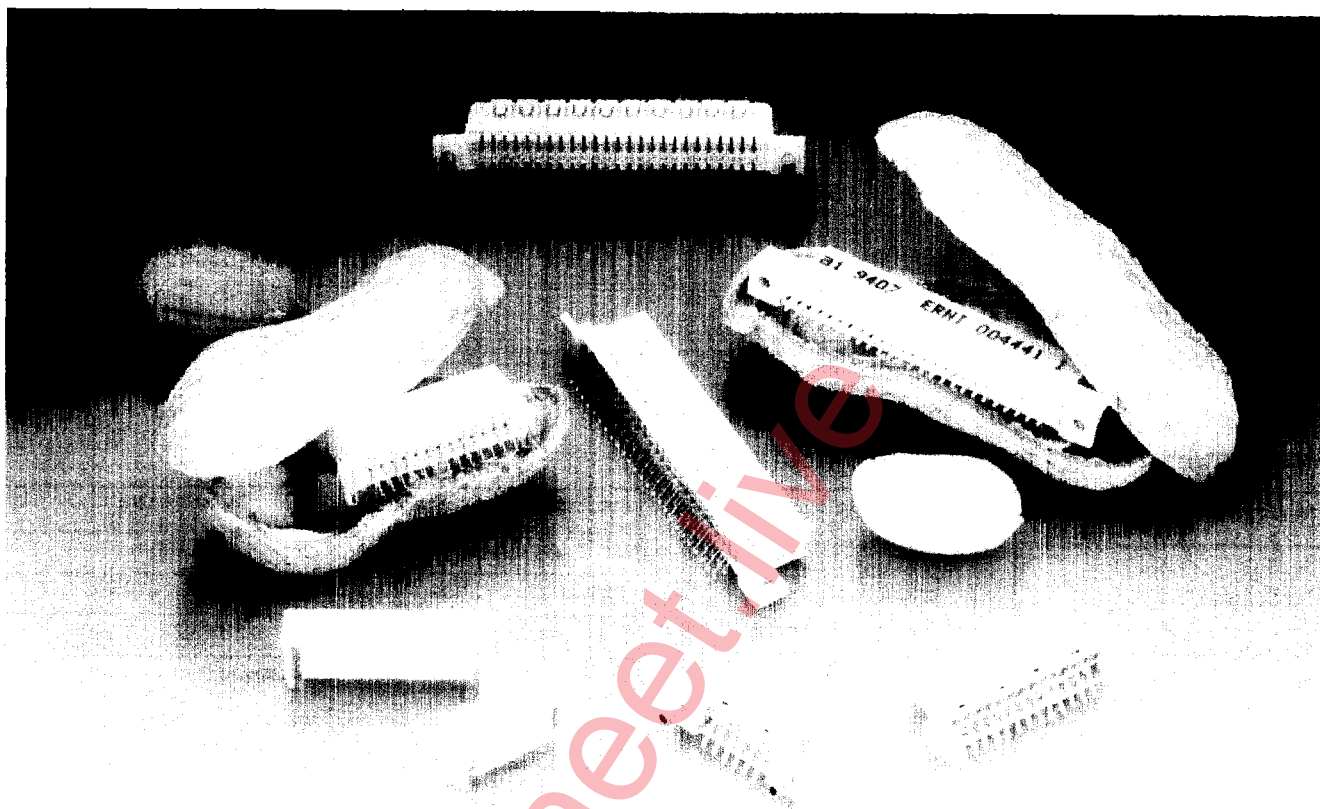


SMC

**The ERNI SMC Connector System
1.27mm (.050") Board-to-Board & Cable-to-Board Connectors**



A New Level of Connector Performance from ERNI

In response to the growing need for high density interconnects, ERNI offers the SMC Connector System which combines many of the high quality features of 2.54mm centerline connectors, like the ERNI DIN 41612 connectors, into a connector which uses half the space.

The result is a miniature connector with a 1.27 mm centerline, which offers distinct advantages in applications where space is at a premium and packaging density is an absolute. The SMC connectors feature both standard mating (straight socket to 90° plug) and inverse mating (straight plug to 90° socket) for printed circuit board (PCB) interconnecting. This provides for diverse PCB-to-PCB applications such as right angle connector (on the "daughter" card) to straight connector (on the "mother" board) mating configurations or for parallel or stacking mating configurations. The SMC connectors also feature a cable-to-PC board version which provides an efficient means of connecting ribbon cables to PC boards in small spaces. Additionally, surface mount (SMT) and robot compatible versions allow PC boards to be assembled using the most advanced processing technologies.

Space Saving SMC Applications & Advantages

The SMC Connector System from ERNI is already in use in a wide range of applications where efficient space utilization, packaging density and high system performance are crucial. Here are some ideal applications and unique application features of the SMC:

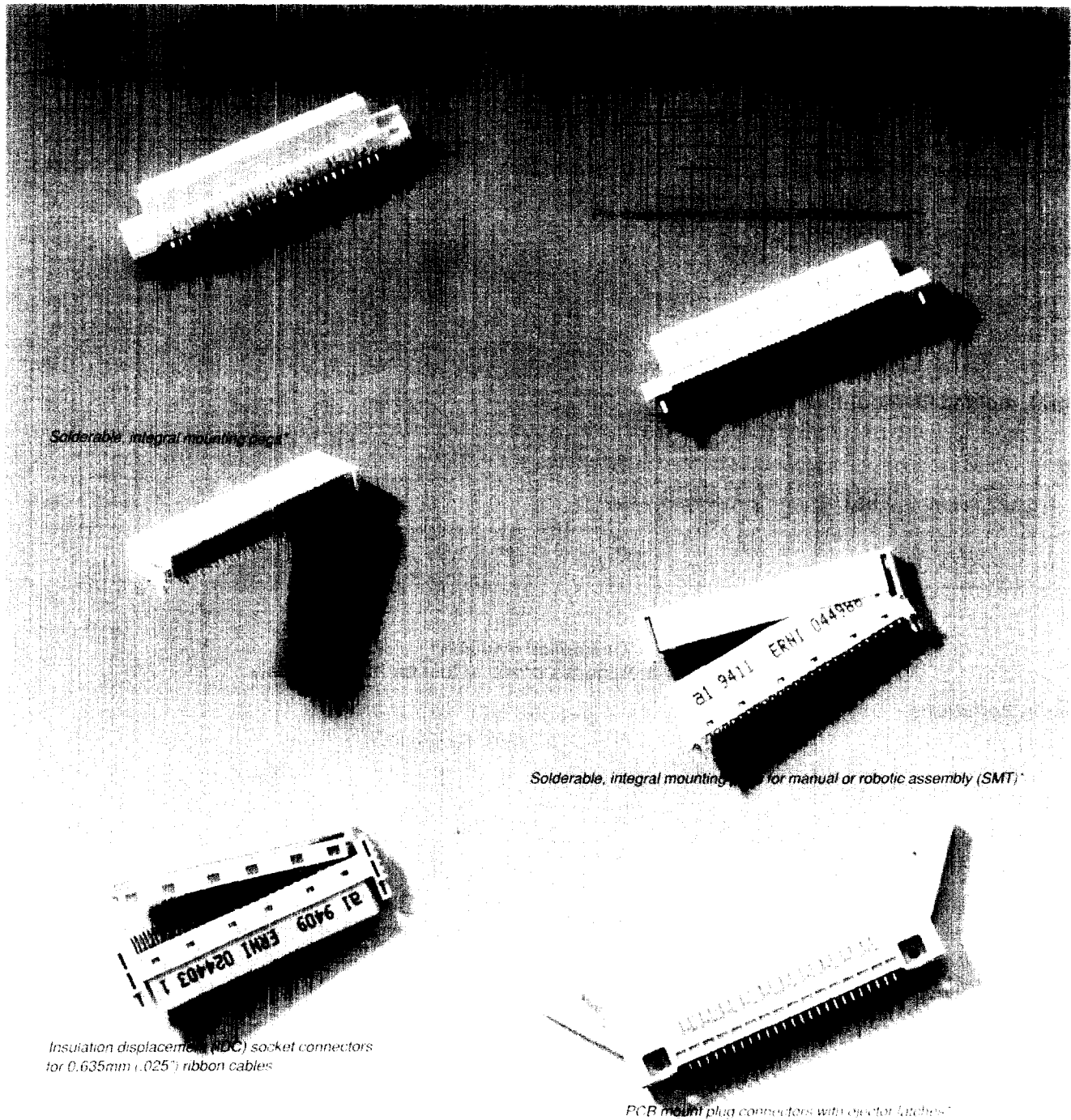
- Notebook, laptop and portable computers, compact peripherals, portable test and measurement equipment and other small electronic equipment.
- Stacking applications for multiple PC boards — e.g. two PC boards fit into 19" subracks and modular assemblies according to DIN 41494.
- Small systems in which PC boards are processed in thru-hole, SMT, or hybrid (thru-hole & SMT) technologies.
- Insulation displacement (IDC) socket connectors for .635mm (.025") ribbon cable.
- Plug connectors with ejector latches for a positive lock when mating to the IDC socket connectors.
- New mounting techniques such as pre-installed rivets or integral, molded-in mounting pegs to assure alignment and attachment to the PC board.
- New accessories such as an insertion cover for efficient manual or robotic assembly and application tooling to assure reliable cable and PCB assembly processing.

Mounting Options

The SMC series comes with a variety of options for fastening the connectors to a printed circuit board (PCB). The SMC connectors for PCB-to-PCB connecting, thru-hole solder and surface mount (SMT) terminations come with round hole mounting flanges for screw or rivet mounting to the PCB. These thru-hole or SMT versions are also offered with pre-installed rivets. Another mounting option features integral molded-in mounting pegs for alignment and fastening to the PCB. For SMT applications, the integral mounting peg in-

cludes a metal lead for additional mechanical attachment during the SMT soldering process as well as a cover for manual or robotic assembly.

The SMC plug connectors for cable-to-PCB connecting are available with Ejector Latches for a positive lock when fully mated to the insulation displacement (IDC) socket connector. For additional information or applications please contact the ERNI sales office.



Solderable, integral mounting pegs

Solderable, integral mounting pegs for manual or robotic assembly (SMT)

Insulation displacement (IDC) socket connectors for 0.635mm (.025") ribbon cables

PCB mount plug connectors with ejector latches

SMC

SMC Type B

Standard Design – 2 row; 12, 26 or 50 contacts

Plug and Socket Connectors with **Thru-hole Solder Connection Terminals** and Various Mounting Options

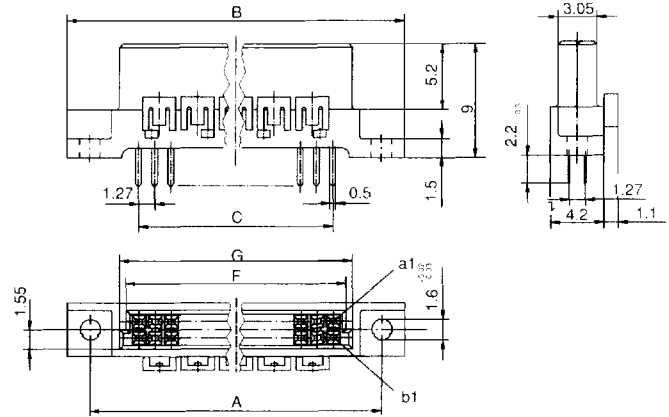
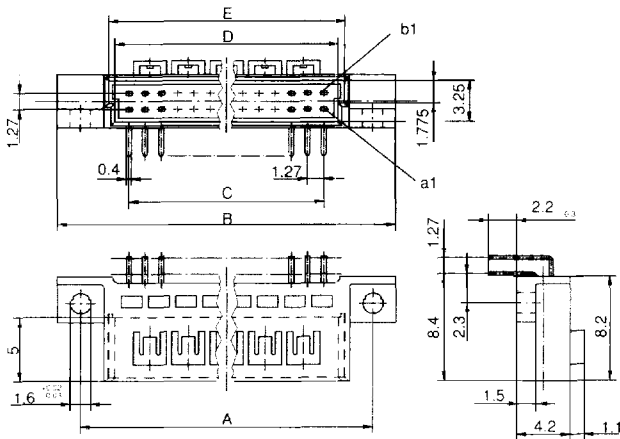
Dimensional drawings

Plug connector

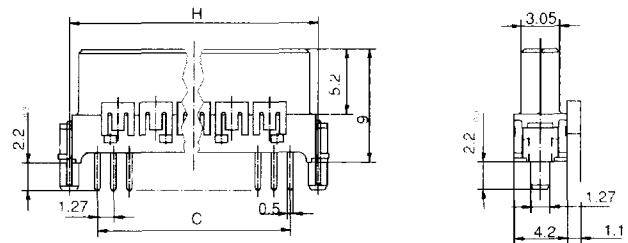
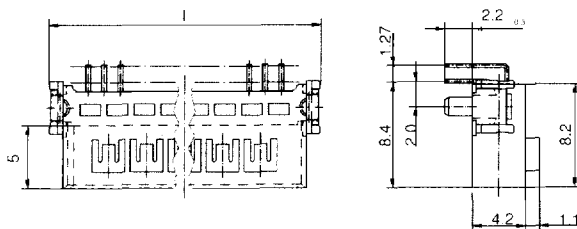
Socket connector

Thru-Hole

Mounting flange for screws or rivets



Integral, molded-in mounting pegs

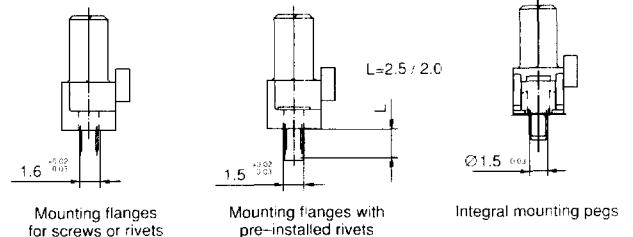
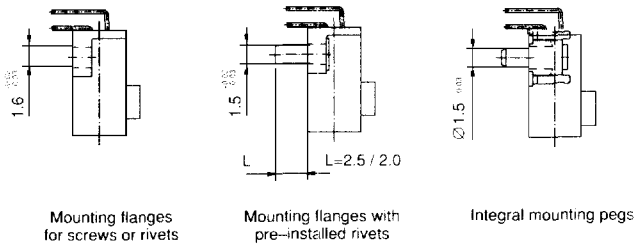


One option available:
Option A: Requires press-in tool for PCB assembly

Mounting Variations

Plug connector

Socket connector




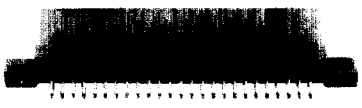
Dimensions (mm)

No. of Contacts	A _{+0.05}	B	C	D	E	F	G _{±0.03}	H	I
12	13.97	17.77	6.35	8.57	9.57	8.37	9.37	10.77	12.7
26	22.86	26.66 [*]	15.24	17.46	18.46	17.26	18.26	19.66	21.6
50	38.1	41.9	30.48	33.7	34.7	33.5	34.5	34.9	36.8

Ordering Information

Dimensional drawings found on page 4 or 12, illustrations found on page 3.

Plug and Socket Connectors with **Thru-hole Solder Connection Terminals** and Various Mounting Options

Versions	Plug connectors			Socket connectors		
Thru-Hole	SMC-B-... M ab			SMC-B-... F ab		
						
Number of Contacts	12	25	50	12	25	50
Round hole mounting flanges (screw or rivet mounting) Hole size: Dia. 1.6mm	033 560	033 561	004 442	033 562	033 563	004 441
	Dimensional drawing see page 4			Illustration see page 3		
Round hole mounting flanges With pre-installed rivets for 1.0mm PC board thickness	053 179	053 180	053 181	053 182	053 183	053 184
	PC board thickness 1.0mm Dimensional drawing see page 4			PC board thickness 1.0mm Illustration see page 3		
Round hole mounting flanges With pre-installed rivets for 1.6mm PC board thickness	053 185	053 186	053 187	053 188	053 022	044 651
	PC board thickness 1.6mm Dimensional drawing see page 4			PC board thickness 1.6mm Illustration see page 3		
Integral, molded-in mounting pegs Option A (Includes metal leads for optional soldering) Requires press-in tool (see page 15)	053 189	053 190	053 191	053 192	053 193	053 194
	Dimensional drawing see page 4			Illustration see page 3		
Ejector latches for mating to IDC socket Round hole mounting flanges (screw or rivet mounting) Hole size: 1.6mm	053 195	053 196	034 517			
	Dimensional drawing see page 12					
Ejector latches for mating to IDC socket With pre-installed rivets for 1.0mm PC board thickness	053 197	053 198	053 199			
	PC board thickness 1.0mm Dimensional drawing see page 12					
Ejector latches for mating to IDC socket With pre-installed rivets for 1.6mm PC board thickness	053 200	053 201	053 202			
	PC board thickness 1.6mm Dimensional drawing see page 12					

Notes:

- The termination length of 2.2mm is suitable for PC boards with thickness 1.6–2.0mm. Please contact the ERNI sales office for other termination length options.
- For versions with integral coding feature, please contact ERNI sales office.
- Dimensional drawings for plug connectors with ejector latches for mating to IDC socket can be found on page 282.
- Recommended PCB drill hole dimension for thru-hole lead: $0.65^{+0.02}$ mm.
- Required test dimension for plated thru-hole is 0.54mm.
- Information on application tooling for pressing in the mounting pegs can be found on page 285.

SMC Type B

Standard Design – 2 row; 12, 26 or 50 contacts

Plug and Socket Connectors with **SMT** Connection Terminals and Various Mounting Options

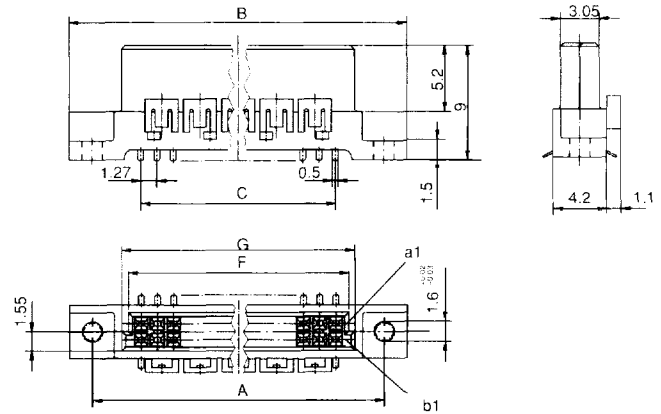
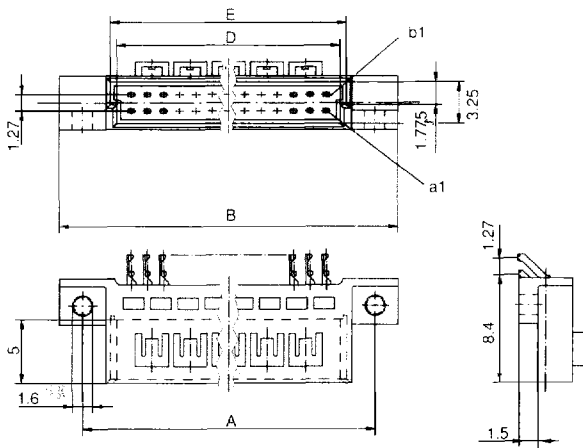
Dimensional drawings

Plug connector

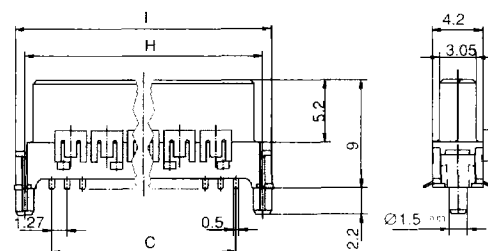
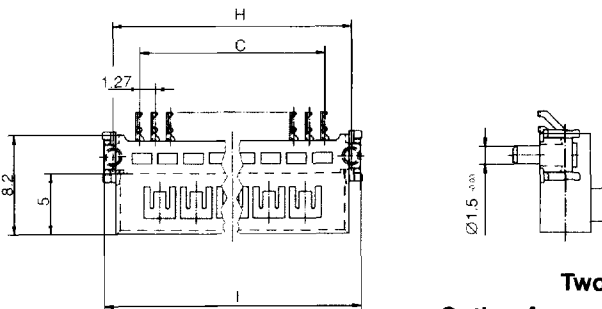
Socket connector

SMT

Mounting flange for screws or rivets



Integral, molded-in mounting pegs

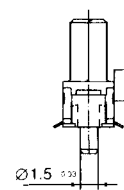
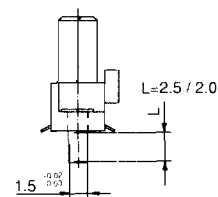
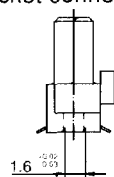
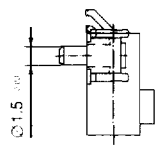
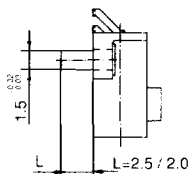
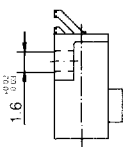


Two options available:
Option A: requires press-in tool for PCB assembly
Option B: for manual or robotic assembly

Mounting Variations

Plug connector

Socket connector



Mounting flanges for screws or rivets

Mounting flanges with pre-installed rivets

Integral mounting pegs

Mounting flanges for screws or rivets

Mounting flanges with pre-installed rivets

Integral mounting pegs



Dimensions (mm)

No. of Contacts	A±0.05	B	C	D	E	F	G±0.03	H	I
12	13.97	17.77	6.35	8.57	9.57	8.37	9.37	10.77	12.7
26	22.86	26.66	15.24	17.46	18.46	17.26	18.26	19.66	21.6
50	38.1	41.9	30.48	33.7	34.7	33.5	34.5	34.9	36.8

Ordering Information

Dimensional drawings found on page 6 or 12, illustrations found on page 3.

Plug and Socket Connectors with **SMT** Connection Terminals and Various Mounting Options

Versions	Plug connectors			Socket connectors		
SMT	SMC-B-... M ab			SMC-B-... F ab		
						
Number of Contacts	12	26	58	12	26	50
Round hole mounting flanges (screw or rivet mounting) Hole size: Dia. 1.6mm	033 564	033 565	004 862	033 566	033 567	004 861
	<i>Dimensional drawing see page 6</i>			<i>Illustration see page 3</i>		
Round hole mounting flanges With pre-installed rivets for 1.0mm PC board thickness	053 203	053 204	034 230	053 205	053 206	053 207
	PC board thickness 1.0mm <i>Dimensional drawing see page 6</i>			PC board thickness 1.0mm <i>Illustration see page 3</i>		
Round hole mounting flanges With pre-installed rivets for 1.6mm PC board thickness	053 208	053 209	033 690	053 023	053 210	034 427
	PC board thickness 1.6mm <i>Dimensional drawing see page 6</i>			PC board thickness 1.6mm <i>Illustration see page 3</i>		
Integral, molded-in mounting pegs Option A (Includes metal leads for optional soldering) Requires press-in tool (see page 15)	053 211	053 212	053 213	053 214	053 215	053 216
	<i>Dimensional drawing see page 6</i>			<i>Illustration see page 3</i>		
Integral, molded-in mounting pegs Option B For manual or robotic assembly (Includes metal leads for optional soldering)	044 985	053 222	053 337	044 984	053 220	053 221
	<i>Dimensional drawing see page 6</i>			<i>Illustration see page 3</i>		
Ejector latches for mating to IDC socket With round hole mounting flange for screw or rivet mounting	053 223	053 224	033 606			
	<i>Dimensional drawing see page 12</i>					
Ejector latches for mating to IDC socket With pre-installed rivets for 1.0mm PC board thickness	053 225	053 226	053 227			
	PC board thickness 1.0mm <i>Dimensional drawing see page 12</i>					
Ejector latches for mating to IDC socket With pre-installed rivets for 1.6mm PC board thickness	053 228	053 229	053 230			
	PC board thickness 1.6mm <i>Dimensional drawing see page 12</i>					



Notes:

- For versions with integral coding feature, please contact ERNI sales office.
- Dimensioned drawings for plug connectors with ejector latches for mating to IDC socket can be found on page 282.
- Oval or square soldering pads are recommended
- The SMT connector's terminal leads have been prestressed to provide a more flexible lead to accommodate the surface variations of the SMT solder pad.
- Information on application tooling for pressing in the mounting pegs can be found on page 285.

Ordering Information

Dimensional drawings found on page 8 or 12, illustrations found on page 3.

Plug and Socket Connectors with **Thru-hole Solder Connection Terminals** and Various Mounting Options

Versions	Plug connectors			Socket connectors		
Thru-Hole	SMC-Q-... M ab			SMC-Q-... F ab		
						
Number of Contacts	12	25	50	12	25	50
Round hole mounting flanges <small>(screw or rivet mounting) Hole size: Dia. 1.6mm</small>	033 568	033 569	004 901	033 574	033 575	004 443
	<small>Dimensional drawing see page 8</small>			<small>Illustration see page 3</small>		
Round hole mounting flanges <small>With pre-installed rivets for 1.0mm PC board thickness</small>	053 231	053 232	053 233	053 234	053 235	053 236
	PC board thickness 1.0mm <small>Dimensional drawing see page 8</small>			PC board thickness 1.0mm <small>Illustration see page 3</small>		
Round hole mounting flanges <small>With pre-installed rivets for 1.6mm PC board thickness</small>	053 021	053 237	044 652	053 238	053 239	044 650
	PC board thickness 1.6mm <small>Dimensional drawing see page 8</small>			PC board thickness 1.6mm <small>Illustration see page 3</small>		
Integral, molded-in mounting pegs Option A <small>(Includes metal leads for optional soldering) Requires press-in tool (see page 15)</small>	053 240	053 241	053 242	053 243	053 244	053 245
	<small>Dimensional drawing see page 8</small>			<small>Illustration see page 3</small>		
Ejector latches for mating to IDC socket <small>With round hole mounting flange for screw or rivet mounting.</small>	053 246	053 247	034 516			
	<small>Dimensional drawing see page 12</small>					
Ejector latches for mating to IDC socket <small>With pre-installed rivets for 1.0mm PC board thickness</small>	053 248	053 249	053 250			
	PC board thickness 1.0mm <small>Dimensional drawing see page 12</small>					
Ejector latches for mating to IDC socket <small>with pre-installed rivets for 1.6mm PC board thickness</small>	053 251	053 252	053 253			
	PC board thickness 1.6mm <small>Dimensional drawing see page 12</small>					

Notes:

- For versions with integral coding feature, please contact ERNI sales office.
- Dimensioned drawings for plug connectors with ejector latches for mating to IDC socket can be found on page 282.
- Recommended PCB drill hole dimension for thru-hole lead: $0.65^{+0.02}$ mm.
- Required test dimension for plated thru-hole is 0.54mm
- Information on application tooling for pressing in the mounting pegs can be found on page 285.

SMC Type Q

Inverse Design – 2 row; 12, 26 or 50 contacts

Plug connectors with **SMT** Connection Terminals and Various Mounting Options

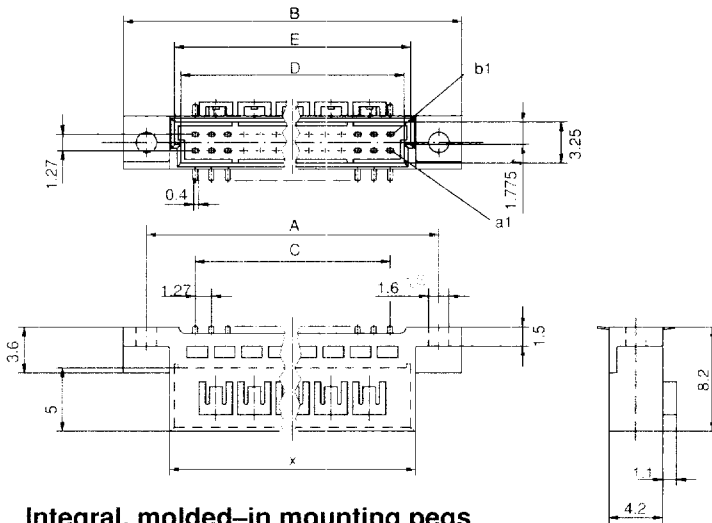
Dimensional drawings

Plug connector

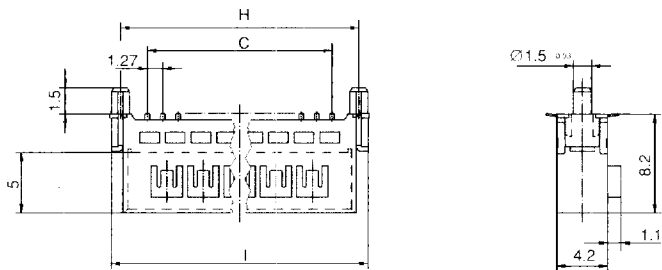
Socket connector currently not available

SMT

Mounting flange for screws or rivets



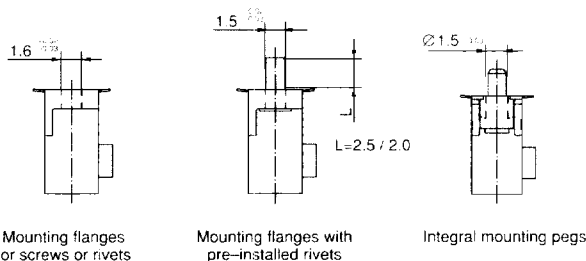
Integral, molded-in mounting pegs



Two options available:
Option A: requires press-in tool for PCB assembly
Option B: for manual or robotic assembly

Mounting Variations

Plug connectors




Dimensions (mm)

No. of Contacts	A ± 0.05	B	C	D	E	H	I
12	13.97	17.77	6.35	8.57	9.57	10.77	12.7
26	22.86	26.66	15.24	17.46	18.46	19.66	21.6
50	38.1	41.9	30.48	33.7	34.7	34.9	36.8

Ordering Information

Dimensional drawings found on page 10 or 12, illustrations found on page 3.

Plug Connectors with **SMT** Connection Terminals and Various Mounting Options

Versions	Plug connectors			Socket connectors		
SMT	SMC-Q-... M ab 			Currently not available		
Number of Contacts	12	26	50	12	26	50
Round hole mounting flanges (screw or rivet mounting) Hole size: Dia. 1.6mm	033 572	033 573	004 863			
	Dimensional drawing see page 10					
Round hole mounting flanges With pre-installed rivets for 1.0mm PC board thickness	053 254	053 255	053 256			
	PC board thickness 1.0mm Dimensional drawing see page 10					
Round hole mounting flanges With pre-installed rivets for 1.6mm PC board thickness	053 257	053 024	034 824			
	PC board thickness 1.6mm Dimensional drawing see page 10					
Integral, molded-in mounting pegs Option A (Includes metal leads for optional soldering) Requires press-in tool (see page 15)	053 258	053 259	053 260			
	Dimensional drawing see page 10					
Integral, molded-in mounting pegs Option B For manual or robotic assembly (Includes metal leads for optional soldering)	053 261	053 262	053 263			
	Dimensional drawing see page 10					
Ejector latches for mating to IDC socket With round hole mounting flange for screw or rivet mounting.	053 264	053 265	033 607			
	Dimensional drawing see page 12					
Ejector latches for mating to IDC socket With pre-installed rivets for 1.0mm PC board thickness	053 266	053 267	053 268			
	PC board thickness 1.0mm Dimensional drawing see page 12					
Ejector latches for mating to IDC socket With pre-installed rivets for 1.6mm PC board thickness	053 269	053 270	053 271			
	PC board thickness 1.6mm Dimensional drawing see page 12					

Notes:

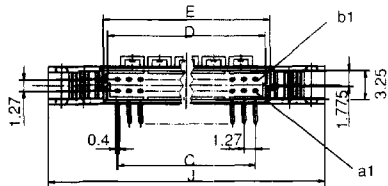
- For versions with integral coding feature, please contact ERNI sales office.
- Dimensioned drawings for plug connectors with ejector latches for mating to IDC socket can be found on page 282.
- Oval or square soldering pads are recommended (see page 14)
- The SMT connector's terminal leads have been prestressed to provide a more flexible lead to accommodate the surface variations of the SMT solder pad.
- Information on application tooling for pressing in the mounting pegs can be found on page 285.

SMC Type B & Q Plug Connectors for Cable-to-PCB Connecting

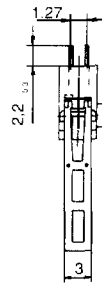
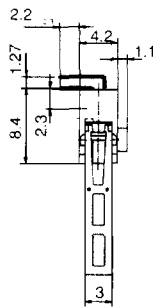
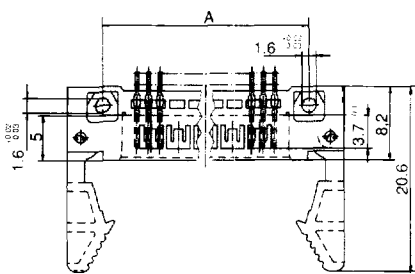
PCB Mount Plug connectors with **Ejector Latches** for Mating to Insulation Displacement (IDC) Socket Connectors

Dimensional drawings

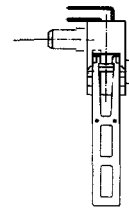
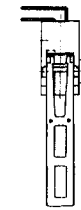
Plug connector



Part numbers for the various plug configurations with options for mounting flanges can be found on pages 5, 7, 9 or 11 depending on the Type (Standard or Inverse) and the PCB mounting (Thru-hole or SMT)



Mounting Variations



Mounting flanges for screws or rivets

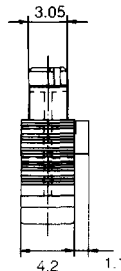
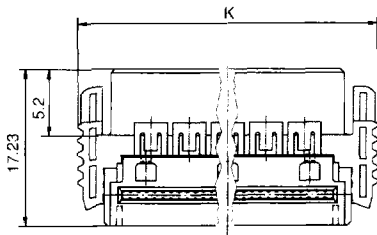
Mounting flanges with pre-installed rivets

SMC Type B Insulation Displacement (IDC) Socket Connectors

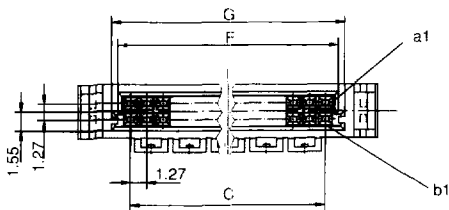
Socket Connector with **Insulation Displacement (IDC) Terminals** Contacts for 0.635mm (.025") grid Ribbon Cables

Dimensional drawings

Socket connector



IDC





Dimensions (mm)

No. of contacts	A ± 0.05	C	D	E	F	G ± 0.03	J ± 0.1	K ± 0.1
12	13.97	6.35	8.57	9.57	8.37	9.37	21.77	14.57
26	22.86	15.24	17.46	18.46	17.26	18.26	30.66	23.46
50	38.1	30.48	33.7	34.7	33.5	34.5	45.9	38.7

Ordering Information

Dimensional drawings found on page 12, illustrations found on page 3.

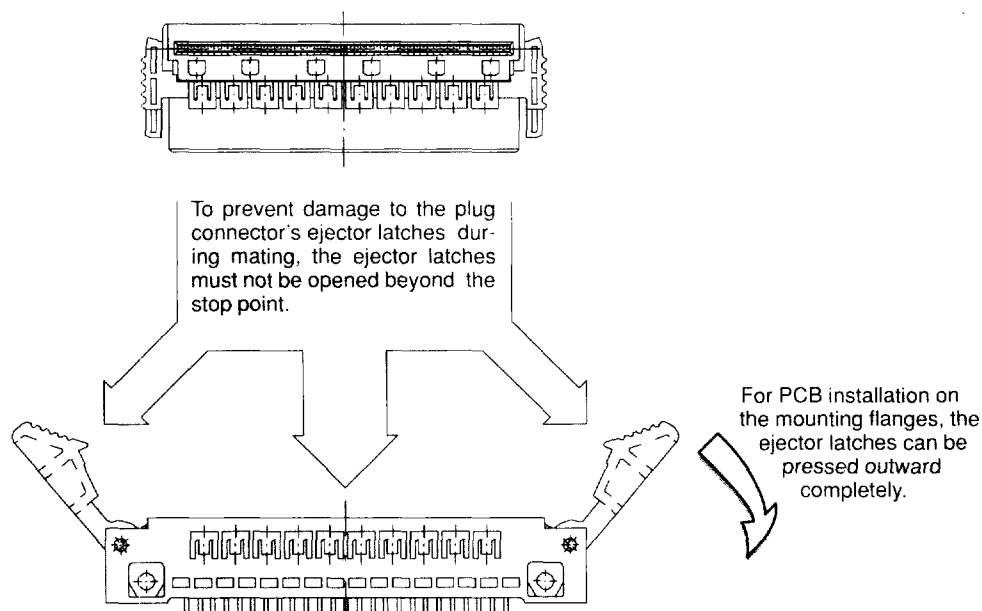
Socket Connector with **Insulation Displacement (IDC) Terminals** for 0.635mm (.025") Ribbon Cables

Versions	Plug connectors			Socket connectors		
IDC	Part numbers for the various plug configurations with options for mounting flanges can be found on pages 5, 7, 9 and 11 depending on the Type (Standard or Inverse) and the PCB mounting (thru-hole or SMT).			SMC-B-... F ab		
						
Number of Contacts	12	26	50	12	26	50
The IDC socket connector can mate with any SMC plug connector with or without ejector latches.	not available			044 663	044 658	024 403
				Dimensional drawing see page 12 Illustration see page 3		

Notes:

- For information on appropriate ribbon cable, see pages 2 and 15.
- The IDC socket connector can mate with any SMC plug connector with or without ejector latches.
- During PCB installation (with screws or rivets) of the mounting flanges of the straight plug connectors with ejector latches, the ejector latches should be pressed outward completely to provide clearance around the mounting flange (*Please use caution when pressing the ejectors to this outward position*). After completing PCB mounting of the mounting flange, the ejector latches should be returned to the original open, stop point position.
- Prior to mating an IDC socket connector to a PCB mount plug connector with ejector latches, the latches must be in the open position but **not beyond the stop point** (see diagram below).
- For information on insulation displacement (IDC) tooling, see page 15.

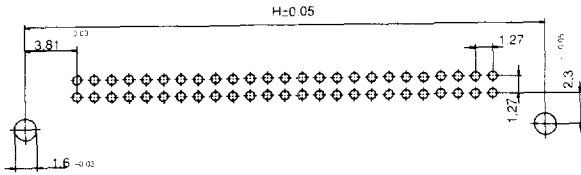
Important note on the use of the plug connectors with ejector latches.



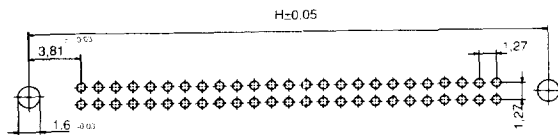
Suggested Mounting Hole Patterns

Dimensional drawings

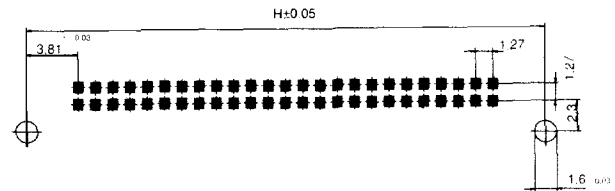
Plug connectors Type B (solder)
Socket connectors Type Q (solder)



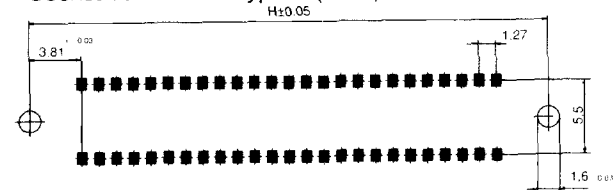
Plug connectors Type Q (solder)
Socket connectors Type B (solder)



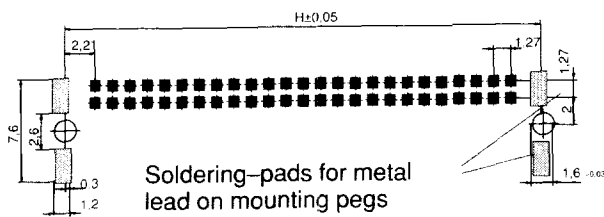
Plug connectors Type B (SMT)



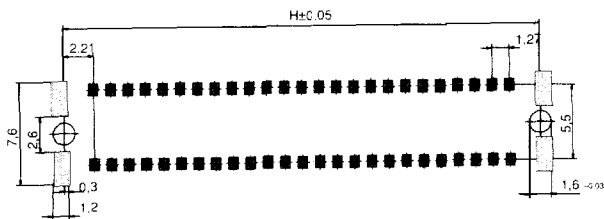
Plug connectors Type Q (SMT)
Socket connectors Type B (SMT)



Plug connectors Type B with integral mounting pegs (SMT)



Plug connectors Type Q with integral mounting pegs (SMT)
Socket connectors Type B with integral mounting pegs (SMT)



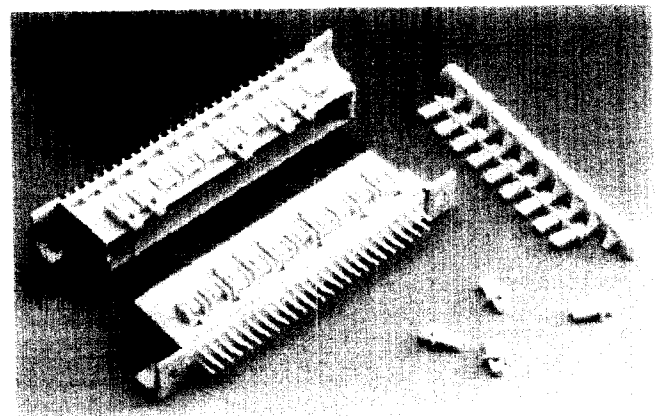
The metal lead of the mounting pegs can be soldered to a SMT pad.

Ordering Information – Coding Accessories

SMC connectors have an integral coding system. Both the plug and socket connectors have molded slots on the sides into which coding tabs can be inserted. This provides for multiple coding arrangements.

For example, the SMC 50 position connectors have up to 252 coding options.

Coding Tabs (10 per assembly)	
Part Number	433 620



Ordering Information, Ribbon Cable

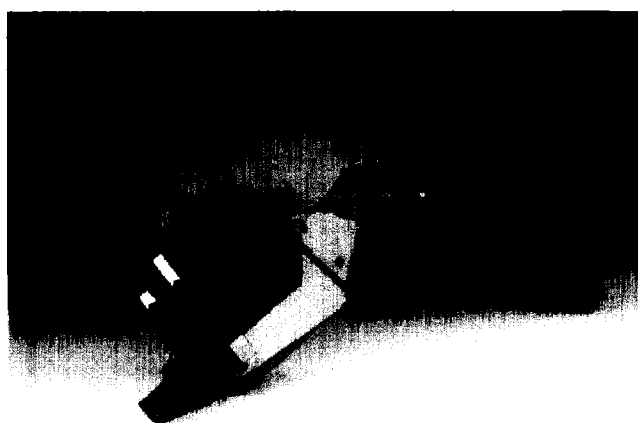
	Part no., 50 conductor	Part no., 26 conductor	Part no., 12 conductor
Part no. for 1 meter	034 575	053 787	053 786

Ordering Information, Application Tooling for Mounting Pegs

Mounting pegs are pressed into the drill holes of the PC board with the aid of a mounting peg insertion tool. This tool can be installed onto a manual hand tool or an arbor press.

Mounting Peg Insertion Tool			
No. of Contacts	12	26	50
for hand tool	053 286	053 285	053 284
for arbor press	053 142	053 141	053 118

Manual Hand Tool for use with Mounting Peg Insertion Tool	
Part number	053 283



Ordering Information, Tooling for Rivet Mounting

SMC connectors can be supplied with pre-installed, 1.5mm (.059") rivets in the connector's round hole mounting flanges. Standard rivet tooling or the following tooling is recommended.

Rivet Tooling Fixtures			
No. of contacts	12	26	50
for hand tool	053 289	053 288	053 287
for arbor press	053 296	053 295	651 050

Manual Hand Tool for use with Rivet Tooling Fixtures	
Part number	053 283

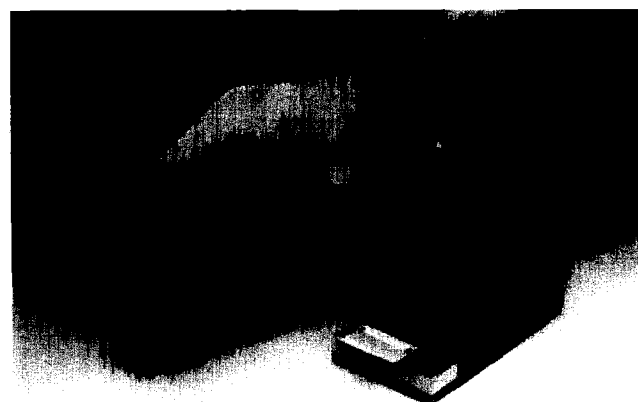


Ordering Information, Insulation Displacement (IDC) Tooling

Cable alignment fixtures are necessary for proper IDC terminating of 0.635mm (.025") cable to the SMC socket connectors.

Cable Alignment Fixture for IDC Termination			
No. of contacts	12	26	50
for hand tool	053 292	053 291	053 290
for arbor press	053 294	053 293	034 828

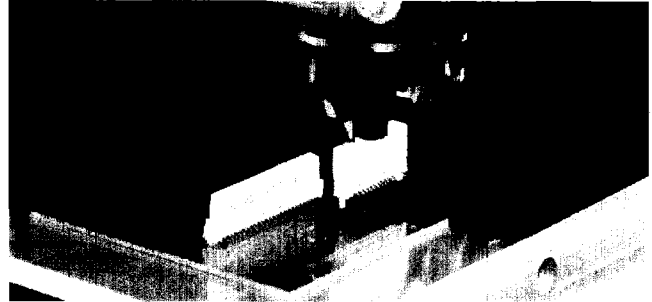
Manual Hand Tool for use with Cable Alignment Fixtures for IDC	
Part number	053 283



Ordering Information – Connector Covers for Automated Assembly

Covers for the automated PC board assembly of SMC connectors are available. These covers are placed over the mating side of the connector for compatibility with robotic, pick and place assembly equipment (vacuum suction type).

Mounting cover			
Number of Contacts	12	26	50
Part no. for plugs	on request		
Part no. for sockets	044 913	044 912	044 911



Additional Information

SMC Connector System Highlights

The continued expansion of electronic applications has increased the demand for high density, high performance interconnection products. To meet these emerging needs, ERNI has engineered the SMC Board-to-Board and Cable-to-Board Connector System.

Based on more than 40 years of experience, the SMC is a miniature connector system with a 1.27mm (.050") centerline, permitting a high degree of design and packaging versatility. There are three types of termination: Thru-hole straight and right angle; SMT straight and right angle; and IDC for .635mm (.025") ribbon cable. ERNI's SMC connectors also are available in a range of sizes to satisfy your individual application needs.

The SMC connector system offers a variety of options for reliable PC board interconnection. For thru-hole and surface mount terminations (SMT), these connectors come with round hole mounting flanges for screw or rivet mounting. An additional mounting option features integral molded-in mounting pegs for alignment and fastening to the PCB. For SMT applications, the integral mounting peg includes a metal lead for additional mechanical attachment during the SMT soldering process as well as a cover for manual or robotic assembly.

With ever-increasing packaging density requirements, ERNI continues to explore new interconnection alternatives. A successful track record and thousands of satisfied customers guarantees our product performance and customer satisfaction. We invite your inquiry and look forward to helping you achieve a reliable, cost-effective system design.

