

## Komunikacja Modbus TCP sterownika Siemens LOGO! z panelem Astraada HMI

## **KONFIGURACJA STEROWNIKA SIEMENS LOGO!**

Tworzymy nowy projekt dla sterownika Siemens LOGO! w programie LOGO! Soft Comfort.





Dla sterownika dodajemy konfigurację serwera Modbus TCP klikając PPM, a następnie wybierając w zakładce *Add server connection* opcję *Modbus Connection*.

| LOGO!<br>192.168.0.3 | ∦<br>≣<br>■<br>× | Cut<br>Copy<br>Paste<br>Delete<br>Rename<br>Add client connection | Ctrl+X<br>Ctrl+C<br>Ctrl+V<br>Delete<br>F2 | > |                   |
|----------------------|------------------|---|--|---|-------------------|
|                      |                  | Add server connection   |  | > | S7 Connection     |
|                      |                  | Import<br>Export<br>Upload<br>Download<br>VO Status               |  | - | ModBus Connection |

Uzupełniamy adres IP panelu HMI, z którym chcemy wymieniać informacje.

| 198 | Modbus Connect              | tion     |                            |           |               |                  | ×                  |
|-----|-----------------------------|----------|----------------------------|-----------|---------------|------------------|--------------------|
|     | Device name:                | LOGO!    | 0.2                        | - 5       | Accept all    | connection reque | est in server side |
| -   | PORT:                       | 502      |                            | -0        | PORT:         | Assigned         |                    |
|     |                             | O Client | <ul> <li>Server</li> </ul> |           |               | Client           | O Server           |
|     | ata transfer<br>Start Addre | ess      | Length                     | Direction | Start Address | Length           | Unit ID            |
| 1   | v 0.0                       |          |                            |           | Coil          |                  | 255                |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
| 1   |                             |          |                            |           |               |                  |                    |
| 1   |                             |          |                            |           |               |                  |                    |
| 1   |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
| 1   |                             |          |                            |           |               |                  |                    |
| }   |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               |                  |                    |
|     |                             |          |                            |           |               | ОК               | Cancel Help        |



W ustawieniach sterownika podana jest zmapowana przestrzeń adresowa dla protokołu Modbus.



## Wybieramy zakładkę Modbus address space.

| General<br>Hardware type<br>I/O settings       Modbus address space       Direction       Unit         I/O names       1       1 - 24       Discrete Input (DI) 1 - 24       R       bit         Program password       Q       1 - 20       Coil 8193 - 8212       R/W       bit         Power on       M       1 - 64       Coil 8257 - 8320       R/W       bit         Additional info       V       0.0 - 850.7       Coil 1 - 6808       R/W       bit         Ald       1 - 8       Input Register (IR) 1 - 8       R       word         VW       0 - 850.0       Holding Register (IR) 1 - 425       R/W       word         AQ       1 - 8       Input Register (IR) 1 - 425       R/W       word         AQ       1 - 8       Holding Register (IR) 1 - 425       R/W       word         AQ       1 - 8       Holding Register (IR) 513 - 520       R/W       word         AM       1 - 64       Holding Register (IR) 529 - 592       R/W       word | ound ooungo  |   |   |  |  |   |   |
|--|--------------|---|---|--|--|---|---|
| Hardware type       Modulus address space         I/O settings       I       1-24       Discrete Input (DI) 1-24       R       bit         Program passworr       Q       1-20       Coll 8193-8212       R/W       bit         Power on       M       1-64       Coll 8257-8320       R/W       bit         Message text       V       0.0-850.7       Coll 1-6808       R/W       bit         Additional info       Al       1-8       Input Register (IR) 1-8       R       word         Statistics       VW       0-850       Holding Register (HR) 1-425       R/W       word         AQ       1-8       Holding Register (HR) 513-520       R/W       word         Modbus address s       A       1-64       Holding Register (HR) 529-592       R/W       word  |              | 5<br>5 - 13 - 20195   |   |  |  |   |   |
| I/O settings       Address Type       Range       Mapped Modbus Address       Direction       Unit         I/O names       I       1 - 24       Discrete Input (DI) 1 - 24       R       bit         Program password       Q       1 - 20       Coil 8193 - 8212       R/W       bit         Power on       M       1 - 64       Coil 8257 - 8320       R/W       bit         Message text       V       0.0 - 850.7       Coil 1 - 6808       R/W       bit         Additional info       AI       1 - 8       Input Register (IR) 1 - 8       R       word         Statistics       VW       0 - 850       Holding Register (HR) 1 - 425       R/W       word         AdQ       1 - 8       Holding Register (HR) 513 - 520       R/W       word         Modbus address s       AM       1 - 64       Holding Register (HR) 529 - 592       word  | Modbus addr  | ess space   |   |  |  | <u></u>   |   |
| I/O names       I       1 - 24       Discrete Input (DI) 1 - 24       R       bit         Program password       Q       1 - 20       Coil 8193 - 8212       R/W       bit         Power on       M       1 - 64       Coil 8257 - 8320       R/W       bit         Message text       V       0.0 - 850.7       Coil 1 - 6808       R/W       bit         Additional info       AI       1 - 8       Input Register (IR) 1 - 8       R       word         Statistics       VW       0 - 850       Holding Register (HR) 1 - 425       R/W       word         AQ       1 - 8       Holding Register (HR) 1 - 425       R/W       word         Modbus address s       AM       1 - 64       Holding Register (HR) 513 - 520       R/W       word  | Address Type | Range   | Mapped Modbus Address   | Direction  | Unit   |   |   |
| Program password       Q       1 - 20       Coil 8193 - 8212       R/W       bit         Power on       M       1 - 64       Coil 8257 - 8320       R/W       bit         Message text       V       0.0 - 850.7       Coil 1 - 6808       R/W       bit         Additional info       AI       1 - 8       Input Register (IR) 1 - 8       R       word         Statistics       VW       0 - 850       Holding Register (HR) 1 - 425       R/W       word         Comment       AQ       1 - 8       Holding Register (HR) 513 - 520       R/W       word         Modbus address s       AM       1 - 64       Holding Register (HR) 529 - 592       R/W       word  | F            | 1 - 24  | Discrete Input (DI) 1 - 24  | R  | bit  |   |   |
| Power on       M       1 - 64       Coil 8257 - 8320       R/W       bit         Message text       V       0.0 - 850.7       Coil 1 - 6808       R/W       bit         Additional info       AI       1 - 8       Input Register (IR) 1 - 8       R       word         Statistics       VW       0 - 850       Holding Register (HR) 1 - 425       R/W       word         Comment       AQ       1 - 8       Holding Register (HR) 513 - 520 R/W       word         Modbus address s       AM       1 - 64       Holding Register (HR) 529 - 592 R/W       word   | rc Q         | 1 - 20  | Coil 8193 - 8212  | R/W  | bit  |   |   |
| Message text       V       0.0 - 850.7       Coil 1 - 6808       R/W       bit         Additional info       AI       1 - 8       Input Register (IR) 1 - 8       R       word         Statistics       VW       0 - 850       Holding Register (HR) 1 - 425       R/W       word         Comment       AQ       1 - 8       Holding Register (HR) 513 - 520       R/W       word         Modbus address s       AM       1 - 64       Holding Register (HR) 529 - 592       R/W       word  | M            | 1 - 64  | Coil 8257 - 8320  | R/W  | bit  |   |   |
| Additional info       Al       1 - 8       Input Register (IR) 1 - 8       R       word         Statistics       VW       0 - 850       Holding Register (HR) 1 - 425       R/W       word         AQ       1 - 8       Holding Register (HR) 513 - 520       R/W       word         Modbus address s       AM       1 - 64       Holding Register (HR) 529 - 592       R/W       word   | V            | 0.0 - 850.7   | Coil 1 - 6808   | R/W  | bit  |   |   |
| Statistics       VW       0 - 850       Holding Register (HR) 1 - 425       R/W       word         AQ       1 - 8       Holding Register (HR) 513 - 520       R/W       word         Modbus address s       AM       1 - 64       Holding Register (HR) 529 - 592       R/W       word   | AI           | 1 - 8   | Input Register (IR) 1 - 8   | R  | word   |   |   |
| AQ       1 - 8       Holding Register (HR) 513 - 520 R/W       word         Modbus address s       AM       1 - 64       Holding Register (HR) 529 - 592 R/W       word  | VW           | 0 - 850   | Holding Register (HR) 1 - 425   | R/W  | word   |   |   |
| Modbus address s AM 1-64 Holding Register (HR) 529-592 R/W word  | AQ           | 1-8   | Holding Register (HR) 513 - 520   | R/W  | word   |   |   |
|  | s AM         | 1 - 64  | Holding Register (HR) 529 - 592   | R/W  | word   |   |   |
|  |              |   |   |  |  |   |   |
|  |              |   |   |  |  |   |   |
|  |              |   |   |  |  |   |   |
|  |              | Modbus addr<br>Address Type<br>I<br>Q<br>M<br>V<br>AI<br>VW<br>AQ<br>AM | Modbus address space           Address Type         Range           I         1 - 24           Q         1 - 20           M         1 - 64           V         0.0 - 850.7           AI         1 - 8           VW         0 - 850           AQ         1 - 8           AM         1 - 64 | Modbus address space           Address Type         Range         Mapped Modbus Address           I         1 - 24         Discrete Input (DI) 1 - 24           Q         1 - 20         Coil 8193 - 8212           M         1 - 64         Coil 8257 - 8320           V         0.0 - 850.7         Coil 1 - 6808           AI         1 - 8         Input Register (IR) 1 - 8           VW         0 - 850         Holding Register (HR) 1 - 425           AQ         1 - 8         Holding Register (HR) 513 - 520           AM         1 - 64         Holding Register (HR) 529 - 592 | Modbus address space           Address Type         Range         Mapped Modbus Address         Direction           I         1 - 24         Discrete Input (DI) 1 - 24         R           Q         1 - 20         Coil 8193 - 8212         R/W           M         1 - 64         Coil 8257 - 8320         R/W           V         0.0 - 850.7         Coil 1 - 6808         R/W           AI         1 - 8         Input Register (IR) 1 - 8         R           VW         0 - 850         Holding Register (HR) 1 - 425         R/W           AQ         1 - 8         Holding Register (HR) 513 - 520 R/W           AM         1 - 64         Holding Register (HR) 529 - 592 R/W | Modbus address space         Address Type         Range         Mapped Modbus Address         Direction         Unit           I         1-24         Discrete Input (DI) 1-24         R         bit           Q         1-20         Coil 8193 - 8212         R/W         bit           M         1-64         Coil 8257 - 8320         R/W         bit           V         0.0 - 850.7         Coil 1 - 6808         R/W         bit           AI         1 - 8         Input Register (IR) 1 - 8         R         word           VW         0 - 850         Holding Register (HR) 1 - 425         R/W         word           AQ         1 - 8         Holding Register (HR) 513 - 520         R/W         word           AQ         1 - 64         Holding Register (HR) 529 - 592         R/W         word | Modbus address space           Address Type         Range         Mapped Modbus Address         Direction         Unit           I         1 - 24         Discrete Input (DI) 1 - 24         R         bit           Q         1 - 20         Coil 8193 - 8212         R/W         bit           M         1 - 64         Coil 8257 - 8320         R/W         bit           V         0.0 - 850.7         Coil 1 - 6808         R/W         bit           Al         1 - 8         Input Register (IR) 1 - 8         word           VW         0 - 850         Holding Register (HR) 1 - 425         R/W         word           AQ         1 - 8         Holding Register (HR) 513 - 520 R/W         word           AQ         1 - 64         Holding Register (HR) 529 - 592 R/W         word |



## **KONFIGURACJA PANELU ASTRAADA HMI**

Tworzymy nowy projekt dla posiadanego panelu Astraada HMI w programie Astraada HMI CFG. Dodajemy połączenie(link), w którym konfigurujemy połączenie Modbus TCP ze sterownikiem LOGO!. Wybieramy:

Link Type – Direct Link (Ethernet)

Device/Server – Modicon Corp./ Modbus Device/Slave (TCP/IP)

| Link Properties   |                  | ×                              |  |  |  |  |  |  |
|---|------------------|--------------------------------|--|--|--|--|--|--|
| General Paramet   | er               |                                |  |  |  |  |  |  |
| Link Number:  | 1                |                                |  |  |  |  |  |  |
| Link Name:  | Logo!            |                                |  |  |  |  |  |  |
| Link Type: Direct Link (Ethernet)   |                  |                                |  |  |  |  |  |  |
| Device/Server:  | Modicon Corp. $$ | ModBus Device/Slave (TCP/IP) ~ |  |  |  |  |  |  |
| Link Port:  | Ethernet1 ~      | Sub-links                      |  |  |  |  |  |  |
|   |                  |                                |  |  |  |  |  |  |
|   |                  |                                |  |  |  |  |  |  |
|   |                  |                                |  |  |  |  |  |  |
|   |                  |                                |  |  |  |  |  |  |
| Record communication status in operation log                                    |                  |                                |  |  |  |  |  |  |
|   |                  |                                |  |  |  |  |  |  |
| The duration of showing a communication error message: 5 $\checkmark$ second(s) |                  |                                |  |  |  |  |  |  |
|   |                  |                                |  |  |  |  |  |  |
|   |                  |                                |  |  |  |  |  |  |
|   |                  | OK Anuluj Pomoc                |  |  |  |  |  |  |



W zakładce Parameter w polu IP Address wpisujemy adres IP sterownika Siemens LOGO!.

| Link Properties                | × |
|--------------------------------|---|
| General Parameter              |   |
| IP Address: 192.168.0.3        |   |
| Use Default Port               |   |
| Port: 502                      |   |
| Node Address: 1                |   |
| Timeout Time: 2 🖨 (x 0.1 Sec.) |   |
| Command Delay: 0 🖨 (x 1 ms)    |   |
| Retry Count: 2                 |   |
|                                |   |
|                                |   |
|                                |   |
| OK Anuluj Pomo                 | c |

Następnie przechodzimy do zakładki Tags w Project Manager. Adresy zmiennych dla każdego typu konfigurujemy odpowiednio na podstawie mapowania podanego w *Modbus address space* sterownika Siemens LOGO!.

Tag Table (AP\_1)

| Internal Memory | Logo! | Data Type |           |           |         |           |  |  |  |
|-----------------|-------|-----------|-----------|-----------|---------|-----------|--|--|--|
| Logo!           |       | Name      | Alias For | Data Type | Address | Scan Rate |  |  |  |
|                 | 1     | Q1        |           | Bit       | 8193    | Normal    |  |  |  |
|                 | 2     | Q2        |           | Bit       | 8194    | Normal    |  |  |  |
|                 | 3     | Q3        |           | Bit       | 8195    | Normal    |  |  |  |
|                 | 4     | M1        |           | Bit       | 8257    | Normal    |  |  |  |
|                 | 5     | M2        |           | Bit       | 8258    | Normal    |  |  |  |