$$S = \overline{(A+B+\overline{AC}).(A+B)} \oplus \overline{(B+D).(A+B+\overline{AC})}$$

$$\boxed{S = \overline{A+B} \oplus (B+D)}$$

$$S = (A+B)(B+D) + \overline{A+B}\,(\overline{B+D}) =$$

$$= \cancel{AB} + \cancel{AD} + \cancel{B} + \cancel{BD} + (\overline{A}\,\overline{B})(\overline{B}\,\overline{D}) =$$

$$= B + AD + \overline{A}\,\overline{B}\,\overline{D} = B + \overline{A}\,\overline{D} + AD =$$

$$= B + \overline{A \oplus D} = \overline{\overline{B}.\overline{A}\,\overline{D}.\overline{AD}} = B + \overline{A+D} + \overline{\overline{A}+\overline{D}}$$

- 3 portas: 1 OU; 2 XOR
- 2 CIs

- 8 portas NE
- 2 CIs

- 8 portas NOU
- 2 CIs

$S = \overline{A}B + A\overline{B}$