



Quick Compare: BDL45-410 vs BDL45-411

	BDL45-410	BDL45-411	
			
Applications	<ul style="list-style-type: none"> Testing protection functions using analogue and digital interfaces or IEC61850 Sampled Value and GOOSE protection scheme testing (including virtual relay library), events analysis. Uses the RT-Lab simulation environment to create and manage 'real-time' models created in SPS. 	<ul style="list-style-type: none"> Testing protection functions using analogue and digital interfaces or IEC61850 Sampled Value and GOOSE protection scheme testing (including virtual relay library), events analysis Uses the powerful single-line HYPERSIM modelling environment, developed by Hydro-Quebec and OPAL-RT, which is used by many of the world's largest grid operators and research labs to explore the behaviours of large, complex grids up to 2,000 3-P buses. 	
CPU	Intel XEON E3 3.5GHz	Intel XEON E3 3.5GHz	
CPU Cores	4	4	
XILINX FPGA	Kintex-7 325T SoC	Kintex-7 325T SoC	
Connectivity	Dual 5Gbps GTX optical ports	Dual 5Gbps GTX optical ports	
Software	RT-Lab FX75 Series (4 CPU cores activated *)	HYPERSIM (4 CPU cores activated **)	
		ScopeView	
I/Os	96 included as 64 digital + 32 analogue (128 I/Os total possible)		
	Digital I/Os	32x channel INPUT, opto-couplers, 4.5V-50V range, 32 static digital inputs	32x channel INPUT, opto-couplers, 4.5V-50V range, 32 static digital inputs
	Digital I/Os	32x channel OUTPUT, 65-200ns, 5V-30V range, 32 static digital inputs, push-pull, FET	32x channel OUTPUT, 200-65ns, 5V-30V range, 32 static digital inputs, push-pull, FET
	Analogue I/Os	16x channel INPUT, 500kS/s*** +/-20V adjustable range, 16 bit resolution	16x channel INPUT, 500kS/s*** +/-16V, 16 bit, 15mA
16x channel OUTPUT, 1MS/s*** +/-16V output range, 16 bit resolution, 15mA		16x channel OUTPUT, 1MS/s*** +/-16V, 16 bit, 15mA	
Options	<ul style="list-style-type: none"> RT-Lab FX75 Series eHS64 Electrical Hardware Solver FPGA IP Digital I/O License for OP4510 RT-XSG FPGA Blockset Dev System CANbus Interface Kit & driver RS422 Expansion Board DB37 to Spring Cage Terminal Adapter IEC 61850-8-1 GOOSE driver 	<ul style="list-style-type: none"> IEC 61850-8-1 Sampled Value driver C37.118 Slave driver C37.118 Master driver DNP3 Outstation Slave driver DNP3 Master driver Modbus Slave driver Modbus Master driver Master Clock Time Synchronisation kit 	

* Supports real-time simulations of grid models of 60-100 3-Phase buses

** Supports real-time simulations of grid models of 120-200 3-Phase buses