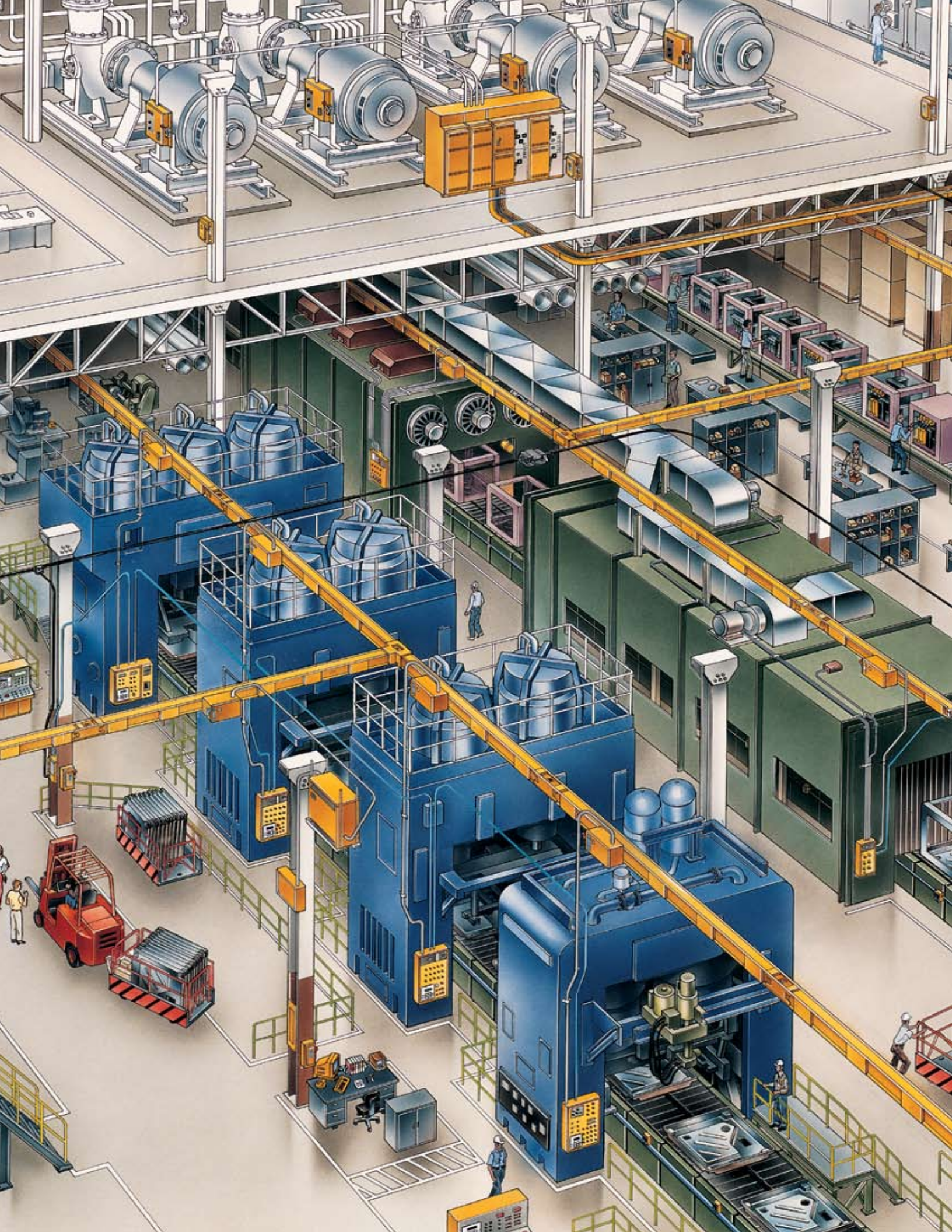
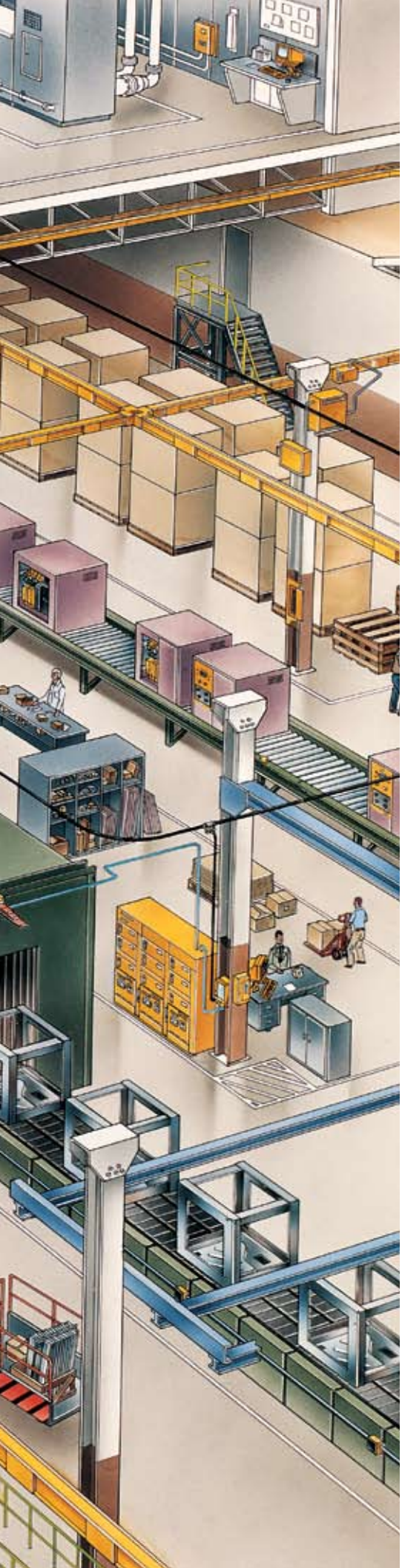
SEPAM Digital Relay
Product Line Overview

Square D
Electrical
Protection
And
Monitoring

a brand of Schneider Electric

SQUARE D





Square D Sepam Digital Relays:

A World Leader in Digital Protection Technology

Schneider Electric, a world leader in digital protection units, presents the latest generation of Square D Sepam digital relays backed by more than 25 years of worldwide history.

Whether you are looking for a simple protection relay or a multifunctional, communicating protection unit for remote network management and operation, you will find the right solution in the Sepam series of digital protective relays. Sepam relays are ideally suited for the most commonly encountered applications in utility substations, industrial and large commercial environments — at low, medium and high voltage levels.

Digital Relays to Meet Your Specific Needs

Not only are Sepam relays a world leader in multifunctional digital protection, but in a standard footprint that covers virtually any medium voltage application imaginable. Our unique design also allows you to functionally enhance your Sepam digital relays at any time, with the addition of optional modules, allowing you to adapt to as many situations as possible, and letting your system grow as your facility does.

Over 300,000 Installations Worldwide

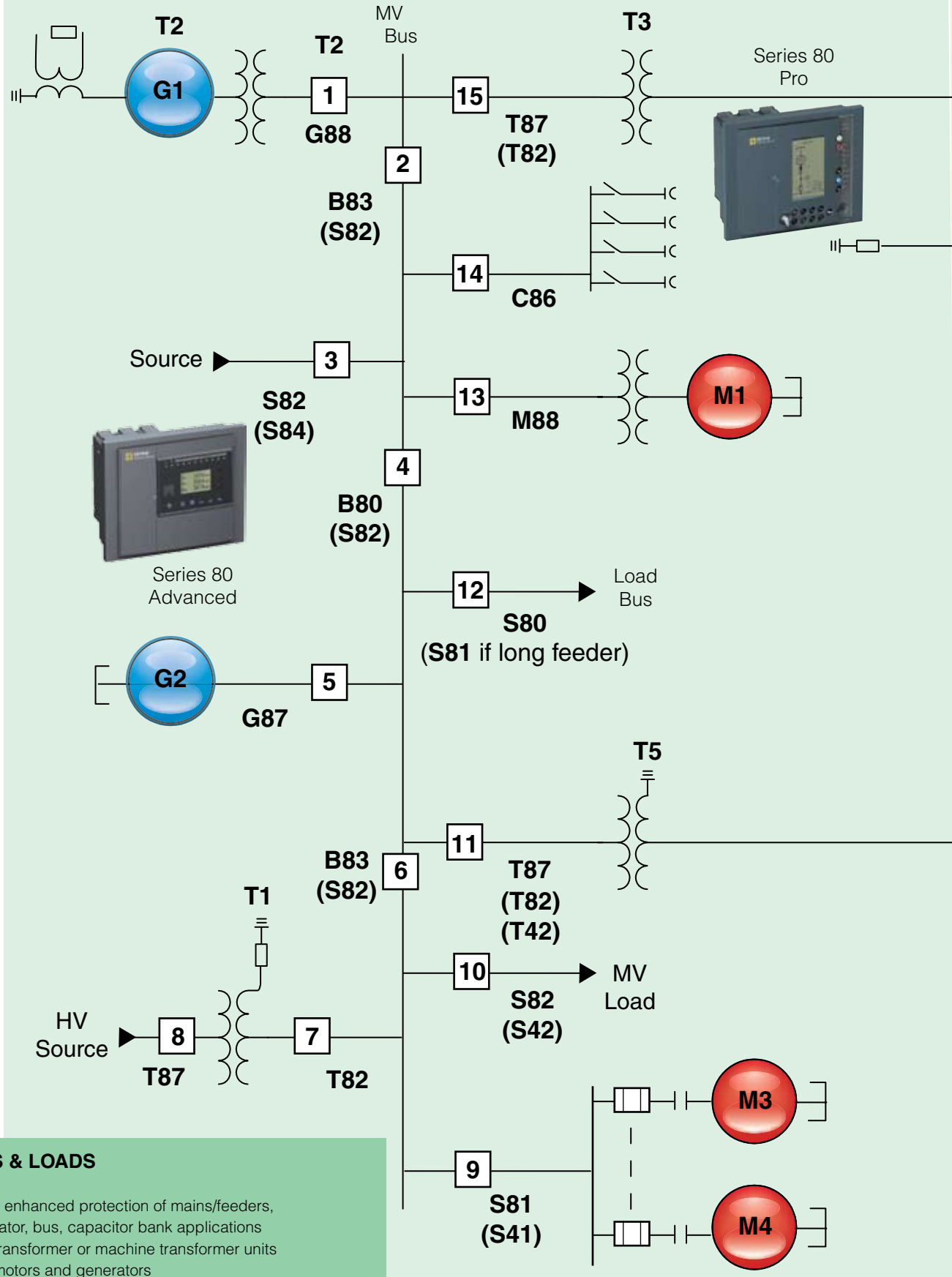
Schneider Electric has provided relay protection units for over 25 years. In additon to myriads of industrial and commercial locations, we have over 300,000 protective devices installed world-wide in critical power applications, such as standby generators for hospitals, waste-water treatment plants, data centers and telecommunication facilities.

Designed to Exceed the Dependability you Require

Superior, reliable functionality is critical in the power industry. The Square D Sepam relay was specifically designed around a dependability study to ensure maximum reliability. To take the notion of reliability a step further, our engineers added a comprehensive self-testing sequence that monitors internal health with status indication by the watchdog relay. Following that, they made sure our units have exceptional withstand to electromagnetic disturbances, vibration and power system transients. Sepam product engineers understand your requirements.

Digital Relay Protection for Every Level of Your Power Systems

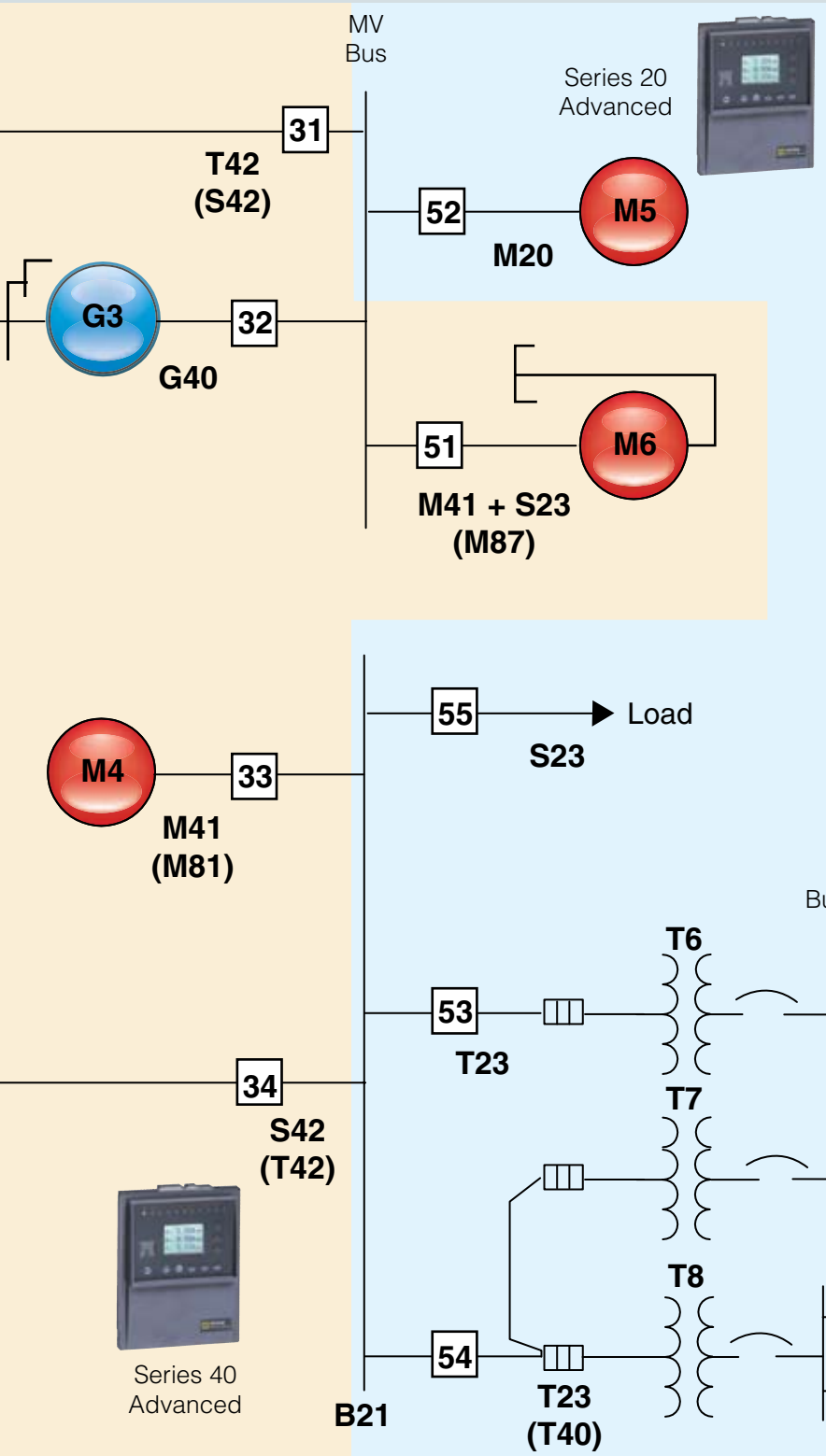
Sepam multifunctional digital protection relays provide metering, monitoring, analysis and diagnosis for your entire operation. It can also help you improve power system reliability, extend the life of power equipment, and sustain your operations.



CRITICAL SOURCES & LOADS

Series 80 Relay

- Standardized footprint for enhanced protection of mains/feeders, transformer, motor, generator, bus, capacitor bank applications
- Differential protection of transformer or machine transformer units
- Differential protection of motors and generators
- Protection for mains, ties and important feeders
- Expanded logic equation capabilities
- Graphical assistance for setting software
- Battery backup for historical and fault waveform data retention
- Optional mimic based display units are available to view a portion of oneline and phasor system values



Quick Select Guide			Protection Zone				
		Feeder or main (Substation)	Transformer	Motor	Generator	Bus (volts/freq)	Capacitor Bank
Criteria	**Selection**						
Network structure	Radial (51, 51N, 46)	S20	T23	M20	G40	B80	C86
	Long feeders (67N)	S41		M41			
	Closed loop (67N, 67)	S42					
	Parallel mains [transf][sources] (67N, 67)	S42	T42		G82		
	Sync-check required (25)(67N, 67)	S82	T82		G82	B80	
Grounding system	Solid or low/high impedance (51N)	S23	T23	M20	G40		
	Ungrounded or compensated (67N/NC)	S41	T42	M41	G82		
Protection	Basic Feeder [Transf][Motor][Generator]	S23	T23	M20	G40		
	Voltage/frequency (27/59/81)	S40	T40	M41	G40	B21	
	ROCOF (81R)	S84				B22	
	Advanced Fdr/Main[Transf][Motor][Gen]	S41	T82	M81	G82	B83	
	Thermal overload (49)-cable	S81					
	Thermal O/L (49) - capacitor bank						C86
	Differential (87T)		T87				
	Machine differential (87M)			M87	G87		
	Machine-transformer unit differential (87T)			M88	G88		
Metering	I	S23	T23	M20			
	V, f					B21	
	I, V, f, P, E	S40	T40	M41	G40	B80	
	I, V, V, f, P, E					B83	
	I, I, V, F, P,E		T87	M87	G87		
	THD-I,THD-V	S80	T81	M81	G82	B80	
Temperature	≤8 RTDs of same type		T23	M20	G40		
	> 8 RTDs (< 16) or 2 types of RTDs		T40	M41	G40		
I/Os	≤ 10 I / 8 O	S23	T23	M20	G40	B21	
	> 10 I / 8 O and < 42 I / 23 O	S80	T81	M81	G82	B80	
Program logic customization	Control matrix	S23	T23	M20	G40	B21	
	Logic equation editor	S40	T40	M41	G40	B80	
	Ladder-logic software	S80	T81	M81	G82	B80	
Modbus communication	1 Modbus port	S23	T23	M20	G40	B21	
	2 Modbus ports	S80	T81	M81	G82	B80	

IMPORTANT SOURCES & LOADS

Series 40 Relay

- Compact case provides standardized footprint (< 4" deep)
- Directional over-current protection for dual mains, ties and closed loop feeders
- Current and voltage inputs
- Set software with Boolean logic equation assistance
- CT/VT and trip circuit supervision
- Sixteen seconds of fault recording configurable for multiple captures, detailed history of last 5 trip reports, and retention of last 200 time-tagged alarms
- 16 RTD inputs

BASIC SOURCES & LOADS

Series 20 Relay

- Backlit LCD graphic bitmap display
- 16 inverse time over-current characteristic curves
- Easy software setup
- Two 86-cycle records of fault recording, last trip fault values, and last 64 time-tagged alarms retained
- Self-test diagnostics
- Wide range of control power inputs (AC/DC)
- Breaker/Failure function for S23 and T23

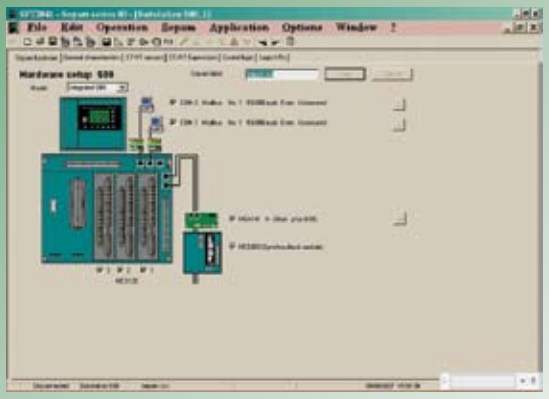
Critical Sources and Loads:

Square D Sepam **Series 80 Relay**

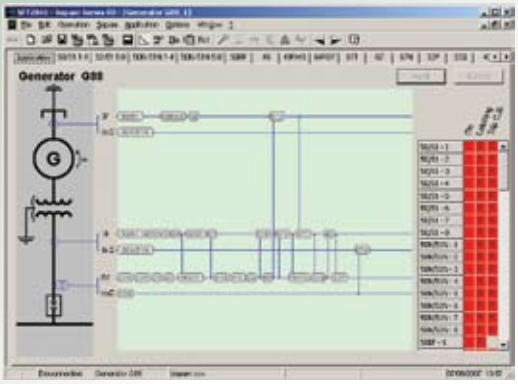
The Sepam Series 80 product was designed for one purpose — to meet or exceed the protection requirements of the harshest, most demanding industrial locations — bar none.

A standardized footprint allows the Sepam Series 80 relay to be integrated into virtually any electrical equipment, including substations (mains/feeders), bus, capacitor bank, transformer, motor and generator applications. And, differential protection of transformer or machine transformer units provides selective, high speed protection.

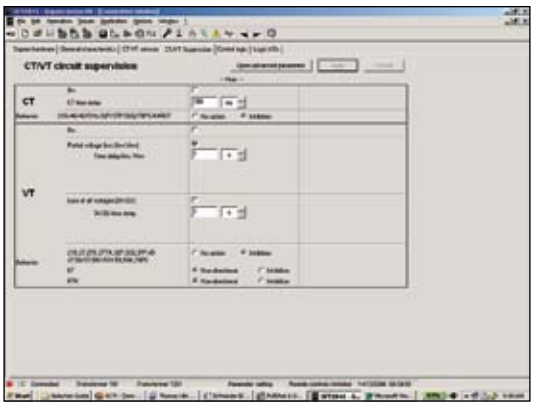
Expanded logic equation capabilities provide increased customization of control and protection, while two rear communication interfaces allow multiple Modbus® communications. And, the battery backup ensures historic and fault data retention in the event of a power outage.



An easy to use, graphical software interface allows operators to quickly and easily configure hardware, sensors, and protective schemes.



Checking the correct connection of CT and VT sensors easier than ever thanks to special measurements made inside the relay



Phase shift measurements between associated currents and voltages allow verification of the CT and VT connections.

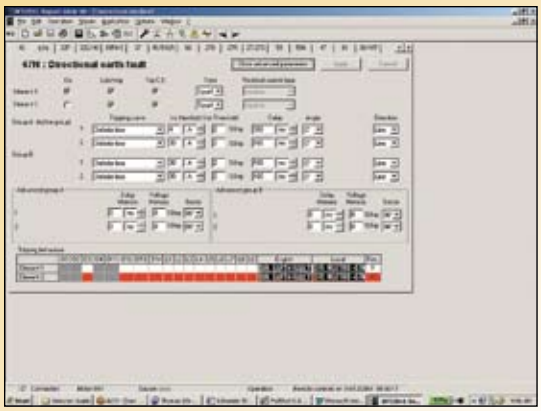
Series 80 Part Numbers:
G82, G87, G88, M81, M87, M88, S80, S81, S82, S84
T81, T82, T87, C86, B80, B83

Important Loads and Sources:

Square D Sepam **Series 40 Relay**

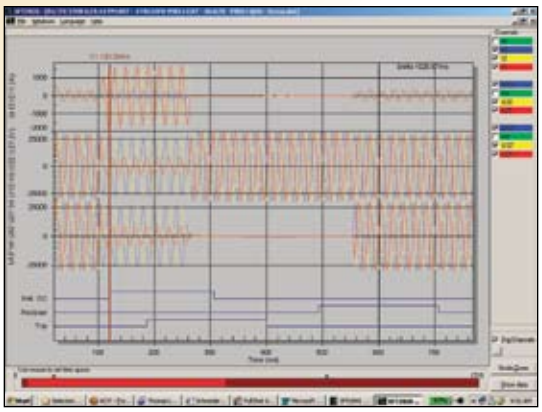
Based on the robust design of the Series 80, the Sepam Series 40 digital protective relay is designed for mid-range loads and sources.

With a standardized footprint, less than 4” deep, Series 40 is easily integrated into virtually any type of electrical equipment; substations (mains/feeders), transformer, motor and generator applications.



Directional Ground Overcurrent Protection

Directional over current protection for dual mains and ties and closed loop feeders improve coordination with adjacent protection, while current and voltage inputs provide power, energy, power factor, plus demand metering display and enhanced machine protection.



Enhanced fault recording and analysis capabilites provide personnel with detailed trip diagnostic information.

Sepam Series 40 software features Boolean logic equation assistance, which allows users to quickly and easily customize both control and protection settings. And, 16 seconds of fault recording configurable for multiple captures, detailed history of last five trip reports, and retention of the last 200 time-tagged alarms, provides personnel with detailed trip diagnostic information for enhanced fault analysis.

Series 40 Part Numbers:
G40, M41, S40, S41, S42, T40, T42

Basic Loads and Sources:

Square D Sepam **Series 20 Relay**

Thanks to a wide range of control power inputs and a limited number of Sepam Series 20 part numbers, selecting the right relay for basic loads and sources has never been easier.

An intuitive backlit LCD display allows you to view multiple metered values (current or voltage) setup, alarm, and diagnostic information at a glance. Two 86-cycle records of fault recording, last trip fault values, and last 64 time-tagged alarms retained, offer trip diagnostic information for analysis of faults. And, 16 inverse time over current characteristic curves make coordination with adjacent protection fast and easy.

Finally, programming Series 20 software is almost effortless thanks to a unique ability to create files offline, then download them through a front port on the relay. As if that were not enough, the Series 20 relay can even run a self diagnosis to ensure it is providing the level of protection you need for your application.

The Sepam Series 20 relay takes the hassle out of relay specification and gives you the protection you need for basic loads and sources.

Backlit LCD Display provides multiple lines of fault information for quick recognition of trouble conditions. Provides understanding of fault at point of failure.

Sepam Programming Software provides on-line and off-line file creation

Series 20 Part Numbers:
B21, B22, M20, S20, T20

Square D Sepam Relays:

Product Differentiators

Sepam Series 80 Relay Features	**Benefit**
Standard footprint for enhanced protection of Mains/Feeders, Transformer, Motor, Generator Applications	Uniform physical and electrical installation simplifies integration into equipment
Differential protection of transformer or machine transformer units	Provides selective high speed protection
Differential protection of motors and generators	Provides selective high speed machine protection
Protection for mains and ties and important feeders	Additional functions provide more flexible protection
Increased metering capabilities	I, V, E, P, PF, THD at local or remote display/reading
Expanded logic equation capabilities	Provides increased customization of control and protection
Setting software with graphical assistance	Provides simplified configuration of hardware, sensors, and protective schemes
Battery backup for historical and fault waveform data retention	Ensures fault data retention upon loss of control power
Two rear communication interfaces	Allows multiple Modbus communication networks
Includes all Series 20 and Series 40 Features	
Sepam Series 40 Relay Features	**Benefit**
Compact case provides standard footprint (< 4" deep) for enhanced protection of Mains/Feeders, Transformer, Motor, Generator Applications	Uniform physical and electrical installation simplifies integration into equipment
Directional overcurrent protection for dual mains and ties and closed loop feeders	Improved coordination with adjacent protection
Current and voltage inputs	Allows power, energy, power factor plus demand metering display and enhanced machine protection
Setting software with Boolean logic equation assistance	Allows customization of control and protection
CT/VT and Trip Circuit supervision	Checks integrity of input sensors and interrupting devices
Sixteen seconds of fault recording configurable for multiple captures, detailed history of last 5 trip reports, and retention of the last 200 time-tagged alarms	Provides detailed trip diagnostic information for enhanced fault analysis
Rear communication port for interface to optional Modbus communications modules	Provides for remote display and control with E, I, P, V, and PF data
Includes all Series 20 Features	
Sepam Series 20 Relay Features	**Benefit**
Backlit LCD graphic bitmap display	View multiple metered values (current or voltage) setup, alarm, and diagnostic information
Compact case provides standard footprint (< 4" deep) for basic protection of Mains/Feeders, Transformer, Motor, Bus (Voltage) Applications	Uniform physical and electrical installation simplifies integration into equipment
16 inverse time overcurrent characteristic curves	Ease of coordination with adjacent protection
Setting software with offline file creation and download to relay front port	Ease of protection programming/setup
Two 86 cycle records of fault recording, last trip fault values, and last 64 time-tagged alarms retained	Provides trip diagnostic information for analysis of faults
Self-test diagnostics	Ensures correct operation of relay and integrity of protection
Wide range of control power inputs	Ease of relay selection without multiple catalog numbers
Display operation	Minimal training required for operation. Easy to use, easy to view. Self guiding menus.
Application specific design for Main/Feeder, Transformer, Motor, Bus(Voltage) zones	Ease of startup/commissioning
Zone selective interlocking (ZSI)	Improved protection coordination
Rear communication port for interface to optional Modbus® communications modules	Provides integration into power monitoring and control system
Modular architecture	Provides additional I/O (analog & digital), RTD inputs, communications options, and remote mounting of relay
Breaker diagnostics	Allows proactive scheduled breaker maintenance

Sepam Series 80, 40 and 20 Relays Feature Summary

NOTE: Please see the Sepam catalog for a complete list. (Doc# 3000CT0701)

Control and monitoring	ANSI code	S23	S40	S41	S42	S82	S84	T23	T40	T42	T87	M20	M41	M87	G40	G87	G88	B21	B22	C86	B83
Automatic Transfer (AT)						□	□				□					□	□				□
Capacitor Step Control																				□	
Circuit breaker / contactor control	94/69	□	■	■	■	■	□	□	■	■	■	□	■	■	■	■	■	□	□	□	□
Load shed/ auto restart/ De-excite/Grp shutdown														■		■	■				
Latching / acknowledgment	86	■	■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Logic discrimination / zone selective interloc	68	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			□	□
Switching of group of settings		■	■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Logical equation editor			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Modbus communication		**S23**	**S40**	**S41**	**S42**	**S82**	**S84**	**T23**	**T40**	**T42**	**T87**	**M20**	**M41**	**M87**	**G40**	**G87**	**G88**	**B21**	**B22**	**C86**	**B83**
Measurement readout			□	□	□	□	□		□	□	□		□	□	□	□	□			□	□
Remote indication and time tagging of event			□	□	□	□	□		□	□	□		□	□	□	□	□			□	□
Remote control orders			□	□	□	□	□		□	□	□		□	□	□	□	□			□	□
Remote setting of protections			□	□	□	□	□		□	□	□		□	□	□	□	□			□	□
Transfer of disturbance recording data			□	□	□	□	□		□	□	□		□	□	□	□	□			□	□
Self-diagnosis		**S23**	**S40**	**S41**	**S42**	**S82**	**S84**	**T23**	**T40**	**T42**	**T87**	**M20**	**M41**	**M87**	**G40**	**G87**	**G88**	**B21**	**B22**	**C86**	**B83**
Watchdog		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Output relay test		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Protection		**S23**	**S40**	**S41**	**S42**	**S82**	**S84**	**T23**	**T40**	**T42**	**T87**	**M20**	**M41**	**M87**	**G40**	**G87**	**G88**	**B21**	**B22**	**C86**	**B83**
Phase overcurrent	50/51	4	4	4	4	8	8	4	4	4	8	4	4	8	4	8	8			8	8
Ground fault/sensitive ground fault	50N/51N/50G/51G	4	4	4	4	8	8	4	4	4	8	4	4	8	4	8	8			8	8
Unbalance/negative sequence	46	1	2	2	2	2	2	1	2	2	2	1	2	2	2	2	2			2	2
Thermal overload	49 RMS							2	2	2	2	2	2	2	2	2	2				
Thermal overload for cables	49C RMS					2	2														
Breaker failure	50BF	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1			1	1
Directional real overpower	32P			1	1	2	2				2		1	2	1	2	2				
Directional ground fault	67N/67NC			2	2	2	2			2			2	2		2	2				
Directional phase overcurrent	67				2	2	2			2											
Voltage restrained overcurrent	50V/51V														1	2	2				
Directional reactive overpower	32Q/40												1	1	1	1	1				
Phase undercurrent	37											1	1	1							
Locked rotor, excessive starting time	48/51/LR/14											1	1	1							
Starts per hour	66											1	1	1							
Restricted earth fault	64REF										2						2				
Two-winding transformer differential	87T										1						1				
Machine differential	87M													1		1					
Overfluxing (V / Hz)	24										2					2	2				
Field loss (underimpedance)	40													1		1	1				
Pole slip	78PS													1		1	1				
Overspeed (2 set points) (2)	12													□		□	□				
Underspeed (2 set points) (2)	14													□		□	□				
Underimpedance	21B															1	1				
Inadvertent energization	50/27															1	1				
100% stator earth fault	64G2/27TN															2	2				
Positive sequence undervoltage	27D					2	4				2		2	2		2	2	2	2	4	4
Remanent undervoltage	27R					2	2				2		1	2		2	2	1	1	2	2
Undervoltage	27/27S		2	2	2	4			2	2	4		2	4	2	4	4				
Overvoltage	59		2	2	2	4	4		2	2	4		2	4	2	4	4			4	4
Neutral voltage displacement	59N		2	2	2	2	2		2	2	2		2	2	2	2	2	2	2	2	2
Negative sequence overvoltage	47		1	1	1	2	2		1	1	2		1	2	1	2	2			2	2
Overfrequency	81H		2	2	2	2	2		2	2	2		2	2	2	2	2	1	1	2	2
Underfrequency	81L		4	4	4	4	4		4	4	4		4	4	4	4	4	2	2	4	4
Recloser (4 Cycles)	79	□	□	□	□	□	□														
Temperature monitoring (8 or 16 RTDs)	38/49T							□	□	□	□	□	□	□	□	□	□			□	
Thermostat / Buchholz	26/63							□	□	□	□						□				
Phase-to-phase undervoltage	27						2											2	2	2	2
Phase-to-neutral undervoltage	27S																	1	1		
Phase-to-neutral overvoltage	59																	2	2		
Rate of change of frequency	81R						2												1		
Thermal Overload for capacitors	49RMS																			2	
Capacitor bank unbalance	51C																			8	
Directional active underpower	37P						2														
Synch - check	25						□														

Refer to Installation Guides on www.Square D.com, Technical Library, for additional ApplicationTypes.

Metering / Monitoring		**S23**	**S40**	**S41**	**S42**	**S82**	**S84**	**T23**	**T40**	**T42**	**T87**	**M20**	**M41**	**M87**	**G40**	**G87**	**G88**	**B21**	**B22**	**C86**	**B83**
Residual Voltage																					■
RMS phase & residual currents		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■
Calculated residual current			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Average current Ia, Ib, Ic		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■
Peak demand current per phase		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■
Measured residual current		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■
Voltage Vab, Vbc, Vca			■	■	■	■	■		■	■	■		■	■	■	■	■	■	■	■	■
Residual voltage Vo			■	■	■	■	■		■	■	■		■	■	■	■	■	■	■	■	■
Positive sequence voltage Vd / rotation direction,			■	■	■	■	■		■	■	■		■	■	■	■	■	■	■	■	■
Negative sequence voltage Vi			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Frequency			■	■	■	■	■		■	■	■		■	■	■	■	■	■	■	■	■
Real / reactive / apparent power P, Q, S			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Peak demand real/reactive power PM, QM			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Power factor			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Calculated real / reactive energy (± Wh, ± VARh)			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Real/reactive energy pulse count (± Wh, ± VARH)			□	□	□	□	■		□	□	□		□	□	□	□	□			■	■
Phase current I'1, I'2, I'3 RMS											■			■		■	■				
Calculated residual current I'0S											■			■		■	■				
Temperature measurement								□	□	□	□	□	□	□	□	□	□			□	
Rotation speed (2)														□		□	□				
Neutral point voltage Vnt																■	■				
Network and machine diagnosis		**S23**	**S40**	**S41**	**S42**	**S82**	**S84**	**T23**	**T40**	**T42**	**T87**	**M20**	**M41**	**M87**	**G40**	**G87**	**G88**	**B21**	**B22**	**C86**	**B83**
Tripping current TripI1, TripI2, TripI3, TripI0		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■
Tripping context			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Phase fault and ground fault trip counters							■				■			■		■	■			■	■
Unbalance ratio/negative sequence current		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■
Harmonic distortion (THD), current and voltage Ithd, Uthd						■	■				■			■		■	■			■	■
Phase shift ϕa, ϕb, ϕc			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Disturbance recording		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Thermal capacity used						■	■	■	■	■	■	■	■	■	■	■	■			■	
Remaining operate time before overload tripping						■	■	■	■	■	■	■	■	■	■	■	■			■	■
Waiting time after overload tripping						■	■	■	■	■	■	■	■	■	■	■	■			■	
Running hours counter / operating time								■	■	■	■	■	■	■	■	■	■			■	
Starting current and time												■	■	■							
Start inhibit delay, number starts before inhibit												■	■	■							
Unbalance ration / negative sequence current I'i											■			■		■	■				
Differential current Idiff1, Idiff2, Idiff3											■			■		■	■				
Through current It1, It2, It3											■			■		■	■				
Current phase displacement											■			■		■	■				
Apparent positive sequence impedance Zd, Zi						■	■				■			■		■	■			■	■
Apparent ph-to-ph impedance Zab, Zbc, Zca						■	■				■			■		■	■			■	■
Third harmonic voltage, neutral point or residual																■	■				
Switchgear diagnosis		**S23**	**S40**	**S41**	**S42**	**S82**	**S84**	**T23**	**T40**	**T42**	**T87**	**M20**	**M41**	**M87**	**G40**	**G87**	**G88**	**B21**	**B22**	**C86**	**B83**
Cumulative breaking current		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■
Trip circuit supervision		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			□	□
Auxiliary power supply monitoring						■	■				■			■		■	■			■	■
Number operations, operate time, charge time		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			□	□
Number of racking out operations (2)						□	□				□			□		□	□			□	□
CT/VT supervision			■	■	■	■	■		■	■	■		■	■	■	■	■			■	■
Capacitor unbalance current and capacitance																				■	

The figures indicate the number of units available for each protection function

■ *Standard*

□ *According to settings and optional modules*

(1) Protection functions with two groups of settings

(2) According to parameter setting and optional MES120 intput/output modules

(3) With optional MET148-2 temperature input modules

(4) With ACE949-2 (2-wire RS 485), ACE959 (4-wire RS 485) or ACE937 (fiber optic) communication interface

(5) Residual I'r current not measured for B83 and C86

Square D Sepam Relay Accessories

Series 20/40/80 Accessory Software

- SFT2841 for configuration (on line/ off line), monitoring, and diagnostics Required for Series 80 set-up, recommended for Series 20/40; custom cable CCA783 comes with s/w order
- SFT2826 for playback of relay-captured waveforms (included with SFT2841)
- SFT2885 for custom PLC-type ladder logic in Series 80

Series 20/40 Input/ Output (I/O) Module MES114

3 Models with 10 logic inputs & 4 output relays, voltages on inputs as shown ( ):

- MES114 (24 to 250 Vdc),
- MES114E (110 to 125 Vdc/ 110 Vac), and
- MES114F (220 to 250 Vdc/ 220 to 240 Vac).

1 total module may be added for 10 inputs/4 outputs beyond 4 outputs on base unit

Series 80 Input/ Output (I/O) Module MES120

Models with 14 logic inputs & 6 output relays, voltages on inputs as shown ( ) :

- MES120 (24 to 250 Vdc)
- MES120H (110 to 125 Vdc) [high pickup]
- MES120G (220 to 250 Vdc). [high pickup]

3 total modules may be added for 42 inputs/18 outputs beyond 5 outputs on base unit

Series 20/40/80 Remote RTD Module MET1482

Measures 8 temperatures using Pt100, Ni100 or Ni120 RTD to protect transformers, motors generators and capacitors;1 module per Sepam Series 20; 2 per Series 40/ 80 (Total of 16 RTD's)

Series 20/40/80 Remote Analog Output Module MSA141

Choice of measurement via software SFT2841Output format: 0-10mA, 0-20mA, 4-20mA; 1 module per Sepam

Series 20/40/80 Remote advanced UMI module DSM303

Module flush-mounted within 10 m of Base Relay and only connected to a base unit without advanced UMI (User Machine Interface)

Series 80 Remote Sync Check Module MCS025

For substation, transformer, generator and bus applications. Measurement of 2 phase-to-neutral or phase-to-phase voltages to check for voltage, frequency and phase differences between 2 different networks. Configuration via base unit, 3 output relays to enable Sepam to control the closing of breakers

Series 20/40/80 Communication Interface Modules

- Single LAN Interfaces [MODBUS] ACE9492: 2-wire RS 485; ACE959: 4-wire RS 485 ACE937: Fiber optic
- Dual LAN InterfacesACE969TP:E-LAN= 2-wire RS 485 [MODBUS] S-LAN= 2-wire RS 485 [MODBUS, DNP3, IEC 60870-5-103] ACE969FO:E-LAN= 2-wire RS 485 [MODBUS] S-LAN= Fiber optic [MODBUS, DNP3, IEC 60870-5-103]


MES120


MES114


MET1482


MSA141

DSM303


MCS025


ACE959


ACE9492


ACE969TP


ACE937


ACE969FO

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