will receive an **email confirmation** from Jobber with the agreed-upon appointment details. If the installation date is more than a week away, you will **receive a notification** one week prior, as well as a text message (**if a cellphone number was provided**) 24 hours before our scheduled visit.





# What is the process of getting a charger installed at my home? (continued...)



Most installations can be completed in **one day**, sometimes within just a few hours. In rare cases where an installation requires more than one day, such as a **panel upgrade** or involvement of a third-party contractor, we will inform you during the assessment and confirm again during **scheduling**. These instances typically occur due to construction or other external factors that necessitate the project to be **completed** in stages.

On the day of installation, our technician will arrive at your home at the **scheduled time**. They will **proceed** to install the cable as discussed during the on-site assessment and, depending on the charger, commission it according to the manufacturer's specifications. Once the job is completed, our technician will **clean up** after themselves and notify you that the installation has been **finished**, assuring you that it is safe to use your charger.

The **final step** in the process involves booking the electrical **inspection**. In the province of Ontario, all electrical **installations** are required to have an electrical permit pulled with the Electrical Safety Authority (**ESA**), a government-appointed body responsible for inspecting electrical installations. It is mandatory to allow the **ESA** to inspect the installation. Failure to comply can result in further charges and other consequences as determined by the **ESA**. Our office administrators will contact you to schedule an appointment for the inspector to visit your home and inspect the installation. Most inspections take approximately **10 minutes**. Any defects identified during the inspection will be reported to us and communicated to you. If any defects need to be corrected, we will cover the costs—there will be no additional charges for you.

Following the inspection, the Electrical Safety Authority will generate a **Certificate of Acceptance**, indicating that the installation has been inspected, passed, and complies with the **Ontario Electrical Safety Code**. The certificate will be emailed to us, and upon receipt of payment, we will release it to you. It is **important to keep this document for your records**, as it may be required for insurance and warranty purposes pertaining to both your vehicle and the charger.

We are dedicated to providing you with a seamless and professional installation process. If you have any questions or need further assistance at any point, **please do not hesitate to contact us**. We are here to ensure your satisfaction and look forward to assisting you with your home charging needs.



# Should I purchase my charger?



At our company, we take pride in delivering precise solutions that **remove** any **uncertainty** from your **experience**. Our commitment is to ensure your electric vehicle charging needs are met with utmost **precision**.

Whether you're on a **tight schedule** or simply looking for **clarity**, our dedicated estimator is here to assist you. By **engaging** with our estimator, you can receive comprehensive information about the EV chargers we have available, **perfectly tailored** to the **solution** you need for your vehicle.

Your **convenience** and **satisfaction** are our top priorities. **Feel free to reach out** to our estimator at your earliest convenience and let us guide you towards the ideal charging **solution** for your needs.





# What happens if my charger fails?

We **encourage** you to reach out to us by giving **us a call!** We take pride in offering comprehensive support to our valued customers. Not only do we provide a **one-year warranty** on the **parts** and **labor** we supply, but we are also more than happy to **assist** you with basic **troubleshooting** steps to help you get back online quickly.

In our **experience**, approximately **9 out of 10** instances of failure can be attributed to the **charger** itself. In such cases, a simple swap of the charger often **resolves** the issue. However, we understand that occasional breaker failures can occur as well. If you encounter such a situation, **please don't hesitate to contact us**, and we will gladly replace the breaker for you.

We are **committed** to delivering value-added service, along with the highest level of workmanship and excellent client relations. Your **satisfaction** is our top priority, and we strive to provide you with prompt and effective solutions to ensure your charging experience is **smooth** and **hassle-free**.

Please feel free to contact us at your **convenience**. We are here to address any concerns you may have and to assist you in any way we can.



# If I move, can I take my charger with me?



**Certainly!** You have the option to remove the charger from your current location and take it with you. While it is also possible to remove the cable, we would like to caution you against this, as it may not be long enough to meet the **requirements** of your new home. It's **important** to ensure that the cable length is **suitable** for your charging needs in the new location.

Moreover, we would like to highlight that having an **electric vehicle charger installed in your home** can be a **valuable** and **marketable** feature, especially if you are planning to sell your house. Listing your property as **electric vehicle charging ready** can **attract** potential **buyers** who are seeking homes with this convenient and environmentally friendly amenity. It can enhance the overall **appeal** and value of your property in the real estate market.



We are **committed** to delivering value-added service, along with the highest level of workmanship and excellent client relations. Your **satisfaction** is our top priority, and we strive to provide you with prompt and effective solutions to ensure your charging experience is **smooth** and **hassle-free**.

If you have any further **questions** or **require assistance** with the removal or installation process, **please do not hesitate to contact us**. We are here to help you make informed decisions and ensure a smooth transition with your electric vehicle charger.



# I have no space in my panel, what can I do?

Depending on the **manufacturer** of your **electrical panel**, we may be able to create additional space by **utilizing** special breakers known as **tandem breakers**. These breakers occupy a single **120-volt** slot on your panel and have the capacity to power two separate **120-volt** dedicated circuits. In certain cases, tandem breakers are also available to accommodate specific **240-volt** loads.

However, if your panel is **outdated** and does not support **tandem breakers**, we can explore the option of adding a **sub-panel**. This solution allows for the creation of additional space to **accommodate** the new charging load. During our **on-site assessment**, we will **thoroughly** evaluate your electrical system and discuss these possibilities in detail. Rest assured, we will present you with all available options, ensuring you have a **comprehensive** understanding of the **best** approach for your specific **situation**.

We **prioritize** transparency and open **communication** with our clients. Our **goal** is to provide you with the necessary **information** and **recommendations** to make informed decisions about your electrical **infrastructure**. If you have any concerns or questions, **please don't hesitate to share them with us**. We are **committed** to working together to find the most suitable solution for your charging needs.



# How long does it take to charge my vehicle?



When **considering** the **recommended** charging practices for electric vehicles, it is generally advised by most auto **manufacturers** to avoid charging your vehicle beyond **90%** capacity and not to deplete the batteries below **10%** capacity. By following these guidelines, you **effectively** have **80%** of the usable range available for your vehicle.

Let's take an example using a vehicle with a range of **576 km** and calculate the usable range:

$$576 \text{ km} \times 80\% = 460.8 \text{ km}$$

If you have an **11.5 kW** charger installed at home, which translates to approximately 71 km of range per hour of charge, the calculations for charging time are as follows:

$$460.8 \text{ km} / 71 \text{ km} = 6.49 \text{ hours}$$

Therefore, if you have a remaining battery life of **10%** and you aim to charge your vehicle to **90%** capacity, it will take approximately **6.49 hours** to reach that level.

It is worth noting that these **calculations** are estimates based on the given figures and may vary depending on **factors** such as the **efficiency** of your charger, battery condition, and other **variables**. If you have any specific concerns or questions regarding **charging** times and battery management, **we are here to provide further assistance and guidance**.

**Please feel free to reach out to us** for any additional information you may require. Our **goal** is to help you optimize your electric vehicle charging experience while **maintaining** the best practices **recommended** by auto **manufacturers**.





# What is the typical cost of an installation?

The cost of an **installation** can be influenced by a variety of factors, and we understand that it's **essential** to consider all aspects when providing you with an **accurate** estimate. Factors such as the age of your home, the **manufacturer** of your electrical panel, the design and construction of your **home**, as well as the length of cable required, can all contribute to the final price.

At our **company**, we strive to offer transparent and **fair pricing** to our valued customers. While each installation is unique, we aim to provide you with an average cost range to give you an idea of what to expect. The range can vary from **\$750 to \$2500+** with the average cost of installation being between **\$950 to \$1200**, considering not only the factors mentioned previously but also other relevant considerations.

We believe in delivering **high-quality** service while ensuring that the cost aligns with the value and workmanship you receive. Our team of **professionals** will assess your specific requirements, carefully **evaluate** the factors involved, and provide you with a **detailed** estimate before **commencing** any work. This way, you will have a clear understanding of the anticipated cost, allowing you to make an **informed** decision that suits your budget and needs.

Should you have any questions or require further clarification regarding pricing or any other aspect of the installation process, **ECRA/ESA License # 7001317**. We are committed to providing exceptional customer service and are here to assist you every step of the way.



# Our Partners



**CFAA  
MEMBER**

CANADIAN FIRE ALARM ASSOCIATION



**T E S L A**  
WALLCONNECTOR



ONTARIO ELECTRICAL LEAGUE



# TEW

ECRA/ESA License # **7001317**

For more information, please visit our website:

[ectrical-works.ca](http://ectrical-works.ca)

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**416-252-0561**

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