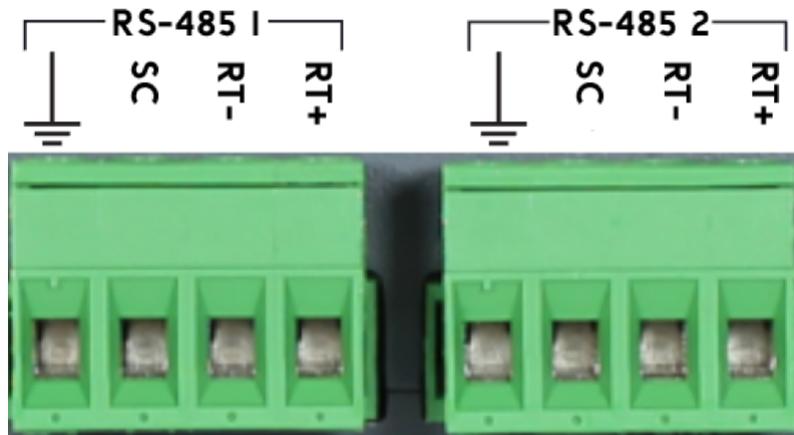# Using the SmartServer Connectors

You can attach the SmartServer IoT to one RS-485 network to communicate with Modbus RTU devices. You can also create your own RS-485 driver for the SmartServer IoT to communicate with RS-485 devices using protocols other than Modbus.

> ⚠ **Note:** Modbus can only be configured on <u>one</u> RS-485 port (default is port 1).

The SmartServer IoT includes two isolated RS-485 multi-drop bus ports. The two ports are available on two removable green 4-pin connectors as shown in the following figure, with the two interfaces labelled as **RS-485 1** and **RS-485 2**.

The screw terminals on the RS-485 plugs accept 0.22mm – 3.3mm (22 – 12AWG) gauge solid wire. The optimum tightening torque for the screw terminals is 0.75 Newton-meters (6 lbs. in.) maximum. The ideal flathead screwdriver tip width for use with the screw terminal connectors is 3mm (0.12"). Strip wires to a length of 7mm (0.28"). You can use an insulated cord pin end to prevent fraying and inadvertent contact with adjacent terminals.

The following table describes the two RS-485 connectors.

Label	Name	Description
RT+	+ Receive /Transmit	The RS-485 positive receive/transmit connectors are labelled **RT+**. These connections are polarity-sensitive, and must not be reversed. Reversing polarity will cause improper bus operation.
RT-	- Receive /Transmit	The RS-485 negative receive/transmit connectors are labelled **RT-**. These connections are polarity-sensitive, and must not be reversed. Reversing polarity will cause improper bus operation.
SC	Signal Common	The signal common (**SC**) pin provides a common signal reference ground. You can connect this pin to the shield of a shielded cable to improve noise immunity. You can connect the signal common to earth ground on no more than one device on an RS-485 channel. To connect **SC** to earth ground at the SmartServer IoT, insert a jumper connecting **SC** to the earth ground pin to the left of the **SC** pin, and also connect the earth ground connector on the SmartServer IoT power input to earth ground.
⏚	Earth Ground	You can connect the signal common (**SC**) pin to earth ground on no more than one device on an RS-485 channel.