FACTSHEET

Line protection
6000 series, PSL series version 1.00

With its dual CPU and A/D converter, reliable main protection and its complete back-up protection functionality, the PSL 6602U and PSL 6603U will increase the reliability of your grid.

Configured solution
- Configured and tested solutions for:
  - Single breaker with single phase tripping
  - Single breaker with three-phase tripping
  - Double-breaker with single phase tripping
  - Double-breaker with three-phase tripping

Main protection functions
- Line differential protection (PSL 6603U only)
  - Sudden change differential component
  - Current differential component
  - Residual current differential component
  - 2 line ends
  - Double ended fault location
  - CT saturation detection
- 3 zone full-scheme line distance protection
  - Quadrilateral characteristic
  - Sudden change distance component
  - Scheme communication logic
  - Switch on to fault logic
  - Current reversal and weak end infeed logic
  - Power swing detection and blocking

Back-up protection functions
- 2 stage directional residual DT/IDMT overcurrent protection
- DT overcurrent and residual overcurrent protection during VT failure
- Switch-onto-fault (SOTF) logic
- Pole discordance protection

Secondary system supervision
- Fuse failure supervision
- Current circuit supervision
- CT imbalance supervision
- CT inversion supervision
- CT Load asymmetry supervision
- Circuit breaker supervision

Monitoring
- Disturbance recording and disturbance reporting
  - Event list for 1000 events
  - Event and trip value recorders
  - Fault locator
- Large colour HMI, touch screen enabled with virtual keyboard, virtual push buttons, and LED indications with alarm descriptions

Measurements
- U, I, and f

Control functions
- Synchronism check
- Auto-reclosing (single-pole and/or three-pole)

Engineering, testing, commissioning, and maintenance
- SgView for the parameterization, monitoring, online debugging and disturbance handling
- VSCL61850 for IEC 61850 configuration of the device

The PSL series protection devices guarantee reliability of your protection solution.
Hardware
- Dual CPU and A/D converter for increased reliability
- 1/1 x 19”, 4U height case
  - IED front panel IP 40
  - IED back panel, connecting terminal IP 20
- Power supply modules for 110 and 220 VDC
- Inputs
  - 4 current inputs (choose 1 A or 5 A) and 4 voltage inputs
  - 27 binary inputs, 110 or 220 VDC (matching power supply)
  - 35 binary outputs
  - 14 signal outputs
- Compression type connectors
- Accurate time-synchronization through SNTP, IRIG-B or PPS/PPM
- Remote end data communication modules for direct single mode fiber optic cable up to 60 km
- Supports highest EMC requirements. Technical details are available in the PSL 6602U or PSL 6603U Product Guide.
- Independent laboratory certified

Communication
<table>
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<tr>
<th>Service port</th>
<th>USB-B, 10BASE-TX</th>
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<tbody>
<tr>
<td>Line communication</td>
<td>FC-PC, single mode FO, &lt; 60 km</td>
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<tr>
<td>IEC 61850-8-1</td>
<td>LC-FO, 100BASE-FX</td>
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<tr>
<td>IEC 60870-5-103</td>
<td>Serial (RS485) or 100BASE-FX (LC-FO)</td>
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<tr>
<td>RS232 printer port</td>
<td>Communication</td>
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Accessories
- COMBITEST test system
- COMBIFLEX auxiliary relays

Environmental
| Operation temperature range | -25...+55 °C (continuous) |
| Short-time service temperature range | -25...+70 °C (<16 h) |
| Relative humidity | <93 %, no moisture condensation |
| Altitude | Maximum 4000 m |
| Transport and storage temperature range | -25...+70 °C |

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