PLC a SIMATIC 3b - Riešenia a programy:)

FC14

Block: FC14 as Ladder diagram

Network: 1

```
M15.0
                M15.1
                               I8.5
                                            I8.6
                                                          Q8.1
"zariadeni
             "automatik
                           "induksenz
                                         "induksenz
                                                      "rozsvieth
                 a"
                                           or2"
                              or1"
                                                          1"
e_zapnute"
                                                          (s)-
                                                          Q8.2
                                                      "rozsvieth
                                                           2"
                                                          (s)-
                               I8.5
                                                                        Q8.1
                           "induksenz
                                                                    "rozsvieth
                                            Q8.5
                                                         M10.5
                              or1"
                                           "pas>>"
                                                          "1hz"
                                                                        (s)-
                                                                        Q8.1
                                                          M10.5
                                                                    "rozsvieth
                                                                        1"
                                                          "1hz"
                                                           1/1
                                                                        (R)-
                               I8.6
                                                                        Q8.2
                           "induksenz
                                            Q8.5
                                                          M10.5
                                                                    "rozsvieth
                                           "pas>>"
                                                          "1hz"
                              or2"
                                                                        ⟨s⟩
                                                                        Q8.2
                                                          M10.5
                                                                    "rozsvieth
                                                          "lhz"
                                                                        2"
                                                           1/1
                                                                        <R>→
                                             I8.5
                                                          M16.1
                                                        "bit_1
                                         "induksenz
                               I8.1
                                                        senzora"
                               "S1"
                                            or1"
                                                          -(s)-
                                             18.6
                                                          M16.2
                                         "induksenz
                                                        "bit_2
                               18.2
                                                        senzora"
                               "S2"
                                            or2"
                                                          -(s)-
                                1 1
```

Network: 2

```
M16.1
                                              Q8.1
"bit 1
                M10.3
                                          "rozsvieth
senzora"
                 "2hz"
                                              <s≻
   1 1
                                              Q8.1
                M10.3
                                          "rozsvieth
                 "2hz"
                                              1"
                                              (R)-
                                              08.2
                                          "rozsvieth
                                              2"
                                              <r > ⊢ ⊢ ⊢</r>
```

```
M16.2
                                            Q8.2
               M10.3
                                        "rozsvieth
2"
"bit 2
senzora"
                "2hz"
                                            <s>—
                                            Q8.2
               M10.3
                                        "rozsvieth
                "2hz"
                                            2"
                                            <r>
→ R>—
                                            Q8.1
                                        "rozsvieth
1"
                                            ⟨R}—
```

```
M13.1

"prep_
I8.0 podla M16.1

"optozavor hranynabez "bit_1_
a" nel" senzora"

(N) (R)
```

Network: 5

FC14

Block: FC14 as STL

A	"zariadenie_zapnute"	
A	"automatika"	M15.1
=	L 0.0	
A	L 0.0	
AN	"induksenzor1"	I8.5
AN	"induksenzor2"	I8.6
S	"rozsvieth1"	Q8.1
S	"rozsvieth2"	Q8.2
A	L 0.0	
A	"induksenzor1"	I8.5
AN	"pas>>"	Q8.5
=	L 0.1	~
A	L 0.1	
A	"lhz"	M10.5
S	"rozsvieth1"	08.1
A	L 0.1	2011
AN	"lhz"	M10.5
R	"rozsvieth1"	08.1
A	L 0.0	20.1
A	"induksenzor2"	I8.6
AN	"pas>>"	Q8.5
=	L 0.1	20.5
A	L 0.1	
A	"lhz"	M10.5
S	"rozsvieth2"	Q8.2
A	L 0.1	20.2
AN	"lhz"	M10.5
R	"rozsvieth2"	Q8.2
A	L 0.0	
A	"S1"	I8.1
A	"induksenzor1"	I8.5
S	"bit_1_senzora"	M16.1
A	L 0.0	
A	"S2"	I8.2
A	"induksenzor2"	I8.6
S	"bit 2 senzora"	M16.2

A	"bit 1 senzora"	M16.1
=	L - 0.0	
A	L 0.0	
A	"2hz"	M10.3
S	"rozsvieth1"	Q8.1
A	L 0.0	
AN	"2hz"	M10.3
R	"rozsvieth1"	Q8.1
A	L 0.0	
BLD	102	
R	"rozsvieth2"	Q8.2

Network: 3

A	"bit 2 senzora"	M16.2
=	L0.0	
A	L 0.0	
A	"2hz"	M10.3
S	"rozsvieth2"	Q8.2
A	L 0.0	
AN	"2hz"	M10.3
R	"rozsvieth2"	Q8.2
A	L 0.0	
BLD	102	
R	"rozsvieth1"	Q8.1

Network: 4

AN	"optozavora"	I8.0
FN	"prep podla hranynabezne1"	M13.1
R	"bit_1_senzora"	M16.1

AN	"optozavora"	I8.0
FN	"prep podla hranynabezne2"	M13.2
R	"bit 2 senzora"	M16.2

Block: FC15 as Ladder diagram

Network: 1

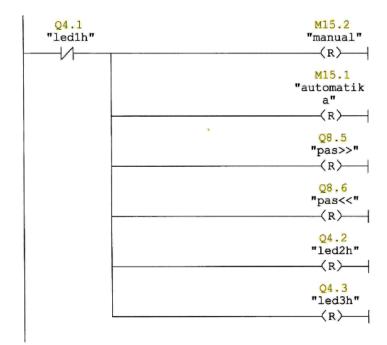
Network: 2

Network: 3

```
M15.0
  IO.4
           "zariadeni
                             10.5
                                         M15.2
           e_zapnute"
                                        "manual"
"packa4h"
                          "packa5h"
                                          <s>→
                                          04.2
                                         "led2h"
                                         <s>→
                                         M15.1
                                      "automatik
                                          a"
                                          <r></r></r>
                                         Q4.3
"led3h"
                                         ~(R)—
```

Network: 4

```
M15.0
                                      M15.1
          "zariadeni
                                   "automatik
 IO.4
                          10.5
          e_zapnute"
"packa4h"
                        "packa5h"
                                       a"
                                      <s>—
                                      Q4.3
                                     "led3h"
                                      <s>—
                                     M15.2
                                     "manual"
                                      (R)——
                                      Q4.2
                                     "led2h"
                                      (R)—
```



Block: FC15 as STL

Network: 1

A	"packa0h"	I0.0
S	"zariadenie zapnute"	M15.0
S	"led1h"	Q4.1

Network: 2

A	"packa1h"	IO.1
R	"zariadenie zapnute"	M15.0
R	"led1h"	Q4.1

Network: 3

AN	"packa4h"	IO.4
A	"zariadenie zapnute"	M15.0
A	"packa5h"	10.5
S	"manual"	M15.2
S	"led2h"	Q4.2
R	"automatika"	M15.1
R	"led3h"	Q4.3

Network: 4

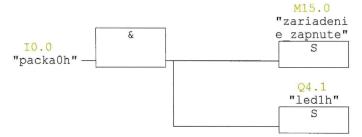
A	"packa4h"	IO.4
A	"zariadenie zapnute"	M15.0
A	"packa5h"	I0.5
S	"automatika"	M15.1
S	"led3h"	Q4.3
R	"manual"	M15.2
R	"led2h"	Q4.2

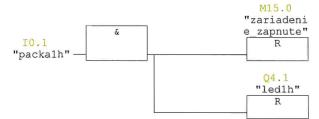
Network: 5

AN	"led1h"	Q4.1
R	"manual"	M15.2
R	"automatika"	M15.1
R	"pas>>"	Q8.5
R	"pas<<"	Q8.6
R	"led2h"	Q4.2
R	"led3h"	04.3

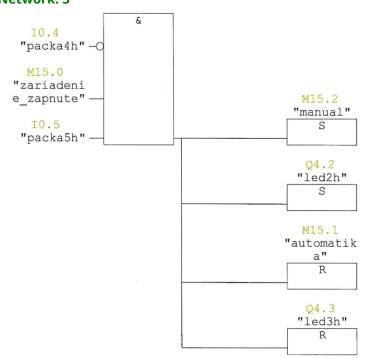
FC15

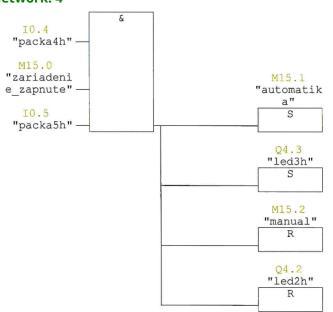
Block: FC15 as FBD

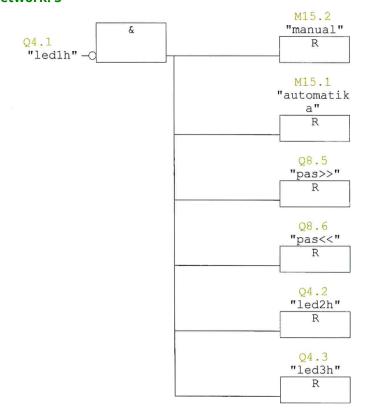




Network: 3





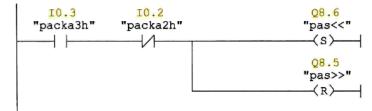


FC16

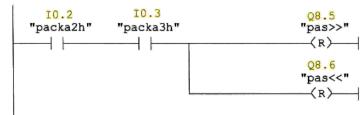
Block: FC16 as Ladder diagram

Network: 1

Network: 2



Network: 3



FC16

Block: FC16 as STL

```
A "packa2h" I0.2
AN "packa3h" I0.3
S "pas>>" Q8.5
R "pas<<" Q8.6
```

```
A "packa3h" 10.3
AN "packa2h" 10.2
S "pas<<" Q8.6
R "pas>>" Q8.5
```

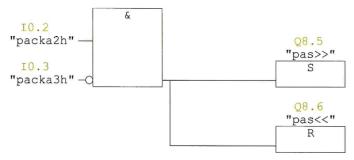
Network: 3

```
Α
      "packa2h"
                  I0.2
       "packa3h"
A
                  I0.3
      "pas>>"
R
                  Q8.5
      "pas<<"
                  Q8.6
R
                  Q8.5
S
      "pas>>"
      "pas<<"
                  Q8.6
R
```

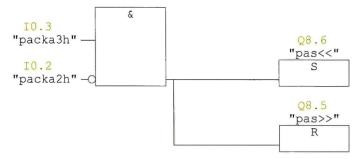
FC16

Block: FC16 as FBD

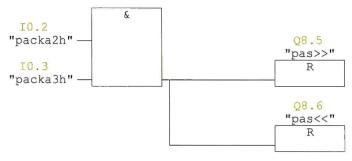
Network: 1



Network: 2



Network: 3



FC162

Block: FC162 as Ladder diagram

```
M15.0
                       "zariadeni
                                                    Q8.6
              10.2
                                       M15.2
 10.3
                                      "manual"
                                                   "pas<<"
"packa3h"
            "packa2h"
                       e_zapnute"
  4 -
                                        4 H
                                                    <s>—
                                                    Q8.5
                                                   "pas>>"
                                                    (R)----
```

Network: 3

FC162

Block: FC162 as STL

Network: 1

A	"packa2h"	10.2
AN	"packa3h"	10.3
A	"zariadenie zapnute"	M15.0
A	"manual"	M15.2
S	"pas>>"	Q8.5
R	"pas<<"	Q8.6

Network: 2

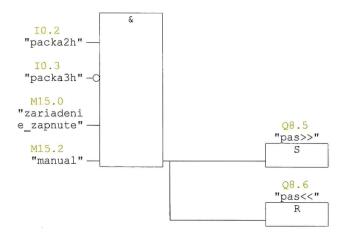
A	"packa3h"	I0.3
AN	"packa2h"	I0.2
A	"zariadenie zapnute"	M15.0
A	"manual"	M15.2
S	"pas<<"	Q8.6
R	"pas>>"	Q8.5

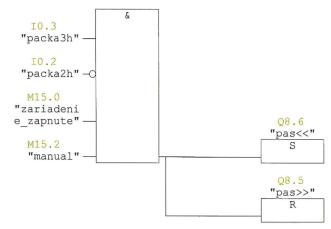
Network: 3

A	"packa2h"	I0.2
A	"packa3h"	I0.3
R	"pas>>"	Q8.5
R	"226//"	08 6

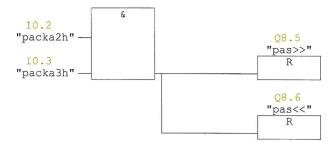
FC162

Block: FC162 as FBD





Network: 3



FC163

Block: FC163 as Ladder diagram

Network: 1

Network: 4

```
M15.1
                                         I8.6
  M15.0
                            18.5
                                      "induksenz
"zariadeni
                         "induksenz
                                                                  Q8.5
            "automatik
                                                      I8.1
                a"
                            or1"
                                        or2"
                                                                 "pas>>"
e_zapnute"
                                                      "S1"
                                         1/1-
   +
                                                      4 1
                                                                  (s)—
  M15.0
               M15.1
                            I8.5
                                         I8.6
                                      "induksenz
"zariadeni
                         "induksenz
                                                      18.2
            "automatik
                                                      "S2"
e_zapnute"
                a"
                            or1"
                                         or2"
                                         +
```

Network: 5

```
18.0
"optozavor
a"

[Pas>>"

(R)
```

FC163

Block: FC163 as STL

Network: 1

A	"packa2h"	10.2
AN	"packa3h"	I0.3
A	"zariadenie zapnute"	M15.0
A	"manual"	M15.2
S	"pas>>"	Q8.5
R	"pas<<"	08.6

Network: 2

A	"packa3h"	10.3
AN	"packa2h"	I0.2
A	"zariadenie zapnute"	M15.0
A	"manual"	M15.2
S	"pas<<"	Q8.6
R	"nas>>"	08 5

Network: 3

A	"packa2h"	I0.2
A	"packa3h"	I0.3
R	"pas>>"	Q8.5
R	"pas<<"	Q8.6

Network: 4

A	"zariadenie zapnute"	M15.0
A	"automatika"	M15.1
A	"induksenzor1"	I8.5
AN	"induksenzor2"	I8.6
A	"S1"	I8.1
0		
A	"zariadenie zapnute"	M15.0
A	"automatika"	M15.1
AN	"induksenzor1"	I8.5
A	"induksenzor2"	I8.6
A	"S2"	I8.2
S	"pas>>"	08.5

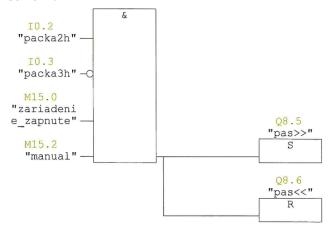
Network: 5

```
AN "optozavora" 18.0 R "pas>>" Q8.5
```

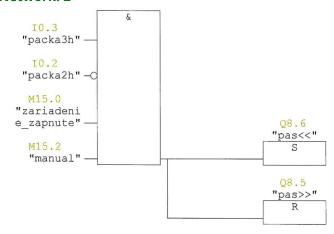
FC163

Block: FC163 as FBD

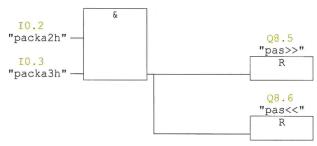
Network: 1

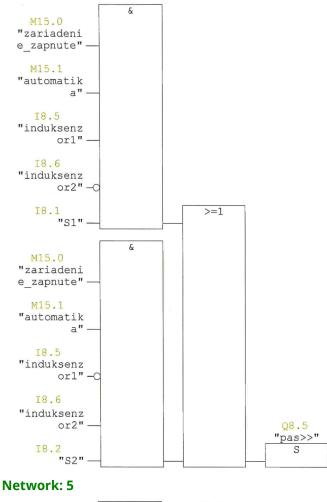


Network: 2



Network: 3





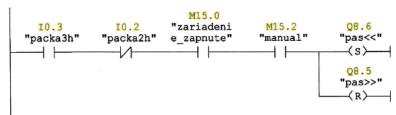


Block: FC1632 as Ladder diagram

Network: 1

```
M15.0
  10.2
              10.3
                        "zariadeni
                                       M15.2
                                                     08.5
                                       "manual"
                                                    "pas>>"
"packa2h"
            "packa3h"
                        e_zapnute"
                                                     <s>—
                                                     Q8.6
                                                    "pas<<"
                                                     (R)—
```

Network: 2



```
M15.0
                M15.1
                               I8.5
                                            I8.6
                                                          18.7
"zariadeni
             "automatik
                           "induksenz
                                         "induksenz
                                                      "induksenz
                                                                        I8.1
                                                                                     Q8.5
                                            or2"
                                                                        "S1"
                                                                                    "pas>>"
                 a"
                                                         or3"
                              or1"
e_zapnute"
                                             11
                                                           11
                                                                                     <s≻
                                                                        1 +
   M15.0
                M15.1
                               18.5
                                            I8.6
                                                          18.7
"zariadeni
             "automatik
                           "induksenz
                                         "induksenz
                                                      "induksenz
                                                                        18.2
                 a"
                              or1"
                                            or2"
                                                         or3"
                                                                        "S2"
e_zapnute"
                               W
    1 H
                                             1 1
                                                           1/1
                                                                        1 +
   M15.0
                M15.1
                               I8.5
                                             18.6
                                                          18.7
"zariadeni
             "automatik
                           "induksenz
                                         "induksenz
                                                      "induksenz
                                                                        I8.3
                 a"
                              or1"
                                            or2"
                                                         or3"
                                                                        "S3"
e_zapnute"
                                             1
                                                                        1 1
    +
```

Network: 5

FC1633

Block: FC1633 as Ladder diagram

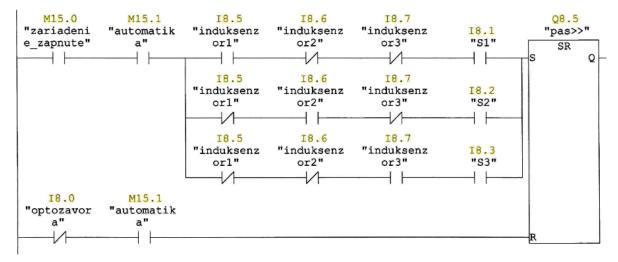
Network: 1

```
M15.0
                         "zariadeni
                                         M15.2
                                                      08.5
  I0.2
               10.3
                                        "manual"
                                                     "pas>>"
"packa2h"
             "packa3h"
                        e zapnute"
                                                      <s>—
  4 F
                                                      Q8.6
                                                     "pas<<"
                                                      (R)-
```

Network: 2

```
M15.0
  10.3
               10.2
                        "zariadeni
                                        M15.2
"packa3h"
            "packa2h"
                        e_zapnute"
                                       "manual"
                                                     "pas<<"
                                                     ≺s≻
               1/1
                                         1 +
                                                      Q8.5
                                                    "pas>>"
                                                     (R)—
```

Network: 3



Block: FC1633 as STL

Network: 1

A	"packa2h"	I0.2
AN	"packa3h"	I0.3
A	"zariadenie zapnute"	M15.0
A	"manual"	M15.2
S	"pas>>"	Q8.5
R	"pas<<"	08 6

Network: 2

A	"packa3h"	I0.3
AN	"packa2h"	I0.2
A	"zariadenie zapnute"	M15.0
A	"manual"	M15.2
S	"pas<<"	Q8.6
R	"pas>>"	08 - 5

Network: 3

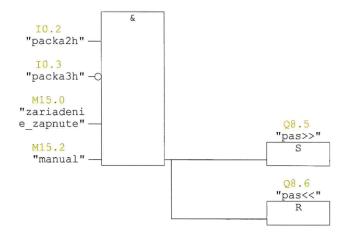
A "packa2h" IO.2 A "packa3h" IO.3 R "pas>>" Q8.5 R "pas<<" Q8.6

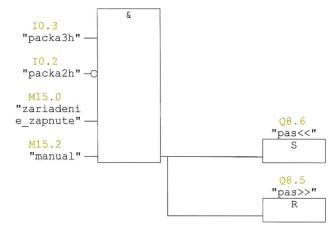
Network: 4

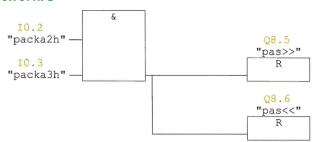
A	"zariadenie_zapnute"	M15.0
A	"automatika"	M15.1
A (
A	"induksenzor1"	I8.5
AN	"induksenzor2"	I8.6
AN	"induksenzor3"	I8.7
A	"S1"	I8.1
0		
AN	"induksenzor1"	I8.5
A	"induksenzor2"	I8.6
AN	"induksenzor3"	I8.7
A	"S2"	I8.2
0		
AN	"induksenzorl"	I8.5
AN	"induksenzor2"	I8.6
A	"induksenzor3"	I8.7
A	"S3"	I8.3
)		
S	"pas>>"	Q8.5
AN	"optozavora"	I8.0
A	"automatika"	M15.1
R	"pas>>"	Q8.5
NOP	0	

FC1633

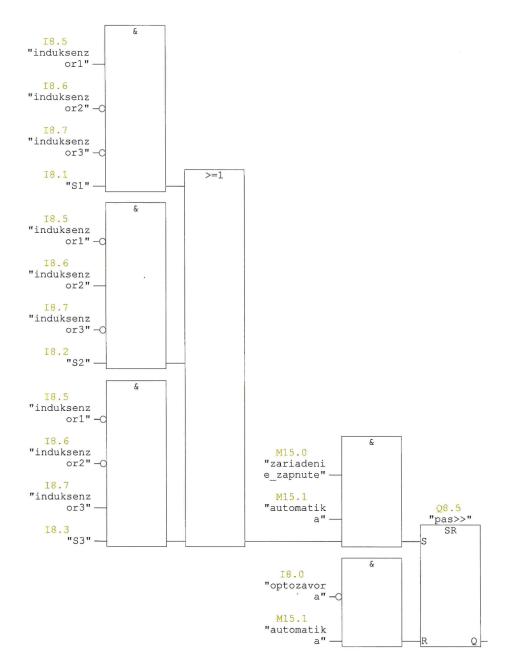
Block: FC1633 as FBD







Network: 4



Block: FC164 as Ladder diagram

Network: 1

```
M15.0
                                                     Q8.6
  10.3
              10.2
                        "zariadeni
                                       M15.2
"packa3h"
            "packa2h"
                        e_zapnute"
                                       "manual"
                                                    "pas<<"
               1
                                                     (s)—
                                                     Q8.5
                                                    "pas>>"
                                                     (R)--
```

```
Network: 3
```

```
M15.0
                 M15.1
                               I8.5
                                             I8.6
                                                                        Q8.5
"zariadeni
              "automatik
                           "induksenz
                                         "induksenz
                                                           I8.1
                                            or2"
                  a"
                              or1"
                                                           "S1"
                                                                       "pas>>"
e_zapnute"
                                                                         (s)-
   \dashv \vdash
                                                           4 H
                                             18.6
  M15.0
                               18.5
                 M15.1
"zariadeni
              "automatik
                           "induksenz
                                         "induksenz
                                                           I8.2
e_zapnute"
                              or1"
                  a"
                                            or2"
                                                           "S2"
```

Network: 5

```
M13.0

"prep_
T8.0

"optozavor "automatik hranynabez Q8.5

a" a" nej" "pas>>"
```

FC200

Block: FC200 as Ladder diagram

Network: 1

```
10.0 "packa0h" M50.1 (s)
```

Network: 2

```
M10.5 Q8.5 "pas>>"
```

Network: 3

```
T0.0
"packa0h"

M50.1

(R)
```

FC200

Block: FC200 as STL

Network: 1

```
A "packa0h" I0.0
S M 50.1
```

Network: 2

```
AN "packa0h" 10.0
R M 50.1
```

Block: FC200 as FBD

Network: 1



Network: 2



