Ekip UP units

The innovative Ekip UP digital units are the new benchmark for the measurement, protection and control for low voltage electrical systems.

The result is a single unit suitable for any demanding application without the need for other external devices.
The ABB plug&play solution improves the plant efficiency, increases awareness of resources and process behaviors, and delivers an easier, more intuitive user experience.
As multifunctional unit, there are five different commercial versions that guarantee flexibility and modularity to meet the needs of all measurement, protection and control applications.

- **Ekip UP Monitor**
- **Ekip UP Protect**
- **Ekip UP Protect +**
- **Ekip UP Control**
- **Ekip UP Control +**

All units can also be equipped with optional connectivity and signally modules, in addition to the standard accessories. The main software functions can also be uploaded into Ekip UP Protect, Protect+ and Control+. These versions are ready for external toroids that enable more earth fault protections.



	Ekip UP Monitor	Ekip UP Protect	Ekip UP Protect +	Ekip UP Control	Ekip UP Control +
Control				●	●
Protection		●	●		●
Metering	●	●	●	●	●

● = standard functions
● = advanced functions

Ekip UP units

PROTECTION

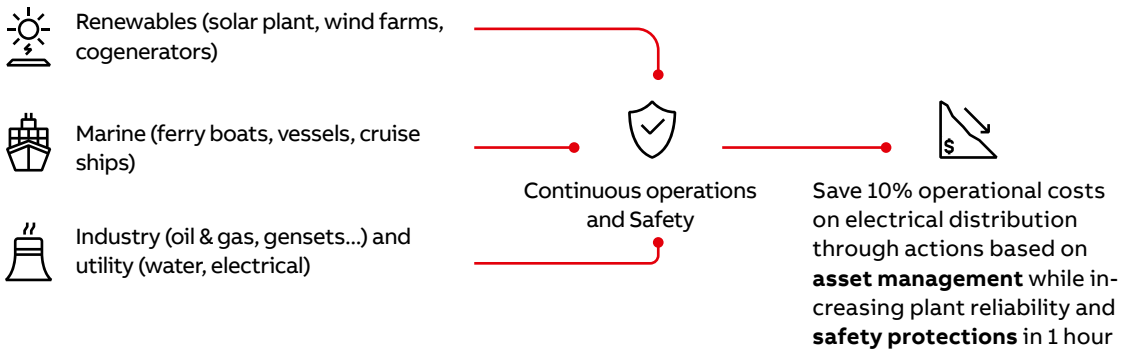
Ekip UP Protect and Protect+ add the protection functions above and beyond monitoring and connectivity ones.

Ekip UP Protect enables protection based on current, voltage, frequency and power as a protective relay for power feeders. Ekip UP Protect+ adds generator protections, adaptive and overcurrent directional ones for power distribution and generation. Using Ekip Protect+ the ability to get digital selectivity with proprietary bus, plus distinguish restricted/unrestricted earth fault is guaranteed. Ekip UP Protect and Ekip UP Protect+ can be equipped with the software kits from the "all-in-one" ABB platform, like load shedding innovations, synchrocheck capability, interface certified protections. Those advanced features can ensure service continuity and energy efficiency in the plants, reducing the complexity of different device installation.

Typical application of Ekip UP Protect and Ekip UP Protect+ are:

- Adding protection functionalities to switch-disconnectors, guaranteeing short-circuit breaking capacity as their short time withstand current.
- Leveraging on more ANSI protections and other innovations for installed circuit breaker with simple trip unit, like thermal-magnetic, with the possibility to maintain current short-circuit values.

Ekip UP is also the perfect solution when trip unit spare parts no longer available or as a backup relay.





Technical characteristics for measurement functions

Instantaneous measurements		**Parameters**	**Precision with sensors** (1)
Currents (RMS)	[A]	L1, L2, L3, Ne	1%
Earth fault current (RMS)	[A]	Ig	2%
Phase-phase voltage (RMS)	[V]	U12, U23, U31	0.7%
Phase-neutral voltage (RMS)	[V]	U1, U2, U3	0.7%
Phase sequence			
Frequency	[Hz]	f	0,2%
Active power	[kW]	P1, P2, P3, Ptot	2%
Reactive power	[kVAR]	Q1, Q2, Q3, Qtot	2%
Apparent power	[KVA]	S1, S2, S3, Stot	2%
Power factor		Total	2%
Peak factor		L1, L2, L3, Ne	

Counters recorded from installation or from the last reset		**Parameters**	**Precision**
Active energy	[kWh]	Ep total, Ep positive, Ep negative	2%
Reactive energy	[kVARh]	Eq total, Ep positive, Ep negative	2%
Apparent energy	[KVAh]	Es total	2%

Network Analyzer		**Parameters**	**Intervals**
Hourly average voltage value	[V] [no]	Umin= 0.75…0.95 x Un Umax= 1.05…1.25 x Un Events counter (nr. of events day by day in the last year plus the total events in the breaker's lifetime)	t = 5…120min
Short voltage interruptions	[no]	Umin= 0.10…0.95 x Un Events counter (nr. of events day by day in the last year plus the total events in the breaker's lifetime)	t <40ms
Short voltage spikes	[no]	Umax= 1.05…1.25 x Un Events counter (nr. of events day by day in the last year plus the total events in the breaker's lifetime)	t <40ms
Slow voltage sags and swells	[no]	Umin1= 0,10…0,95 x Un Umin2= 0,10…0,95 x Un Umin3= 0,10…0,95 x Un Umax1= 1.05…1.25 x Un Umax2= 1.05…1.25 x Un Events counter (nr. of events day by day in the last year plus the total events in the breaker's lifetime)	t = 0.04s...60s
Voltage unbalance	[V] [no]	U neg. seq.= 0.02…0.10 x Un Events counter (nr. of events day by day in the last year plus the total events in the breaker's lifetime)	t = 5…120min
Harmonic analysis		Current and Voltage up to 50° Alarm THD: 5…20% Single harmonic alarm: 3...10% plus a count of minutes the harmonic has been exceeded	

(1) With Type C current sensors based on installation conditions mentioned in the dedicated manual, doc 1SDH002003A1001 and in case of VT used cl. 0.2 or below.

Record of values: of the parameter for each interval with time-stamping		Parameters	Window	Intervals
Current: minimum and maximum	[A]	Min, I Max	Fixed synchronizable by remote	Duration: 5...120min Number of intervals: 24
Phase-phase voltage: minimum and maximum	[V]	U Min, U max		
Reactive power: average and maximum	[kVAR]	Q Mean, Q Max		
Apparent power: average and maximum	[KVA]	S Mean, S Max		

Data logger: record of high sampling rate parameters		Parameters
Currents	[A]	L1, L2, L3, Ne, Ig
Voltages	[V]	U12, U23, U31
Active power: average and maximum	[kW]	P Mean, P Max
Sampling rate	[Hz]	1200-2400-4800-9600
Maximum recording duration	[s]	16
Recording stop delay	[s]	0-10s
Number of registers	[no]	2 independent

Information on trip and opening data:		Parameters
Type of protection tripped [1]		eg. L, S, I, G, UV, OV
Fault values per phase [1]	[A/V/Hz w/VAR]	eg. I1, I2, I3, neutral for S protection V12, V23, V32 for UV protection
Time-stamping		Date, time and progressive number

Maintenance indicators		Parameters
Information on last 30 trips [1]		Type of protection, fault values and time-stamping
Information on last 200 events		Type of event, time-stamping
Number of mechanical operations	[no]	Can be associated to alarm
Total number of trips [1]	[no]	
Total operating time	[h]	
Date of maintenance operations performed		Last
Indication of maintenance operation needed		
Unit I.D.		Type of unit, assigned device name, serial number

Self-diagnosis	Parameters	
Check of continuity of internal connnections	Alarm due to disconnection: rating plug, sensors, trip coil	Note: Opening of switching device can be set in the event of alarm
Failure of circuit-breaker to open (ANSI 50BF) [1]	Alarm following non-tripping of protection functions	
Temperature (OT)	Prealarm and alarm for abnormal temperature	

(1) for Protect, Protect+, Control+ only

Ekip UP
Ekip UP versions



Type	Code
Ekip UP Monitor	1SDA083359R1
Ekip UP Protect	1SDA083360R1
Ekip UP Protect +	1SDA083361R1
Ekip UP Control	1SDA083362R1
Ekip UP Control +	1SDA083363R1