

1.0 FEEDER PROTECTION

1.1 CONVENTIONAL

ANSI Codes	Details	Product
50N	Electromechanical Instantaneous Single element Earth Fault Relay	CAG17
50	Electromechanical Instantaneous Three element Over Current Relay	CAG37
51N	Electromechanical Non Directional IDMT relay suitable for Single phase Over Current or Earth Fault Application <ul style="list-style-type: none"> - SI characteristics - LTI characteristics - VI characteristics - EI characteristics Separate models for Series Trip Breakers	CDG11 CDG12 CDG13 CDG14 CDG11(ST)
50N,51N	Electromechanical Non Directional IDMT and Highset Instantaneous relay suitable for Single phase Over Current or Earth Fault Application	CDG21/CDG23/CDG24
51,51N	Electromechanical Non Directional IDMT relay with 2 Over Current & 1 Earth Fault Unit or 3 Over Current Unit Separate model for Series Trip Breakers	CDG31/CDG33/CDG34 CDG31(ST)
50,51,50N,51N	Electromechanical Non Directional IDMT and Highset Instantaneous relay suitable for 2 Over Current & 1 Earth Fault or 3 O/C Application	CDG61/CDG63/CDG64

67	<p>Single Phase Electromechanical Directional IDMT relay suitable for Over Current or Earth Fault Application</p> <ul style="list-style-type: none"> - SI characteristics - VI characteristics - EI characteristics 	<p>CDD21 CDD23 CDD24</p>
	<p>Single Phase Electromechanical Directional IDMT and Non Directional High set Instantaneous relay suitable for Over Current or Earth Fault Application with</p> <ul style="list-style-type: none"> - SI characteristics - VI characteristics - EI characteristics 	<p>CDD31 CDD33 CDD34</p>
	<p>Single Phase Electromechanical Directional IDMT and Directional High set Instantaneous relay suitable for Single phase Over Current or Earth Fault Application with</p> <ul style="list-style-type: none"> - SI characteristics - VI characteristics - EI characteristics 	<p>CDD41 CDD43 CDD44</p>
51N	<p>Static sensitive earth fault relay for protection against very low current earth faults</p> <p>Without timer With adjustable timer</p>	<p>CTIGM15 CTUM15</p>
87P	<p>Static Pilot Wire protection Relay with Injection and Supervision Unit</p>	<p>HORM4</p>

1.2 NUMERICAL

ANSI Codes	Details	Product
50N,51N	Numerical single phase Earth Fault relay With <ul style="list-style-type: none"> - Measurement - RS485 communication port - 3 Fault Records - Communication on MODBUS 	MICOMP111 "G"
50N,51N	Numerical single phase overcurrent and Earth Fault relay with <ul style="list-style-type: none"> - Start contacts - Blocking logic, - Measurements - RS485 port - Communication on COURIER / MODBUS/IEC103 	MICOM P120
50,51,50N,51N	Numerical three phase overcurrent and earth fault relay with <ul style="list-style-type: none"> - Measurement - 25 Event Records - 3 Fault Records - RS485 port (Option) - Communication on MODBUS (Option) 	MICOM P111
50,51,50N,51N,46,49, 46BC(I ₂ /I ₁),37, 50BF.	Numerical three phase overcurrent and earth fault relay with <ul style="list-style-type: none"> - Blocking logic - TCS - Measurements - RS232 & RS485 port - 75 Event Records - 5 Fault Records - 5 Disturbance Records 	MICOM P122

	<p>(each of 3 seconds duration)</p> <ul style="list-style-type: none"> - Communication on COURIER / MODBUS/IEC103 - 3 I/P & 6 O/P 	
50,51,50N,51N,46,49, 46BC(I ₂ /I ₁),37, 50BF, <u>79</u> ,	<p>Numerical three phase overcurrent and earth fault relay with</p> <ul style="list-style-type: none"> - Blocking logic, - TCS - Measurements - RS232 & RS485 port - 75 Event Records - 5 Fault Records - 5 Disturbance Records (each of 3 seconds duration) - Communication on COURIER / MODBUS/IEC103 - 5 I/P & 8 O/P 	MICOM P123
50,51,50N,51N,46,49, 46BC(I ₂ /I ₁),37, 50BF.	<p>Numerical Dual Powered three phase non-directional overcurrent and earth fault relay with</p> <ul style="list-style-type: none"> - Blocking logic, - Measurements - RS232 & RS485 port - 75 Event Records - 5 Fault Records - 5 Disturbance Records (each of 3 seconds duration) - Communication on COURIER / MODBUS/IEC103 	MICOM P124
50,51,50N,51N, <u>67,67N,27,59,59N</u> 46,49, 46BC(I ₂ /I ₁),37, 50BF, <u>79</u>	<p>Numerical Directional/non directional three phase overcurrent and earth fault relay</p> <ul style="list-style-type: none"> - Blocking logic, - Measurements - RS232 & RS485 port - 75 Event Records - 5 Fault Records - 5 Disturbance Records (each of 3 seconds duration) - Communication on MODBUS/IEC103 	MICOM P127

	- 7 I/P & 8 O/P	
50,51,50N,51N, 67,67N,27,59,59N ,46,49, 46BC(I ₂ /I ₁),37, 50BF,79, ,VTS,CTS,81U/O, 32,64R, <u>25(OPTIONAL)</u>	Numerical Directional/non directional three phase overcurrent and earth fault relay <ul style="list-style-type: none"> - Blocking logic, - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - <u>5 Fault Records</u> - <u>≥ 75 secs. Disturbance Records</u> - <u>Additional IO card</u> - Communication on MODBUS/IEC103/ <u>IEC61850(SOON)</u> - <u>FAULT LOCATOR</u> - <u>IRIGB PORT</u> <u>(OPTION)</u> 	MICOM P141/2/3

2.0 MOTOR PROTECTION

2.1 CONVENTIONAL

ANSI CODES	Details	Product
49	- Static Motor protection Relay suitable for motors fed by Circuit Breaker	CTMM 100
46,49,50	Static Motor protection Relay suitable for motors fed by Circuit Breaker	CTMM 300
46,49,50,50N,50LR	Static Motor protection Relay suitable for motors fed by Circuit Breaker	CTMM 500
46,49,50N	Static Motor protection Relay suitable for motors fed by Fused Contactor	CTMFM 300
46,49,50,50N	Static Motor protection Relay suitable for motors fed by Fused Contactor	CTMFM 400
49,46,50,50N,51N,50LR, <u>66</u>	Digital Motor protection relay with additional protection functions like <ul style="list-style-type: none">- 240 thermal curves (settable)- 1 Fault record- Recording of Motor Starting Current and time	MCHNM(motPRO)

2.2 NUMERICAL

ANSI CODES	Details	Product
49,46,50,51,50N,51N, 50LR,37	Numerical Motor protection relay with <ul style="list-style-type: none">- Measurement of Starting Current, Starting time, Phase current, Residual Current during a fault- RS485 communication port (Option)- Communication on MODBUS	MICOMP211
49,46,50,51,50N,51N, 50LR,37	Numerical Motor protection relay with <ul style="list-style-type: none">- Blocking logic- Measurements- RS232 & RS485 port- 75 Event Records- 5 Fault Records- 5 Disturbance Records (each of 3 seconds duration)- Communication on MODBUS/IEC103- 5 I/P & 6 O/P- 6 RTD (OPTION)	MICOMP220

<u>49,46,50,51,50N,51N,50LR</u> <u>,37,50BF</u>	Numerical Motor protection relay with <ul style="list-style-type: none"> - Blocking logic - Measurements - RS232 & RS485 port - 75 Event Records - 5 Fault Records - 5 Disturbance Records (each of 3 seconds duration) - Communication on MODBUS/IEC103 - 5 I/P & 6 O/P - <u>10 RTD (OPTION)</u> - <u>Power and Energy Measurement</u> 	MICOMP225
49,46,50,50N,51N,50LR,27,59, 81,32, <u>87M(Option), 50BF,</u>	Numerical Motor protection relay with <ul style="list-style-type: none"> - Blocking logic - Measurements - RS232 & RS485 port - 250 Event Records - 5 Fault Records - 210 secs. of Disturbance Records - Communication on COURIER/ MODBUS - Logic Inputs upto 16 (OPTION) - Output Relays upto 16 (OPTION) - <u>10 RTD (OPTION)</u> - <u>Power and Energy Measurement</u> 	MICOMP241/2/3

3.0 INTERCONNECTOR (GRID ISLANDING) PROTECTION

ANSI CODES	Details	Product
67,67N,32,27,59,59N,81,df/ dt, dvØ	Numerical Comprehensive Interconnector Protection Relay <ul style="list-style-type: none">- Measurements- RS232 & RS485 port- <u>≥ 250 Event Records</u>- 5 Fault Records- <u>≥ 75 secs. Disturbance Records</u>- <u>Additional IO card</u>- Communication on COURIER/ MODBUS/IEC103- IRIGB (OPTION)	MICOMP341

4.0 GENERATOR PROTECTION RELAY

4.1 CONVENTIONAL

ANSI CODES	Details	Product
87	High Impedance differential scheme based on Circulating Current principal. - Current Operated - Voltage Operated	CAG34/MCAG34 FAC34/MFAC34
32	Single Phase Reverse Power/Low Forward Power Relay	WCDM11/12
59N	95% Stator Earth Fault by Voltage measurement due to Neutral Displacement .	VDG14
27TN	100% Stator Earth Fault based on 3 rd . Harmonic Voltage measurement Additional Neutral Displacement detector element for 95% Stator Earth Fault Detection over and above 100 % Stator Earth Fault based on 3 rd . Harmonic Voltage measurement	PVMM163 PVMM164
64R1&64R2	Two stage Rotor Earth Fault Relay –one for Alarm , the second for tripping.	VAEM21& CAEM33
27/59	Electromechanical instantaneous voltage protection with adjustable settings in steps	VAGM22
81O/U	Static , instantaneous and definite time digital frequency relays for both under And over frequency protection.Has single or two stages with built-in timer .	MFVUM21/22

64	Restricted Earth Fault Relay using High Impedance Circulating Current Principal - Current Operated - Voltage Operated	CAG14/MCAG14 FAC14/MFAC14
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4.2 NUMERICAL

ANSI CODES	Details	Product
50,50N,51,51N,67,67N,64,51V,27,59,59N,81U/O,df/dt,49,46, 50BF	Numerical Generator Protection Relay for Generators less than 1 MW with - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - 5 Fault Records - <u>≥ 75 secs. Disturbance Records</u> - <u>Additional IO card</u> - Communication on COURIER/ MODBUS/IEC103 - Programmable Logic Scheme - IRIGB (OPTION)	MICOM P141
50,50N,51,51N,67,67N,64,51V,21,27,59,59N,81U/O,32,49,46,40,50BF	Numerical Comprehensive Generatorm Protection Relay for Generator less than 5 MW - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - 5 Fault Records - <u>≥ 75 secs. Disturbance Records</u> - <u>Additional IO card</u> - Communication on COURIER/ MODBUS/IEC103 - Programmable Logic Scheme - IRIGB (OPTION)	MICOMP342

50,50N,51,51N,67,67N,64,51V,21G,27,59,59N,81U/O,32,49,46,40,50BF,87,27TN/59TN,50/27	Numerical Comprehensive Generators Protection Relay for Generator more than 5 MW <ul style="list-style-type: none"> - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - 5 Fault Records - <u>≥ 75 secs. Disturbance Records</u> - <u>Additional IO card</u> - Communication on COURIER/ MODBUS/IEC103 - Programmable Logic Scheme - IRIGB (OPTION) 	MICOM P343
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5.0 DISTANCE PROTECTION

5.1 CONVENTIONAL

ANSI Codes	Details	Product
21,SOTF,VTS,PSB	Static Distance Protection Scheme suitable for Single and Three Pole Tripping	SHPM (Quadramho)

5.2 NUMERICAL

ANSI Codes	Details	Product
21,SOTF,VTS,PSB,50,51,67,67N,32,49,27,59,59N,810/U,df/dt,50 LBB, 79	Numerical Distance Protection Scheme suitable for Three Pole Tripping and Auto Reclose <ul style="list-style-type: none"> - POLYGON /CIRCULAR Characteristics - With 2 Binary I/P and 8 O/P relays - Measurements - RS232 & RS485 port - > 100 Event Records - 8 Fault Records 	MICOM P430C

	<ul style="list-style-type: none"> - 8 Disturbance Records (each of 2 seconds duration) - Communication on MODBUS/IEC103 - Programmable Scheme Logic - FAULT LOCATOR 	
21,SOTF,VTS,PSB,50,51,67,32,49,27,59,59N,810/U,50 LBB, df/dt, <u>25 (Optional)</u>	<p>Numerical Distance Protection Scheme suitable for Three Pole Tripping and or Three pole Auto Reclose</p> <ul style="list-style-type: none"> - POLYGON /CIRCULAR Characteristics - Upto 28 Binary I/P and 46 Binary O/P Relays - Measurements - RS232 & RS485 port - > 100 Event Records - 8 Fault Records - 8 Disturbance Records(each of 2 seconds duration) - <u>Additional IO card</u> - Communication on MODBUS/IEC103/ IEC61850 (<u>FUTURE</u>) - Programmable scheme Logic - IRIGB I/P (OPTION) - FAULT LOCATOR 	MICOM P435
21,SOTF,VTS,PSB,50,51,67,32,49,27,59,59N,810/U,50 LBB, df/dt, <u>25 (Optional)</u>	<p>Numerical Distance Protection Scheme suitable for Single/Three Pole Tripping and Single and /or Three pole Auto Reclose</p> <ul style="list-style-type: none"> - POLYGON /CIRCULAR Characteristics - Upto 28 Binary I/P and 46 Binary O/P Relays - Measurements - RS232 & RS485 port - > 100 Event Records - 8 Fault Records - 8 Disturbance Records (each of 2 seconds duration) - <u>Additional IO card</u> 	MICOM P437

	<ul style="list-style-type: none"> - Communication on MODBUS/IEC103/ - IEC61850 (FUTURE) - Programmable scheme Logic - IRIGB I/P (OPTION) - FAULT LOCATOR 	
21,SOTF,VTS,PSB,50,51,67,32,49,27,59,59N,810/U,50 LBB, <u>25</u>	<p>Numerical Distance Protection Scheme suitable for Three Pole Tripping and or Three pole Auto Reclose</p> <ul style="list-style-type: none"> - QUAD Characteristics - Upto 8 Binary Input and 14 Output Relays - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - 5 Fault Records - <u>≥ 75 secs. Disturbance Records</u> - <u>Additional IO card</u> - Communication on COURIER/ MODBUS/IEC103 - Programmable Logic Scheme - FAULT LOCATOR 	MICOMP441
21,SOTF,VTS,PSB,50,51,67,32,49,27,59,59N,810/U,50 LBB, <u>25</u>	<p>Numerical Distance Protection Scheme suitable for Three Pole Tripping and or Three pole Auto Reclose</p> <ul style="list-style-type: none"> - QUAD Characteristics - Upto 16 Binary Input and 21 Output Relays - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - 5 Fault Records - <u>≥ 75 secs. Disturbance Records</u> - <u>Additional IO card</u> - Communication on COURIER/ MODBUS/IEC103 - Programmable Logic Scheme 	MICOMP442

	<ul style="list-style-type: none"> - IRIGB I/P (OPTION) - IEC61850 (FUTURE) - FAULT LOCATOR 	
21,SOTF,VTS,PSB,50,51,6 7, 32,49,27,59,59N,810/U,50 LBB, <u>25</u>	Numerical Distance Protection Scheme suitable for Three Pole Tripping and or Three pole Auto Reclose <ul style="list-style-type: none"> - QUAD Characteristics - Upto 24 Binary Input and 46 Output Relays - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - 5 Fault Records - <u>≥ 75 secs. Disturbance Records</u> - <u>Additional IO card</u> - Communication on COURIER/ MODBUS/IEC103 - Programmable Logic Scheme - IRIGB I/P (OPTION) - IEC61850 (FUTURE) - FAULT LOCATOR 	MICOMP444

6.0 CURRENT DIFFERENTIAL PROTECTION

ANSI Codes	Details	Product
87P,50,51,50N,51N,49,50BF,46BC	Numerical Current Differential Relay suitable with Pilot Wire or Fibre Optic cable. <ul style="list-style-type: none"> - Start contacts - Blocking logic - Measurements - RS232 & RS485 port - 75 Event Records - 5 Fault Records - 5 Disturbance Records(each of 3 seconds duration) - Communication on MODBUS/IEC103 	MICOMP521
87P, 50, 51, 50N, 51N, 49, 50BF,46BC, <u>79</u>	Phase Segregated Current Differential Protection suitable with Fibre Optic cable . <ul style="list-style-type: none"> - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - 5 Fault Records - <u>≥ 75 secs. Disturbance Records</u> - 16 Binary Inputs and 14 Outputs - Communication on COURIER/ MODBUS/IEC103 - Programmable Logic Scheme 	MICOM P542
87P, <u>21,PSB</u> ,50, 51, 50N, 51N, <u>67,67N,79,25</u> , 49, 50BF,46BC, <u>2</u>	Phase Segregated Current Differential Protection suitable with Fibre Optic cable . <ul style="list-style-type: none"> - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - 5 Fault Records - <u>≥ 75 secs. Disturbance Records</u> 	MICOMP543

	<ul style="list-style-type: none"> - 16 Binary Inputs and 14 Outputs - Communication on COURIER/ MODBUS/IEC103 - Programmable Logic Scheme 	
<p>87P, <u>21</u>, <u>PSB</u>, 50, 51, 50N, 51N, 49, <u>67</u>, <u>67N</u>, <u>79</u> 50BF, 46BC, <u>.25</u>.</p>	<p>Phase Segregated Current Differential Protection</p> <ul style="list-style-type: none"> - suitable with <u>SDH /SONET network</u> - Measurements - RS232 & RS485 port - <u>≥ 250 Event Records</u> - 5 Fault Records - <u>≥ 75 secs. Disturbance Records</u> - 24 Binary Inputs and 32 Outputs - Communication on COURIER/ MODBUS/IEC103 - Programmable Logic Scheme 	<p>MICOMP545</p>

7.0 TRANSFORMER PROTECTION

7.1 CONVENTIONAL

ANSI Codes	Details	Product
64	Restricted Earth Fault protection using High Impedance Circulating Current Scheme.	CAG14
87T	Static Three Differential Relay working on Biased characteristics with an operating time of around 45 msec. - Two Winding - Three Winding	DTH31 DTH32
87T	Static Single Phase Differential Relay working on Biased characteristics with an operating time of less than 30 msec. - Two Winding - Three Winding	MBCH12 MBCH13
24	Over Fluxing Relays with Inverse Characteristics	GTTM22

7.2 NUMERICAL

ANSI Codes	Details	Product
87,64,24	Numerical Transformer Differential Relay for two/three winding transformer with <ul style="list-style-type: none"> - Event - Fault - Disturbance Records - Remote Communication 	KBCH120/130
87,50,51,50N,51N	Numerical comprehensive Transformer Differential Relay for two winding transformers with <ul style="list-style-type: none"> - 2 Binary I/P and 8 O/P relays - Measurements - RS232 & RS485 port - > 100 Event Records - 8 Fault Records - 8 Disturbance Records (each of 2 seconds duration) - <u>Additional IO card</u> - Communication on MODBUS/IEC103 - Programmable Scheme Logic - IRIGB (Option) 	MICOM P630C
87,64,24,50,51,50N,51N	Numerical comprehensive Transformer Differential Relay for two winding transformers with <ul style="list-style-type: none"> - 4 to 28 Binary I/P (Option) and 8 to 22 O/P relays - Measurements - RS232 & RS485 port - > 100 Event Records - 8 Fault Records - 8 Disturbance Records(each of 2 seconds duration) - <u>Additional IO card</u> - Communication on 	MICOM P632

	MODBUS/IEC103 - Programmable Scheme Logic - IRIGB (Option)	
87,64,24,50,51,50N,51N	Numerical comprehensive Transformer Differential Relay for three winding transformers with - 4 to 40 Binary I/P (Option) and 8 to 30 O/P relays - Measurements - RS232 & RS485 port - > 100 Event Records - 8 Fault Records - 8 Disturbance Records(each of 2 seconds duration) - <u>Additional IO card</u> - Communication on MODBUS/IEC103 - Programmable Scheme Logic - IRIGB (Option)	MICOM P633
87,64,24,50,51,50N,51N	Numerical comprehensive Transformer Differential Relay for four Bias I/Ps - 4 to 34 Binary I/P (Option) and 8 to 22 O/P relays - Measurements - RS232 & RS485 port - > 100 Event Records - 8 Fault Records - 8 Disturbance Records(each of 2 seconds duration) - <u>Additional IO card</u> - Communication on MODBUS/IEC103 - Programmable Scheme Logic - IRIGB (Option)	MICOM P634

8.0 BUSBAR PROTECTION

8.1 CONVENTIONAL

ANSI Codes	Details	Product
87BB	Bus bar protection scheme on Circulating Current principal based on High Impedance Scheme <ul style="list-style-type: none"> - Electromechanical Current Operated - Static Voltage operated Buswire supervision relay for use with CAG34/ FAC34 Surge Diverter to be used with above	CAG34 FAC34 VTX31 Metrosil
87BB	Bus bar protection scheme on Circulating Current principal based on High Impedance Scheme <ul style="list-style-type: none"> - Static - Modular subrack design - Built in Buswire Supervision Unit - Provision of Initiation of Busbar Protection via external LBB - Remote End Intertrip Command Outputs 	PBDCB
87BB	Bus bar protection scheme on Circulating Current principal based on Biased Characteristics <ul style="list-style-type: none"> - Static - Modular subrack design - Built in Buswire Supervision Unit - Built in Over Current Check - Provision of Initiation of Busbar Protection via external LBB - Remote End Intertrip Command Outputs 	PBLSB

8.2 NUMERICAL

ANSI Codes	Details	Product
87BB	<p>Bus bar protection scheme on Circulating Current principal based on High Impedance Scheme</p> <p>Current Operated</p> <p>Buswire supervision relay for use with CAG34/ FAC34</p> <p>Surge Diverter to be used with above</p>	<p>MICOMP12X/MICOMP14X</p> <p>VTX31</p> <p>Metrosil</p>
87BB,50LBB,50,51,50N, 51N	<p>Bus bar protection scheme on Circulating Current principal based on Biased technique.</p> <ul style="list-style-type: none"> - Operating time of less than 15 msec. - Built in Check Zone - Built in Buswire supervision Unit - Extremely fast CT saturation detector(<2msec.) - Dead Zone protection 	MICOM P740

9.0 Breaker Fail and Auto Reclose Relay

9.1 CONVENTIONAL

ANSI Codes	Details	Product
79	Electromechanical single phase or three phase single shot auto-reclose scheme with optional ' Synchronism Check ' or ' Dead Line Charging ' facility when selected for three phase operation	VARM 111
79	Electromechanical three phase single shot auto rellose scheme	VAR41B
50 LBB	Static Local Breakeer Backup Protection for Three Pole application	MCTI39
50 LBB	Static Local Breakeer Backup Protection for Single and Three Pole application	MCTI 40

9.2 NUMERICAL

ANSI Codes	Details	Product
79	Numerical three phase multishot auto-reclose scheme	MICOMP123
79,25	Numerical single phase or three phase multishot auto-reclose scheme with ' Synchronism Check ' or ' Dead Line Charging ' facility for line switched by Single circuit Breaker	KAVR130
79,25	Numerical three phase multishot auto-reclose scheme with ' Synchronism Check ' or ' Dead Line Charging ' facility for line switched by Single circuit Breaker	KAVR100
50 LBB	Numerical Local Breaker Backup Protection for Three Pole application	MICOMP122
50 LBB	Numerical Local Breaker Backup Protection for Single and Three Pole application	MICOMP821

10.0 Voltage and Frequency Relay

10.1 CONVENTIONAL

ANSI Codes	Details	Product
27	Electromechanical single pole inverse time under voltage relay	VDG13
	Static single pole definite time under voltage relay	VTUM21
	Static triple pole definite time under voltage relay	VTUM61
59	Electromechanical single pole self powered inverse time over voltage relay	VDG11
	Static single pole definite time over voltage relay	VTU21
	Static single pole combined definite time & instantaneous over voltage relay	VTU31
59N	Electromechanical single pole inverse time neutral voltage displacement relay	VDG14
27 / 59	Electromechanical single pole instantaneous under / over voltage relay with fixed setting	VAG11
27 / 59	Electromechanical single pole instantaneous under / over voltage relay	VAG21
27 / 59	Electromechanical single pole instantaneous under / over voltage self powered relay with adjustable setting	VAGM22
60	Triple pole fuse failure relay	VAPM31
81 U/O	Digital Over / Under frequency protection relay with built in time setting range Single Stage Relay	MFVUM12
	Two Stage Relay	MFVUM22

10.2 NUMERICAL

ANSI Codes	Details	Product
27, 59, 59N	Numerical voltage protection relay <ul style="list-style-type: none"> - Built in Self supervision & Diagnostic feature - Measurements - AND Logic Equation - RS232 & RS485 port - Communication on MODBUS/IEC103 - 2 I/P & 4 O/P 	P921
27, 59, 59N, 27D, 47, 81O, 81U	Numerical voltage & frequency protection relay <ul style="list-style-type: none"> - Built in Self supervision & Diagnostic feature - User settable under voltage blocking - Measurements - AND Logic Equations - RS232 & RS485 port - Event, Fault & Disturbance Records - Communication on MODBUS/IEC103 - 5 I/P & 8 O/P 	P922
27, 59, 59N, 27D, 47, 81O, 81U, 81R	Numerical voltage & frequency protection relay with df/dt <ul style="list-style-type: none"> - Built in Self supervision & Diagnostic feature - User settable under voltage blocking - Measurements - AND Logic Equations - RS232 & RS485 port - Event, Fault & Disturbance Records - Communication on MODBUS/IEC103 - 5 I/P & 8 O/P 	P923
27, 59, 81O, 81U, 81R	Numerical voltage & frequency	P941/943

	<p>protection relay with load restoration facility</p> <ul style="list-style-type: none"> - Built in Self supervision & Diagnostic feature - User settable under voltage blocking - Frequency supervised rate of change of frequency protection - Frequency supervised Average Rate of Change of Frequency protection - Automatic frequency based load restoration - Generator Abnormal Protection - Measurements - Programmable Scheme Logic - RS232 & RS485 port - IRIG-B Port (Optional) - Fibre Optic Port (Optional) - Event, Fault & Disturbance Records - Communication on MODBUS / IEC103 - Additional IO Card - 8 to 32 I/P & 7 to 30 O/P 	
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11.0 Check Synchronising

11.1 CONVENTIONAL

ANSI Codes	Details	Product
25	<p>Static check synchronising relay</p> <ul style="list-style-type: none"> - Generator application - Line application 	<p>SKE11 SKD11</p>

11.2 NUMERICAL

ANSI Codes	Details	Product
25	Numerical check synchronising relay	KAVS 100

12.0 CAPACITOR BANK PROTECTION

12.1 NUMERICAL

ANSI Codes	Details	Product
50,51,50N,51N,59,59N	Numerical comprehensive feeder protection relay	MICOMP127

12.2 AUXILIARY AND SUPERVISION RELAYS

ANSI Codes	Details	Product
60	Pt fuse fail monitoring	VAPM32
60	Voltage balance relay	MVAPM32
30	Multiplication/Annunciation Relays	VAA/MVAA
86	Hand Reset High Burden tripping relays	VAJH/MVAJ
86	Self Reset High Burden tripping relays	VAJS
86	Electrically reset Control Relay	VAJC11/ MVAJM14
86	Electrically reset High Burden Tripping Relay	MVAJ054/ 104/204
95	Trip Circuit Supervision Relay	VAX31/ MVAX31
95	Trip Relay Supervision Relay	VAX21
2	Timer with time delay on Pick up	VTT11
2	Timer with time delay on Drop off	VTT12

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