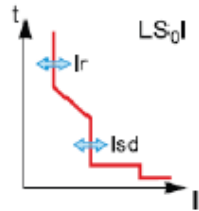
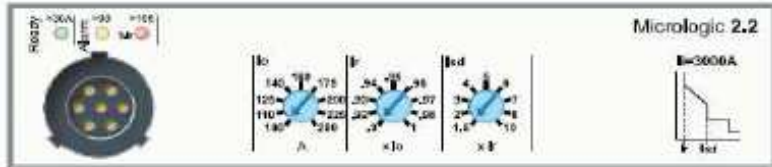


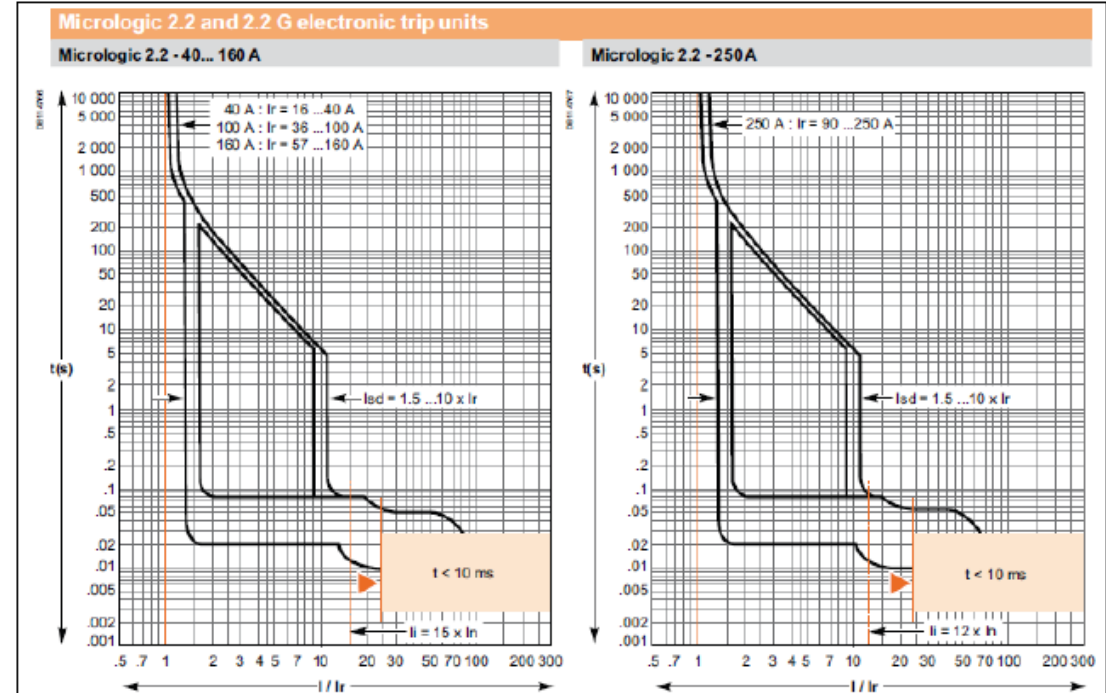
## Technical Data Sheet

### Partner – Trip Settings Cmin 0.95 NSX Micrologic 2



#### Long Time Current Setting ( Ir )

Long time tripping threshold =  $I_o \times I_r$  for the Circuit Breaker.  
 $I_r = I_o \times \dots$  There are 9 fine adjustments settings for each value of ( 0.9, 0.92, 0.93, 0.94, 0.95, 0.96, 0.97, 0.98, 1 for each value of  $I_o$ )



Example trip curve

In	Long Time Setting ( I <sub>o</sub> ) depending on trip unit rating and dial setting								
	Thermal Current Rating (A)								
40A	18	18	20	23	25	28	32	36	40
100A	40	45	50	55	63	70	80	90	100
160A	63	70	80	90	100	110	125	150	160
250A (NSX250)	100	110	125	140	160	175	200	225	250
250A (NSX400)	70	100	125	140	160	175	200	225	250
400A	160	180	200	230	250	280	320	360	400
630A	250	280	320	350	400	450	500	570	630

Short time settings  $I_{sd} (I_m) = 1.5, 2, 3, 4, 5, 6, 7, 8, 10 \times$  long time setting

Short time tripping threshold =  $I_{sd} \times I_o \times I_r$  for the Circuit Breaker

\* The short time Pick-up current tolerance level + - 10%

### NSX 40A circuit breaker with Micrologic 2.2

Rated Voltage to earth with Cmin (230 Vac x 0.95) = 218.5

Thermal Current Rating (A) (I <sub>r</sub> x I <sub>o</sub> x I <sub>n</sub> )	Short Time Setting ( I <sub>sd</sub> )									Earth fault loop impedance for 0.4 seconds ( Upper Limit )								
	1.5	2	3	4	5	6	7	8	10	I <sub>m</sub> @ 1.5 ohms	I <sub>m</sub> @ 2 ohms	I <sub>m</sub> @ 3 ohms	I <sub>m</sub> @ 4 ohms	I <sub>m</sub> @ 5 ohms	I <sub>m</sub> @ 6 ohms	I <sub>m</sub> @ 7 ohms	I <sub>m</sub> @ 8 ohms	I <sub>m</sub> @ 10 ohms
	Pick-up current ( A ) *																	
40	60	80	120	160	200	240	280	320	400	3.31	2.48	1.66	1.24	0.99	0.83	0.71	0.62	0.50
36	54	72	108	144	180	216	252	288	360	3.68	2.76	1.84	1.38	1.10	0.92	0.79	0.69	0.55
32	48	64	96	128	160	192	224	256	320	4.14	3.10	2.07	1.55	1.24	1.03	0.89	0.78	0.62
28	42	56	84	112	140	168	196	224	280	4.73	3.55	2.36	1.77	1.42	1.18	1.01	0.89	0.71
25	38	50	75	100	125	150	175	200	250	5.30	3.97	2.65	1.99	1.59	1.32	1.14	0.99	0.79
23	35	46	69	92	115	138	161	184	230	5.76	4.32	2.88	2.16	1.73	1.44	1.23	1.08	0.86
20	30	40	60	80	100	120	140	160	200	6.62	4.97	3.31	2.48	1.99	1.66	1.42	1.24	0.99
18	27	36	54	72	90	108	126	144	180	7.36	5.52	3.68	2.76	2.21	1.84	1.58	1.38	1.10

### NSX 100A circuit breaker with Micrologic 2.2

Rated Voltage to earth with Cmin (230 Vac x 0.95) = 218.5

Thermal Current Rating (A) (I <sub>r</sub> x I <sub>o</sub> x I <sub>n</sub> )	Short Time Setting ( I <sub>sd</sub> )									Earth fault loop impedance for 0.4 seconds ( Upper Limit )								
	1.5	2	3	4	5	6	7	8	10	I <sub>m</sub> @ 1.5 ohms	I <sub>m</sub> @ 2 ohms	I <sub>m</sub> @ 3 ohms	I <sub>m</sub> @ 4 ohms	I <sub>m</sub> @ 5 ohms	I <sub>m</sub> @ 6 ohms	I <sub>m</sub> @ 7 ohms	I <sub>m</sub> @ 8 ohms	I <sub>m</sub> @ 10 ohms
	Pick-up current ( A ) *																	
100	150	200	300	400	500	600	700	800	1,000	1.32	0.99	0.66	0.50	0.40	0.33	0.28	0.25	0.20
90	135	180	270	360	450	540	630	720	900	1.47	1.10	0.74	0.55	0.44	0.37	0.32	0.28	0.22
80	120	160	240	320	400	480	560	640	800	1.66	1.24	0.83	0.62	0.50	0.41	0.35	0.31	0.25
70	105	140	210	280	350	420	490	560	700	1.89	1.42	0.95	0.71	0.57	0.47	0.41	0.35	0.28
63	95	126	189	252	315	378	441	504	630	2.10	1.58	1.05	0.79	0.63	0.53	0.45	0.39	0.32
55	83	110	165	220	275	330	385	440	550	2.41	1.81	1.20	0.90	0.72	0.60	0.52	0.45	0.36
50	75	100	150	200	250	300	350	400	500	2.65	1.99	1.32	0.99	0.79	0.66	0.57	0.50	0.40
45	68	90	135	180	225	270	315	360	450	2.94	2.21	1.47	1.10	0.88	0.74	0.63	0.55	0.44
40	60	80	120	160	200	240	280	320	400	3.31	2.48	1.66	1.24	0.99	0.83	0.71	0.62	0.50

### NSX 160A circuit breaker with Micrologic 2.2

Rated Voltage to earth with Cmin (230 Vac x 0.95) = 218.5

Thermal Current Rating (A) (I <sub>r</sub> x I <sub>o</sub> x I <sub>n</sub> )	Short Time Setting ( I <sub>sd</sub> )									Earth fault loop impedance for 0.4 seconds ( Upper Limit )								
	1.5	2	3	4	5	6	7	8	10	I <sub>m</sub> @ 1.5 ohms	I <sub>m</sub> @ 2 ohms	I <sub>m</sub> @ 3 ohms	I <sub>m</sub> @ 4 ohms	I <sub>m</sub> @ 5 ohms	I <sub>m</sub> @ 6 ohms	I <sub>m</sub> @ 7 ohms	I <sub>m</sub> @ 8 ohms	I <sub>m</sub> @ 10 ohms
	Pick-up current ( A ) *																	
160	240	320	480	640	800	960	1,120	1,280	1,600	0.83	0.62	0.41	0.31	0.25	0.21	0.18	0.16	0.12
150	225	300	450	600	750	900	1,050	1,200	1,500	0.88	0.66	0.44	0.33	0.26	0.22	0.19	0.17	0.13
125	188	250	375	500	625	750	875	1,000	1,250	1.06	0.79	0.53	0.40	0.32	0.26	0.23	0.20	0.16
110	165	220	330	440	550	660	770	880	1,100	1.20	0.90	0.60	0.45	0.36	0.30	0.26	0.23	0.18
100	150	200	300	400	500	600	700	800	1,000	1.32	0.99	0.66	0.50	0.40	0.33	0.28	0.25	0.20
90	135	180	270	360	450	540	630	720	900	1.47	1.10	0.74	0.55	0.44	0.37	0.32	0.28	0.22
80	120	160	240	320	400	480	560	640	800	1.66	1.24	0.83	0.62	0.50	0.41	0.35	0.31	0.25
70	105	140	210	280	350	420	490	560	700	1.89	1.42	0.95	0.71	0.57	0.47	0.41	0.35	0.28
63	95	126	189	252	315	378	441	504	630	2.10	1.58	1.05	0.79	0.63	0.53	0.45	0.39	0.32

### NSX 250A (NSX250) circuit breaker with Micrologic 2.2

Rated Voltage to earth with Cmin (230 Vac x 0.95) = 218.5

Thermal Current Rating (A) (I <sub>r</sub> x I <sub>o</sub> x I <sub>n</sub> )	Short Time Setting ( I <sub>sd</sub> )									Earth fault loop impedance for 0.4 seconds ( Upper Limit )								
	1.5	2	3	4	5	6	7	8	10	Im @ 1.5 ohms	Im @ 2 ohms	Im @ 3 ohms	Im @ 4 ohms	Im @ 5 ohms	Im @ 6 ohms	Im @ 7 ohms	Im @ 8 ohms	Im @ 10 ohms
	Pick-up current ( A ) *																	
250	375	500	750	1,000	1,250	1,500	1,750	2,000	2,500	0.53	0.40	0.26	0.20	0.16	0.132	0.114	0.099	0.079
225	338	450	675	900	1,125	1,350	1,575	1,800	2,250	0.59	0.44	0.29	0.22	0.18	0.147	0.126	0.110	0.088
200	300	400	600	800	1,000	1,200	1,400	1,600	2,000	0.66	0.50	0.33	0.25	0.20	0.166	0.142	0.124	0.099
175	263	350	525	700	875	1,050	1,225	1,400	1,750	0.76	0.57	0.38	0.28	0.23	0.189	0.162	0.142	0.114
160	240	320	480	640	800	960	1,120	1,280	1,600	0.83	0.62	0.41	0.31	0.25	0.207	0.177	0.155	0.124
140	210	280	420	560	700	840	980	1,120	1,400	0.95	0.71	0.47	0.35	0.28	0.236	0.203	0.177	0.142
125	188	250	375	500	625	750	875	1,000	1,250	1.06	0.79	0.53	0.40	0.32	0.265	0.227	0.199	0.159
110	165	220	330	440	550	660	770	880	1,100	1.20	0.90	0.60	0.45	0.36	0.301	0.258	0.226	0.181
100	150	200	300	400	500	600	700	800	1,000	1.32	0.99	0.66	0.50	0.40	0.331	0.284	0.248	0.199

### NSX 250A (NSX400) circuit breaker with Micrologic 2.3

Rated Voltage to earth with Cmin (230 Vac x 0.95) = 218.5

Thermal Current Rating (A) (I <sub>r</sub> x I <sub>o</sub> x I <sub>n</sub> )	Short Time Setting ( I <sub>sd</sub> )									Earth fault loop impedance for 0.4 seconds ( Upper Limit )								
	1.5	2	3	4	5	6	7	8	10	Im @ 1.5 ohms	Im @ 2 ohms	Im @ 3 ohms	Im @ 4 ohms	Im @ 5 ohms	Im @ 6 ohms	Im @ 7 ohms	Im @ 8 ohms	Im @ 10 ohms
	Pick-up current ( A ) *																	
250	375	500	750	1,000	1,250	1,500	1,750	2,000	2,500	0.53	0.40	0.26	0.20	0.16	0.132	0.114	0.099	0.079
225	338	450	675	900	1,125	1,350	1,575	1,800	2,250	0.59	0.44	0.29	0.22	0.18	0.147	0.126	0.110	0.088
200	300	400	600	800	1,000	1,200	1,400	1,600	2,000	0.66	0.50	0.33	0.25	0.20	0.166	0.142	0.124	0.099
175	263	350	525	700	875	1,050	1,225	1,400	1,750	0.76	0.57	0.38	0.28	0.23	0.189	0.162	0.142	0.114
160	240	320	480	640	800	960	1,120	1,280	1,600	0.83	0.62	0.41	0.31	0.25	0.207	0.177	0.155	0.124
140	210	280	420	560	700	840	980	1,120	1,400	0.95	0.71	0.47	0.35	0.28	0.236	0.203	0.177	0.142
125	188	250	375	500	625	750	875	1,000	1,250	1.06	0.79	0.53	0.40	0.32	0.265	0.227	0.199	0.159
100	150	200	300	400	500	600	700	800	1,000	1.32	0.99	0.66	0.50	0.40	0.331	0.284	0.248	0.199
70	105	140	210	280	350	420	490	560	700	1.89	1.42	0.95	0.71	0.57	0.473	0.405	0.355	0.284

### NSX 400A circuit breaker with Micrologic 2.3

Rated Voltage to earth with Cmin (230 Vac x 0.95) = 218.5

Thermal Current Rating (A) (I <sub>r</sub> x I <sub>o</sub> x I <sub>n</sub> )	Short Time Setting ( I <sub>sd</sub> )									Earth fault loop impedance for 0.4 seconds ( Upper Limit )								
	1.5	2	3	4	5	6	7	8	10	Im @ 1.5 ohms	Im @ 2 ohms	Im @ 3 ohms	Im @ 4 ohms	Im @ 5 ohms	Im @ 6 ohms	Im @ 7 ohms	Im @ 8 ohms	Im @ 10 ohms
	Pick-up current ( A ) *																	
400	600	800	1,200	1,600	2,000	2,400	2,800	3,200	4,000	0.33	0.25	0.17	0.12	0.10	0.083	0.071	0.062	0.050
360	540	720	1,080	1,440	1,800	2,160	2,520	2,880	3,600	0.37	0.28	0.18	0.14	0.11	0.092	0.079	0.069	0.055
320	480	640	960	1,280	1,600	1,920	2,240	2,560	3,200	0.41	0.31	0.21	0.16	0.12	0.103	0.089	0.078	0.062
280	420	560	840	1,120	1,400	1,680	1,960	2,240	2,800	0.47	0.35	0.24	0.18	0.14	0.118	0.101	0.089	0.071
250	375	500	750	1,000	1,250	1,500	1,750	2,000	2,500	0.53	0.40	0.26	0.20	0.16	0.132	0.114	0.099	0.079
230	345	460	690	920	1,150	1,380	1,610	1,840	2,300	0.58	0.43	0.29	0.22	0.17	0.144	0.123	0.108	0.086
200	300	400	600	800	1,000	1,200	1,400	1,600	2,000	0.66	0.50	0.33	0.25	0.20	0.166	0.142	0.124	0.099
180	270	360	540	720	900	1,080	1,260	1,440	1,800	0.74	0.55	0.37	0.28	0.22	0.184	0.158	0.138	0.110
160	240	320	480	640	800	960	1,120	1,280	1,600	0.83	0.62	0.41	0.31	0.25	0.207	0.177	0.155	0.124

## NSX 630A circuit breaker with Micrologic 2.3

Rated Voltage to earth with Cmin (230 Vac x 0.95 ) = 218.5

Thermal Current Rating (A) (I <sub>r</sub> x I <sub>o</sub> x I <sub>n</sub> )	Short Time Setting ( I <sub>sd</sub> )									Earth fault loop impedance for 0.4 seconds ( Upper Limit )								
	1.5	2	3	4	5	6	7	8	10	I <sub>m</sub> @ 1.5 ohms	I <sub>m</sub> @ 2 ohms	I <sub>m</sub> @ 3 ohms	I <sub>m</sub> @ 4 ohms	I <sub>m</sub> @ 5 ohms	I <sub>m</sub> @ 6 ohms	I <sub>m</sub> @ 7 ohms	I <sub>m</sub> @ 8 ohms	I <sub>m</sub> @ 10 ohms
	Pick-up current ( A ) *																	
630	945	1,260	1,890	2,520	3,150	3,780	4,410	5,040	6,300	0.21	0.16	0.11	0.08	0.063	0.053	0.045	0.039	0.032
570	855	1,140	1,710	2,280	2,850	3,420	3,990	4,560	5,700	0.23	0.17	0.12	0.09	0.070	0.058	0.050	0.044	0.035
500	750	1,000	1,500	2,000	2,500	3,000	3,500	4,000	5,000	0.26	0.20	0.13	0.10	0.079	0.066	0.057	0.050	0.040
450	675	900	1,350	1,800	2,250	2,700	3,150	3,600	4,500	0.29	0.22	0.15	0.11	0.088	0.074	0.063	0.055	0.044
400	600	800	1,200	1,600	2,000	2,400	2,800	3,200	4,000	0.33	0.25	0.17	0.12	0.099	0.083	0.071	0.062	0.050
350	525	700	1,050	1,400	1,750	2,100	2,450	2,800	3,500	0.38	0.28	0.19	0.14	0.114	0.095	0.081	0.071	0.057
320	480	640	960	1,280	1,600	1,920	2,240	2,560	3,200	0.41	0.31	0.21	0.16	0.124	0.103	0.089	0.078	0.062
280	420	560	840	1,120	1,400	1,680	1,960	2,240	2,800	0.47	0.35	0.24	0.18	0.142	0.118	0.101	0.089	0.071
250	375	500	750	1,000	1,250	1,500	1,750	2,000	2,500	0.53	0.40	0.26	0.20	0.159	0.132	0.114	0.099	0.079

The value of Earth Loop Impedance ( Z<sub>s</sub> ) for a circuit breaker may be calculated by dividing the current required to trip at the required tripping time into the phase to earth voltage of the system.

Current required for tripping may be found by consulting the tripping curve or tables provided.

A calculation may be used where the earth fault loop impedance ( Z<sub>s</sub> ) can not be consulted.

Tripping current for disconnection time upto 0.4 seconds may be obtained from the circuit breaker trip unit setting.

$$Z_s = \frac{\text{Voltage Phase to earth}}{I_n \times I_o \times I_r \times I_{sd} \times 1.1}$$

Where :-

I<sub>n</sub> = rating of the circuit breaker

I<sub>o</sub> = long time dial setting (Coarse)

I<sub>r</sub> = long time dial setting (Fine)

I<sub>sd</sub> = short time dial setting

1.1 = +10% tolerance for the I<sub>sd</sub> short time Pick-up current setting

**Note:** Do not use these figures where BS7671 Amendment 3:2015 is not applicable